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KNOWLEDGE-DRIVEN POLITICS OR POLITICAL MOTIVATED KNOWLEDGE DISTRIBUTION?
THE INFLUENCE OF ENVIRONMENTAL THINK TANKS ON NATIONAL CLIMATE POLITICS EVIDENCE FROM GERMANY

Abstract: Climatologists agree on that anthropogenic climate change is among the most pressing political challenges. Despite scientific consent international climate politics are effectively gridlocked since the Copenhagen Summit. Against the background of the growing significance of scientific expertise, especially in highly complex fields like climate politics the global spread of specialized agencies (environmental think tanks) has to be analyzed with regard to the question whether scientific consulting indicates a rationalization of politics or points towards an increase of political motivated knowledge production and distribution. Comparing national 'knowledge regimes' allows for estimating whether we face a transition towards more rational climate politics.

Key words: *Climate Politics, Think Tanks, Political Decision Making, Network Analysis*

INTRODUCTION

As human beings, we are vulnerable to confusing the unprecedented with the improbable. In our everyday experience, if something has never happened before, we are generally safe in assuming it is not going to happen in the future, but the exceptions can kill you and climate change is one of those exceptions. [4]

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change [8] leaves little doubt that anthropogenic climate change is among the most urgent challenges today: It´s 'extremely likely' that human influence is the driving force of the observed warming since the mid-20th century. The interplay between industrial production, rising greenhouse gas emissions and global climate change is wide-

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ly accepted in the scientific community but political climate negotiations are effectively gridlocked since the Copenhagen Summit of 2009. How can this discrepancy be explained? The inability to formulate comprehensive climate politics at the national and international level seems all the most surprising, since climate change and the related politics of mitigation and adaption are described as textbook examples for the increased demand of scientific guidance in (political) decision making.

Coping with climate change is highly demanding for political decision makers around the globe. On the global scale it can be described as an asymmetric tragedy of the commons problem [19][20]. Linking a specific event (e. g. a drought or flood) to climate change is not only difficult but needs complex scientific modeling and interpretation. Yet, faced with ever more complex challenges political decision-makers turn to science for expertise and advice. Accordingly, the observed increase in numbers and global spread of specialized research organizations and consultancies, so called think tanks [15][16] is often explained by the increased complexity of societal problems and an rising demand for expertise able to 'bridge the gap between knowledge and power' [14] Are we standing at the brink of a fundamental rationalization of decision-making? The persisting discrepancy between scientific advice and actual progress in international climate politics proves that this is clearly not the case. Moreover, as McCright and Dunlap [12] [13] have shown for the USA, scientific expertise can easily be abused (or tailored) to suit certain political interest: The interplay between scientific advice on the one hand and political decision-making on the other must not be expressed as simple as 'speaking truth to power' [10]. Scientific expertise itself might be used (and even be intended to be used) to back normative position and legitimize specific political actions. Focusing on think tanks will enable us to consider the both of these possible functions of expert advice. As I´ll outline below, the term 'think tanks' refers to academic research facilities as well as to advocacy organization providing biased advice in 'scientific disguise'. In the following, I´ll start with a short discussion of the potential impact of scientific knowledge on decision-making. I´ll then turn to think tanks as specific providers of (scientific) knowledge. In a next step a conceptual framework for analyzing the strategies and the influence of different types of environmental think tanks will be outlined, before I will present and discuss some empirical evidence from research networks in Germany.

1. THE INTERPLAY OF SCIENTIFIC KNOWLEDGE AND DECISION-MAKING

Become wise yourself, or if you are incapable of it, let yourself be guided by one who is truly wise. [18]

Current debates on modernization emphasize the transformation towards a knowledge society. In a broad sense this means that '(t)the significance of knowledge is growing in all spheres of life and in all social institutions of modern society' [21]. In climate politics it seems that not only the significance of, but the necessity for scientific advice is increasing. But what does this gain in importance of knowl-

edge imply? In the relevant literature three different interpretations can be found. Optimistic approaches expecting a fundamental rationalization of political decision-making. In this view, the availability of scientific advice will alter political dispute in general, for 'a science-based solution will be agreeable to warring parties, since it transcends the ideological (metaphysical) differences [5]. Following Habermas [6] such rationalist views can be subsumed under rationalist-technocratic models, which expect political-decision making to transform into the skillful implementation of scientific truth. [6] While a model of a de facto usurpation of political decision making by 'experts' would pose serious problems of legitimacy (at least in democracies) scientific discourse points towards skepticism against the viability and feasibility of policy prescription based solely on scientific advise [9]. Expert selection and the fundamental problem of the 'contingency of knowledge' [9] add further criticism of the linear-rationalist model [5]. More pragmatic approaches describe scientific advice as only one source of information politicians may consider in their everyday business of 'muddling through'. The most critical strand stresses the fundamental differences between science and politics. As societal subsystems the ruling codes differ. While 'science' is structured by its ruling code of 'truth' [11] [5] 'politics' is dominated by 'power'. From this perspective scientific knowledge is useful only if and insofar as it contributes to gaining (or keeping) political power. As for example McCright and Dunlap [12] [13] point out 'expertise' which appears to be 'scientifically' is instrumental in backing ideological positions in US American climate politics. Form their perspective the increased significance of knowledge must not lead to the rationalization of political decision making but will alter the resources and techniques available for legitimizing normative positions.

So where do think tanks (the main object of research here) fit in? Think tanks are organizations 'at the intersection of academia and politics' [22] trying to 'make academic theories and scientific paradigms policy relevant' (ibid.). They are more than alternative version of research facilities though. Think tanks sometimes actively seek 'to shape the parameters of public debate' (ibid.) especially if they have a 'ideological disposition' (ibid.) Think Tanks are suitable indicators for the increased significance of knowledge. Analyzing think tank power, the ways they seek to exert influence will help to decide which theoretical approach offers the best explanation for the interplay of science and politics. We therefor have to turn to the questions which types of think tanks exist, and what they´re actually doing. This is the topic of the next section.

2. RISE AND SPREAD OF THINK TANKS: INDICATOR FOR THE TRANSFORMATION TOWARDS 'KNOWLEDGE-BASED POLITICS'?

A useful think tank typology, applicable not only to the American case, is provided by Weaver [24]. He draws on the dichotomy of 'Universities without Students' (UWS) and 'advocacy' think tanks. UWS 'tend to be characterized by heavy reliance on academics as researches, by funding primarily from private sector (…),

and by book-length studies as the primary research product' [24]. They provide scientific advice and contribute to shape the 'climate of elite opinion' (ibid.) UWS as well as 'contract research organizations' (ibid. 566) (which compile scientific reports for government agencies/ contractors) comply with the high standards of academic inquiry and can be labeled 'academic think tanks'. In contrast, advocacy think tanks 'combine a strong policy, partisan or ideological bent with aggressive salesmanship and an effort to influence current policy debates. ' (ibid.) The fundamental difference between academic and advocacy think tanks becomes evident when the different roles think tanks can play are taken into account. According to Weaver [24] think tanks can be a 'source of policy ideas' function as evaluators of policy proposals and programs, provide skilled personnel and be a source of 'punditry'. Because of the various types and roles of think tanks any attempt to measure their influence on political decision-making faces considerable obstacles [25]. These obstacles can only be overcome when different strategies for exerting influence (1) and the effects of distinct institutional environments (2) are taken into account:

(1) According to their respective motivation (compliance with the standards of scientific impartiality or ideological disposition) think tanks have to choose between different options how to bridge the gap between knowledge and politics. With his 'typology of ideas', Campbell [1] provides a conceptual approach for distinguishing between distinct effects of political ideas (cf. Table 1). They can influence decision-making as concepts in the foreground or as underlying assumptions in the background of policy debates and be located at the cognitive or normative level respectively. At the cognitive level they can function either as *programs (*foreground), that is they serve as policy prescriptions for the political elite necessary to formulate actual agendas, or as *paradigms* (background), restricting the boundaries of 'thinkable solutions'. At the normative level they can provide frames for legitimizing policy solutions or influence the public sentiments constraining the range of legitimate solutions.

Table 1: Types of Ideas and their effects on policy making

	Concepts and theories in the foreground of the policy debate	Underlying assumptions in the background of the policy debate
Cognitive Level	*Programs* Ideas as elite policy prescription that help policy makers to chart a clear and specific course of policy action	*Paradigms* Ideas as elite assumptions that constrain the cognitive range of useful solutions available to policy makers
Normative Level	*Frames* Ideas as symbols and concepts that help policy makers to legitimize policy solutions to the public	*Public Sentiments* Ideas as public assumptions that constrain the normative range of legitimate solutions available to policy makers

Source: [1]

From this analytical perspective, some functional differentiation between the activities of specific types of think tanks can be derived: Academic think tanks, in particular contract research organizations will most likely try to provide assistance in the formulation of programs and frames. Paradigms and public sentiments in place are influencing what their clients consider either useful or legitimate. As a result, the scope and aim of contracts offered Academic Think Tanks will be constrained accordingly. UWS will most likely challenge or support political paradigms. The comprehensiveness of their research makes it less suitable for charting specific political action but may affect the range of solutions considered useful by political decision makers. Finally, advocacy think tanks will primarily exert their influence on the normative level. By providing expertise helpful to legitimize policy solutions and affect the range of solutions considered legitimate these organizations can alter frames available to policy makers and influence public sentiments.

Focusing on think tanks and their respective strategies (organizational level) isn´t sufficient to answering the initial question of why and when politics are knowledge driven. We have to consider (2) the influence of the institutional environment, the 'interaction between ideas and institutions' [2] to explore how specific 'knowledge regimes' work. By combining theoretical work on policy-making and production regimes Campbell and Pedersen develop a typology of distinct patterns of how knowledge is produced and disseminated in different institutional environments (Table 2).

Table 2: Typology of Knowledge Regimes

	Liberal Market Economy	Coordinated Market Economy
Decentralized, Open State	*Market oriented knowledge regime* Large, privately funded research unit sector in civil society Scholarly and advocacy research units dominate Highly adversarial, partisan, and competitive knowledge production process	*Consensus oriented knowledge regime* Moderate, publicly funded research unit sector in civil society Scholarly, party, and state research units even balanced Consensus oriented, relatively nonpartisan knowledge production process
Centralized Closed State	*Politically tempered knowledge regime* Small, publicly and privately funded research unit sector in civil society Scholarly, advocacy, and state research units evenly balanced Moderately adversarial, partisan, and competitive knowledge production process	*Statist technocratic knowledge regime* Large, publicly funded research unit sector in civil society Scholarly, and state research units dominate Technocratic, nonpartisan knowledge production process

Source: [2]

Market oriented and politically tempered knowledge regimes are 'market places for ideas': Competition dominates the process of knowledge production and distribution. Consultancies engaged in agenda setting and the provision of support for political positions have ample opportunity to sell their ideas. Advocacy organizations skilled in 'aggressive salesmanship' [24] can thrive. In contrast consensus oriented and statist-technocratic knowledge regimes are rather hostile environments for advocacy. Here, the provision of expertise is guided by the principle of impartiality and is moderated by an overall orientation towards political consensus.

To explain how think tanks influence climate politics the analytical model must consider and test for three different dimensions. (1) Different types of think tanks and their respective purposes have to be taken into account. (2) Their respective strategies to exert influence in the background/ foreground and at the normative and cognitive level have to be analyzed and be explained (3) in the context of distinct knowledge regimes.

In sum, the ability to pursue a strategy and to successfully influence political decision-making (either by the provision of advice or advocacy) depends on the network-positions of individual think tanks (1 + 2) as well as on the network structure (3). Starting form the general assumption 'that interpersonal ties matter, as do ties among organizations, or goods'[3] social network analysis (SNA) offers a methodological approach to explore social structures with regard to the transmission of information and the exertion of influence. SNA is therefore well suited to provide the necessary tools to test the model outlined above.

3. DATA AND METHODOLOGY

To decrypt the German think tank landscape and to explore the structure of environmental consulting methods of social network analysis were employed. Network data was compiled by combining information from the 'think tank directory database' (basic information on think tank types) and thinktankmap. org. Data on climate research projects was coded to get an undirected network of climate related research cooperation. The data file included information on ongoing project cooperation (year of reference is 2013) as well as organizational data (type of the respective organization) and was then analyzed by using the SNA-software Pajek to uncover ties between contractors (Think tanks) and clients. 21 academic and 12 advocacy think tanks were included in the dataset. In addition 13 government authorities, occurring as clients and four industrial / civil society organization (clients/ cooperation partners) have also been considered (see Appendix for a complete list of organization and selected network data). The ratio of academic and non-academic think tanks reproduces structural data provided by Thunert [23] who describes the German case as dominated by academic think tanks (accounting for about 50 per cent) with advocacy think tanks (about 30 per cent) trailing behind (contract research institutions and party affiliated think tanks accounting for 10–15% each) [23].

4. EMPIRICAL EVIDENCE – THE CASE OF GERMANY

Based on the project data on ongoing climate research complex patterns of cooperation could be uncovered. Academic Think tanks are not only the majority but are relatively more important. Following Hanneman and Riddle [7] the closeness centrality for all actors was calculated[1] to measure their relative importance. Closeness centrality is defined as the number of all other actors in the network divided by the sum of all distances between the respective think tank and all others and therefore informs how close a given actor is to other nodes in the network. While the average closeness centrality is almost equal (0,26 / advocacy 0,27 academic think tanks) differences become visible when privileged actors are identified. Among the most central actors in the network are with the Potsdam Institute for Climate Impact Research (0,4353), the Wuppertal Institute for Climate, Environment and Energy (0,3718) and the Institute for Ecological Economy Research IÖW (0,3499) three academic think tank with the Öko-Institute (0,2950) as an advocacy think tank clearly trailing behind. As displayed in figure 1, governmental authorities also play a crucial role. Ministries and Federal Agencies are by far the most important clients for environmental think tanks. Provision of expertise is demand driven an should mainly help government authorities to formulate programs and evaluate paradigms. Environmental consulting in Germany seems to focus on the cognitive level.

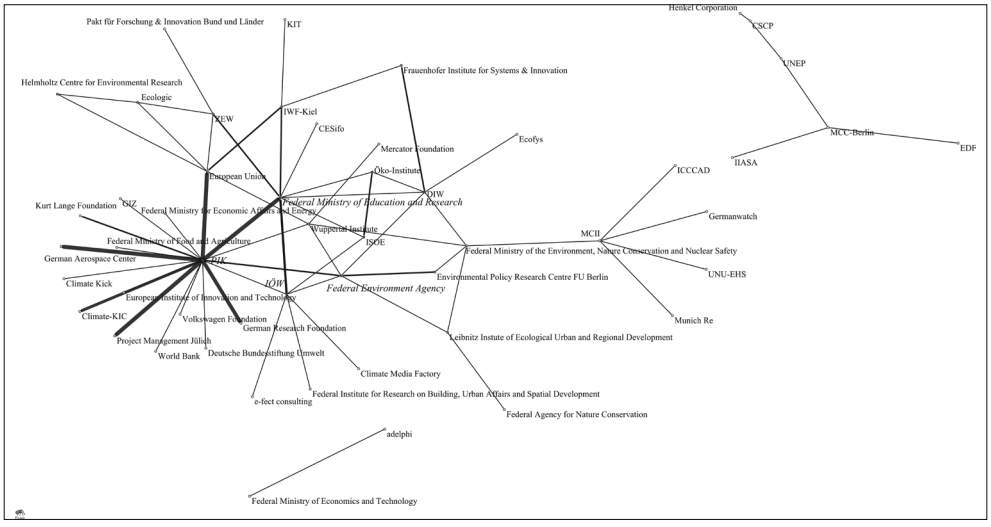

Figure 1. Environmental research cooperation in Germany
Source: own calculation

[1] Since the overall network contains seperate components, mesaurement was limited to largest network component [17] Average degree centrality measures apply for the major component only.

The empirical evidence presented here reveals the consensus orientation in knowledge production and distribution in Germany. In line with a general consensus orientation in decision-making Germany the specific opportunities and limitations of environmental think tanks to exert influence can be explained by Germanys semblance with the 'consensus oriented' type knowledge regime.

These findings underline the significance of distinct knowledge regime for the way think tanks operate. In contrast to more competitive knowledge regimes like the market oriented USA advocacy plays only a minor role [12] [13]. But the German example reveals yet important differences to Asian countries like Japan or South Korea. In those cases the influence of think tanks, also mainly exerted at the cognitive level, is limited to the provision of (technical) expertise for political programs but is unable to affect political paradigms [20]. While German think tanks are influential in the fore-, as well as in the background of political debate and those in the USA operate freely on the cognitive and normative level, their Asian counterparts are limited to advice on specific programs.

CONCLUSION

Dealing with anthropogenic climate change is a challenge for political decision makers. Complex problems increase the demand for expertise and scientific advice. Against this background, the global spread of highly specialist think tanks, scientific debate focuses on whether this indicates towards the rationalization of politics or the utilization of science by political decision makers. As I have tried to outline here, answering these questions calls for specific types of research organizations and consultancies to be taken into account. Moreover, different strategies and access points for infusing ideas into the political debate have to be considered. As the results of social network analysis of research cooperation show, the institutional environment, the respective 'knowledge regimes' play an important role in explaining why specific types of organization thrive in one country while others struggle to get attention.

The complexity of political challenges is surely increasing. Solutions demand long-term thinking and international cooperation. The significance of knowledge is certainly on the rise for political decision-making. The rise and spread of think tanks does not imply a great transformation towards a monolithic model of a knowledge society though. Neither are all think tanks committed to the standards of scientific impartiality and objectivity, nor are political decision makers willing to surrender their freedom of action. As a result, we are facing not one transformation, but many. This has important implications for future research. The widespread increase of the significance of knowledge has to be analyzed carefully to be able to distinguish between knowledge driven politics and politically motivated knowledge distribution.

APPENDIX: NETWORK STATISTICS

Name*	Type	Sum Line Values**	Closeness Centrality
Adelphi*	Advocacy	1	
Federal Ministry* Economics & Technology	Government	1	
ZEW	Academic	5	0,2855850
European Union	Government	30	0,3499820
Federal Ministry of Education and Research	Government	31	0,3838510
Pakt für Forschung & Innovation	Government	1	0,2137610
CSCP*	Academic	2	
Henkel Corporation*	Industry	1	
UNEP*	Government	2	
IWF Kiel	Academic	6	0,2878880
Frauenhofer Institue	Academic	3	0,2531780
KIT	Academic	1	0,2150490
MCC Berlin*	Academic	3	
IIASA*	Advocacy	1	
EDF*	Advocacy	1	
MCII	Advocacy	5	0,2461940
Federal Ministry of the Environment	Government	5	0,3216050
Munich Re	Industry	1	0,1908990
Germanwatch	Advocacy	1	0,1908990
ICCCAD	Academic	1	0,1908990
UNU-EHS	Academic		0,1908990
Öko- Institute	Advocacy	4	0,2950260
ISOE	Academic	4	0,2833180
PIK	Academic	90	0,4353430
Climate KIC	Advocacy	4	0,2878880
German Aero Space Center	Academic	16	0,2878880
GIZ	Government	1	0,2878880
German Research Foundation	Government	5	0,2878880
Project Management Jülich	Academic	7	0,2878880
Kurt Lange Foundation	Advocacy	2	0,2878880
Volkswagen Foundation	Industry	1	0,2878880
Federal Environment Agency	Government	8	0,3642660
Federal Ministry for Economic Affairs and Energy	Government	1	0,2878880

Name*	Type	Sum Line Values**	Closeness Centrality
European Institute for Innovation and Techonolgy	Academic	1	0,2878880
Deutsche Bundesstiftug Umwelt	Government	1	0,2878880
Federal Ministry of Food and Agriculture	Government	1	0,2878880
World Bank	Government	1	0,2878880
Helmholtz Centre for Environmental Research	Academic	2	0,2496370
CESifo	Advocacy	1	0,2644300
Ecologic	Academic	3	0,2644300
Climate Media Factory	Advocacy	1	0,2479040
e-fect consulting	Advocacy	1	0,2479040
Federal Institute for Research on Building	Academic	1	0,2479040
Wuppertal Institute	Academic	5	0,3718550
Mercator Foundation	Industry	1	0,2586820
DIW	Academic	7	0,3305380
Leibnitz Institute of Ecological Urban and Regional Development	Academic	3	0,2833180
Federal Agency for Nature Conservation	Government	1	0,2124890
IÖW	Academic	9	0,3499820
Ecofys	Advocacy	1	0,2379870
Environmental Policy Research Centre	Academic	3	0,2788920

* Actors marked with an asterisk are not part of the main component, closeness centrality measure not applicable

** 'Sum of line values' gives a measure of the overall connectivity of the respective actor

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