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Inherent Dynamics and Chance as Drivers in Environmental Policy?

An Approach to Explaining Environmental Policy Decisions

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beyond “Policy Cycle” and “Multiple Streams”

Content

1. Introduction[1]

An important question in environmental policy research is why (i.e., under what conditions) a certain policy is adopted and not another. Policy analysis[2] in environmental policy research concerns itself especially with this type of question. Particularly with case studies, or comparative case studies, the object of study (i.e., the dependent variable) can be the *coming into being* of a law with a specific content (see Smeddinck/Tils, 2001, for the *Bundesbodenschutzgesetz*, the federal law on soil conservation), or also the *not coming into being* of laws ("non-decisions", as understood by Bachrach/Baratz, 1972; Jacob/Jörgens 2011: 8, one only need think of the failure of the *Umweltgesetzbuch*, the environmental code). The actual *degree of regulation* of environmental policy measures can also be of interest (a possible question would be, for example, why the first EU regulation on vehicle emissions determined a limit of 130 g of CO_2 per kilometre, instead of the 120 g that had been discussed previously).[3] Studies investigating a great number of cases, for example, on the progressiveness of national policy (referring to the classification of states as being "pioneers" or "laggards" when it comes to environmental policy) see the strictness of regulations, among other things, as dependent variable (Lieffererink et al. 2009:678). Since *instruments* play an especially important role in environmental policy, the reasons for the choice of certain instruments is often questioned: Why, for example, the German withdrawal from nuclear energy of the year 2000 was implemented as a combination of voluntary agreement and law, instead of through a limitation of use ordained solely by law (Töller 2012: 106ff.), or why Germany implemented a very particular form of ecological tax reform (Böcher 2012)? Ultimately, what is also interesting is the *variance* of environmental policy in different countries, as well as the variance found over the course of time. The latter is called *policy change*,[4] and its causes are examined; for example, why the voluntary agreement of 1998 was replaced with the European vehicle emissions regulation of 2009, mentioned above (a case of instrumental change), or why there was a surprising accelerated withdrawal from nuclear energy in Germany in 2011. A special variant of policy change is convergence (Holzinger et al. 2010), which is also studied in policy analysis in environmental policy research.

Regardless of whether such studies are conducted with a small number of cases and are set up qualitatively or whether they make use of quantitative methods involving a great number of cases, most of them resort to the theoretical arsenal of comparative public policy and policy analysis (e.g., Blum/Schubert 2011; Nowling 2011; Giessen 2011). However, studies involving a large number of cases and quantitative methods use these theories and approaches rather as *alternative* independent variables (do actors' interests determine results, or do institutions?), whereas qualitative studies with small case numbers observe these factors in the context of *their interaction*, with the help of what is called an analytical framework (e.g., Kiser/Ostrom 1983; Mayntz/Scharpf 1995). Results in environmental policy (and arguably in other fields, too) are seldom the consequence of a single factor only.

This article has two goals. The first is to show that policy analysis can contribute substantially to the clarification of political causalities. It provides a rich store of theory-based answers to dependent-variable-centred

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1 This paper is a preliminary English version of an earlier paper that strongly, but not only draws on German and also European environmental policy (Böcher/Töller 2012). For a final version, more recent and more English literature (and cases) will be integrated.

2 Policy analysis is a subdiscipline of political science that, according to an often-quoted truism of American political scientist Thomas Dye, concerns itself with "what governments do, why they do it, and what difference it makes" (Dye 1977), even if today one would not simply subscribe to this limitation to governmental actions.

3 Perhaps the reader will react quickly by saying that this is the result of the influence of powerful industrial interests –but a more profound analysis would show that that is not completely wrong, but that it is only part of "the truth".

4 Capano and Howlett correctly determined that each policy brings with it a policy change (Capano/Howlett 2009), because every policy, in the sense of a process-driven (further) development of existing political content, deviates to a greater or lesser degree from the previous situation (i.e., with or without a regulation or with another regulation). Whether one asks whether a policy represents a change is ultimately a question of knowledge interests.

questions[5] ("what led to Y?"), with the intent of using these to make predictions about future values for Y, among other things. In addition, it does the same for independent-variable-centred questions ("what does X lead to?"), for example, in a study by Jahn and Walti (2007) on the effects of federalist structures on environmental policy success, or on the question of whether partisan politics have an impact on the content of environmental policy (Seeger 2003; Wurster 2010).

Secondly, this article shows how a particular interpretation, found in policy analysis but spread beyond it, and according to which political processes represent stepwise, rational problem-solving processes orientated toward formal rationality as a priority, is problematic when one tries to explain environmental policy outcomes. For this reason we propose a new theoretical framework[6] for the analysis of processes in environmental policy, namely, the "political process inherent dynamics approach". This framework considers a broader spectrum of relevant factors than do other, comparable, frameworks, in that it assesses actors, problem structures, alternative instruments, institutions and situational aspects, to begin with. What differentiates this approach fundamentally from others is the understanding of political processes that underlies this framework, which we want to characterise as being driven by inherent dynamics.

For this purpose we proceed in our article in such a way so as to first present and contrast two established approaches that represent the extremes in an imaginary continuum of political process analysis, ranging from "policy as a linear problem-solving process" to "policy as a product of chance". In the first step (2.1) we show how the interpretation of political processes as problem-solving processes came to be. This we do by means of the policy cycle model that is prevalent in policy analysis, and that sees policy as the result of a process consisting of several sequential phases. We critique this view, known in the literature as "problem-solving bias", and introduce the (also very popular) multiple streams approach of American political scientist John Kingdon, a process conception that is diametrically opposed to that of the policy cycle, and one in which political measures (policies) are understood as being the result of the random encounter of different currents (2.2).[7]

Subsequently we discuss the plausibility of these different views with the support of concrete examples from environmental policy (3.) and then we present (4.) our alternative approach to environmental policy analysis, based on the previously recognised weaknesses in the two former approaches. Our approach had been outlined already in 2007 rudimentarily (Böcher/Töller 2007); it was recently differentiated further (Böcher/Töller 2012a, 2012b), on the basis of which we, and others, have already conducted research on certain environmental policy processes and issues (Böcher 2012; Töller 2012; examples in Bitterling 2010; Schenner 2010). To finish we put together a short summary (5.).

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5 For a distinction between Y-centred and X-centred research questions, see Ganghof 2005.

6 A theoretical framework is not a theory in the sense of a logically closed structure. Rather it is a heuristic means that directs one's attention to the possible relevance of certain factors (Mayntz/Scharpf 1995: 39).

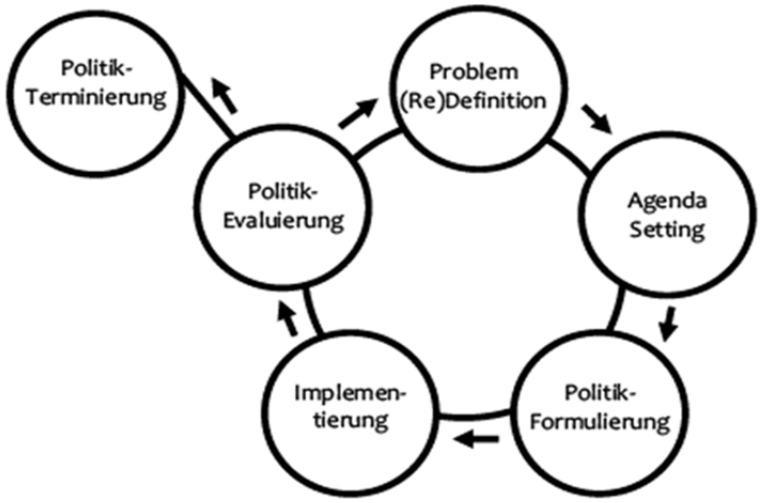
7 Our interest here is not to present different explanatory approaches of policy analysis in detail, or to discuss them in relation to their strengths and weaknesses (we would also have to discuss the advocacy coalition approach or other learning-theory, discourse analysis approaches, or the policy arrangement approach, which would go beyond the scope of this article. Compare Nowlin 2011; Giessen 2011). Rather, we seek to present two completely different concepts within an imaginary "continuum" of policy process analysis. A third concept would be, for example, the new political economy approach. This applies a simple conception of political processes: They are the context in which certain interests are assumed and in which claims can be made as to which stakeholder interests establish themselves in the political process, based on assumptions of plausibility.

2. Environmental policy processes between policy cycle and garbage can

2.1 Politics as a problem-solving process: the policy cycle

The policy cycle model is very prevalent in policy analysis. Ultimately, it can probably be traced back to an initial phase classification by Lasswell (1956), which was followed by many, mostly in the 1970s (Blum/Schubert 2011: 104ff). The policy cycle enumerates a series of phases through which political processes can pass (see Jann/Wegrich 2009: 78ff. in detail), and at the end of which is the political result, that is, the production of a policy.

Figure 1: The policy cycle according to Jann/Wegrich



Source: Jann/Wegrich 2009: 86.

According to this, the individual phases are (Jann/Wegrich 2009: 86):

1. the definition of the problem,
2. setting an agenda,
3. formulating policy,
4. implementation, and
5. evaluation.

Since the model is cyclic, evaluation is usually followed by a new problem definition, and seldom by termination, i.e., the completion of a policy (Figure 1).

The heuristic of the policy cycle is a useful instrument when one needs to structure a political process for analysis. For example, it draws attention to the fact that problems are not simply "there", but that they have to be defined as such (problem definition) and that they have to make it into the political agenda (agenda setting). This is a particularly important realisation for environmental policy, because many environmental problems are dependent on knowledge to a great extent, so that awareness of a problem often can only emerge when there have been environmental damages or when scientific studies become known that show that, for example, a substance or a process is deleterious, or that at least suggest so strongly. In order for a problem that has been recognised by society to make it into the political agenda, it must have advocates. For policy to be adopted, it needs political majorities. Ultimately, the separate consideration of the implementation phase is indicative of a circumstance that appears self-evident today, but that became clear for the first time through the research on implementation in the 70s, particularly for environmental policy: The enactment of "pretty" laws does not necessarily mean that anything will change in the real world, because implementation has many prerequisites. It assumes, basically, that laws can be implemented, that enforcement

authorities are willing and able to function, and that addressees are willing to cooperate (Mayntz et al. 1978; Pressman/Wildavsky 1979).

In this regard the policy cycle is useful because (and this is typical of a heuristic) it is indicative of aspects that might be important. However, it has three serious weaknesses. The first is discussed at length in the literature and does not need to be examined in depth here: The policy cycle comprises an ideal-typical succession of phases that can run an entirely different course during real political processes, and it says little about how the transitions between the individual phases take place. The second weakness has also been discussed: The policy cycle helps to structure processes and to understand them, but it does not *explain* them, i.e., it does not include any theoretical claims or presumptions that would contribute to an understanding of *why* a particular policy has come about in a particular way and not another (Sabatier 1988; Jann/Wegrich 2009: 102f.). For this reason the use of the policy cycle is helpful as a first step in concrete empirical analysis, but it is of little use for matters having to do with a theoretically substantial and explanatory analysis of environmental policy processes and its results.

The third problem is serious: The policy cycle carries with it the *problem-solving bias* (see Jann/Wegrich 2009:75), and has "infected" policy analysis as such, to an extent. One identifies (critically) as a problem-solving bias a perspective regarding political processes in governance theory and policy analysis that does not ask "*whether* political actors are orientated primarily toward the solution of societal problems but rather assumes *that* that is their main objective" (Mayntz 2001: 19). The intention of problem-solving here is to have formal-rational politics, with which present political problems can be solved effectively and efficiently (see Majone 1993). According to this, political actors pursue the goal of finding political solutions that best solve the present problems. This is one of the fundamental assumptions of policy research, though it is varyingly pervasive in different texts.[8]

Several authors have dealt critically with the perception of politics as problem solving. These authors have pointed out that the view of politics as "problem solving" leads to a stylisation of political processes and that it systematically masks such aspects as power, ideology or chance (Mayntz 2001; Trampusch 2004; Greven 2008: 27 and for environmental policy Newig 2010: 303; Töller 2012: 223ff.). According to these authors, with such a misinterpretation of politics as more of a technical problem-solving process, the actual mechanisms of political processes are veiled (Greven 2008). In pointing this out, the critics mentioned above do not question that political actors and bureaucrats can *also* be motivated by an interest in solving problems. The numerous studies on environmental policy by public choice scholars have also determined clearly that there are good reasons to doubt that political actors always have formal rationality in mind. Rather, and in environmental policy, for example, politicians are more concerned with choosing instruments that damage their interests in re-election the least (Schneider/Kirchgässner 2003; Gawel 1995) or that are useful to powerful interest groups (Kollmann/Schneider 2010: 20). Thus, problem solving depends on whether the solutions suit the power schemes of political actors and corporate interest groups. Under certain conditions, in the political process a type of problem solving may prevail that does not solve problems in the most efficient or effective manner, but that better serves powerful actors and their interests. Therefore, a narrow interpretation of political processes as problem-solving processes can lead not only to a distorted perception, but also sometimes to completely wrong results, as will be shown below.

For these reasons the policy cycle appears to us not to suffice to describe, much less explain, actual results in environmental policy, which often depart from any conceivable "first-best" problem solving, and are the consequence of political conflicts of interest and institutional circumstances. In respect of the understanding of the political process, the prevailing opposite position is found in the Multiple Streams Approach (MSA). We present this approach below to then better be able to develop our approach "between the poles".

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[8] This fundamental assumption can already be found in the work of the great-grandfather of policy analysis, Harold Dwight Lasswell, who describes the political processes as a "problem-solving activity" (Lasswell 1968).

2.2 Policy as a product of chance: the Multiple Streams Approach (MSA)

John Kingdon introduced the Multiple Streams Approach (MSA) in 1984 (Kingdon 2003). With this he wanted primarily to explain, for his cases in US health policy and transportation policy, why some (sometimes marginal) *problems* are a subject for discourse whereas others remain unnoticed, and why certain *measures* (policies) are selected and others are not (Kingdon 2003: 5ff.). Kingdon consciously restricted himself to the phases of agenda setting and of political decision-making (Zahariadis 2007: 65).[9] Kingdon's approach (1984; 2003) goes back to the "Garbage Can Model" by Cohen, March and Olsen (1972) and sees systems of government primarily as organised anarchies that can only be inadequately described through formal rules and organisations. Within these systems of government there are three streams that move relatively independently from each other: the *problem* stream, the *policy* stream and the *politics* stream (Kingdon 2003: 16ff.).

Kingdon describes the *problems* stream as the competitive juxtaposition of an entire array of problems that, in principle, *could* all make it to the agenda. From the MSA's perspective, the emergence of a particular problem on the political agenda is possible particularly through specific indicators, where numbers like unemployment figures or polling results translate complex matters into simple messages (Kingdon 2003: 90ff.) through "focusing events", like crises (e.g., a natural disaster) that steer public attention to a particular problem (Kingdon 2003: 95ff.), or through a (negative) evaluation of earlier political decisions – "feedback" (Kingdon 2003: 100ff.). Kingdon refers to the policy stream also as "policy primeval soup" (Kingdon 2003: 116ff.), in which numerous conceivable solutions to different problems "float", as do some that are completely independent from concrete problems (Kingdon 2003: 88), produced industriously by specialised politicians, experts, think tanks and bureaucrats. Invariably, one can envisage very different policies for this reason. However, a policy must be normatively acceptable and technically feasible in order to be fed into the policy-formulating process, and it must be ensured that the proposal can be implemented without too great a resistance. The third stream is the *politics* stream, which comprises especially public opinion ("national mood"), the power of corporate organisations, political majorities and political ideologies (Kingdon 2003: 145ff.).

According to this approach, policy change happens when, simultaneously, a particular policy problem makes it into the agenda, there are changes in the politics stream (due, for instance, to elections, changes in public mood, or pressure exerted by powerful organised interest groups) and there is an appropriate policy at hand (Kingdon 2003: 165). Policy entrepreneurs as important key players take on the task of linking problems that are the object of discourse to particular policies (Kingdon 2003: 20), and in doing so also have the opportunity to "[...] push their pet solutions, or to push attention to their special problems" (Kingdon 2003: 165). Under these conditions and in this "critical moment in time" (Zahariadis 2007: 73), a "policy window" for change would open, in Kingdon's view.

In this onset of political processes, chance and momentum play an important role. Kingdon's merit is that, with his MSA, he makes clear that politics does not amount to a rational process involving stepwise, formal-rational problem solving based on phases elapsing with regularity, but rather, that it sometimes corresponds to a chaotic coupling of problems and solutions. Kingdon's case studies "[...] don't have the flavor of a rational, comprehensive approach to problem solving. Often the participants are not solving problems at all." (Kingdon 2003: 78). With such a view of political processes "the state and government are demystified as (alleged) bearers of public welfare, [...] (and) as actors taking action unitarily" and they are seen as conflicting units (Rüb 2009: 350, translated by the authors).

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[9] Since Kingdon himself had no ambitions about elaborating the approach further after the volume of 1984, which appeared in several editions (2003, among others), Zahariadis and others developed the MSA further (Zahariadis 2007; Rüb 2009).

The approach is used in environmental policy research in different ways to explain policy change. E.g. Brunner works with the approach to explain "the sudden move from overgenerous grandfathering to tight caps and auctioning within the German emission trading regime in the first half of 2007" (Brunner 2008: 501). The withdrawal from nuclear energy of 2011 can also be explained well with the MSA: Due to the Fukushima disaster, as a "focusing event", nuclear energy entered the political agenda as a serious problem ("problem stream"), after it had just been reinterpreted as a solution to the climate problem. The upcoming Länder elections and the mood critical of nuclear power among the public ("politics stream") led to the opening of a "policy window", and withdrawal from nuclear power was again taken up as a solution ("policy stream") – and that by a government that took office with the goal of decelerating said withdrawal.

However, the MSA has also been criticised in different respects. First, it is considered debatable whether this approach, expressly developed for the USA, can be applied to the European government systems (which are generally parliamentary) at all (Zahariadis 2007). Second, the assumptions are very general in all and hardly allow the derivation of hypotheses that can be tested empirically (Nowlin 2011: 46). Third, it is seen as doubtful that the three streams are indeed independent from one another (Nowlin 2011: 45). Fourth, another point that has been criticised extensively is that, in this approach, institutions do not play a relevant role (Rüb 2009: 367; Nowlin 2011: 45, among others), and that interests and power, as central categories in political science, are underestimated in their significance (Brunner 2008: 506), which is problematic for a comprehensive explanation of environmental policy processes.

3. Political processes in environmental policy

We share the criticism of the MSA, particularly in respect of the notion that it is difficult to test empirically and that it ignores the role of institutions as important factors in explaining the course of political processes. Nevertheless, it includes aspects that we consider important and that help explain results in environmental policy: These are often dependent on chance and on the presence of certain policy windows (see, for example, Garrelts et al. 2005), and certainly not the result of rational problem solving developed in organised sequential phases. Particularly in environmental policy, there are many examples with which one can show that an interpretation of political processes as pure problem-solving processes leads to incorrect outcomes (see, for example, also von Prittwitz 2011: 117). In spite of the critical objections, the MSA perspective can help to better understand and explain the environmental policy process, with its uncertainties, inconsistencies, and its outcomes that are not based on formal rationality.

An interesting example is the discussion on environmental policy instruments, which is often dominated by the idea (based on layman's theories) that politicians, orientated toward the common good, would select the instrument, in the sense of choosing a tool, which is best suited for a defined problem (for example, Bagchus 1998) – a view that has also been called "tool box philosophy" (Böcher/Töller 2007). Such a view causes, for example, economists to ask why market-based instruments where hardly used for a long time, even though they are (presumably) the most effective and efficient instruments available (Hahn 1999). What is left out here, for example, is that such instruments make costs transparent to different degrees, which can lead to strong conflicts in political processes, and this in turn can impede the approval of such policies. Along with economic efficiency and environmental-policy effectiveness, compatibility with the rationality of political processes plays a decisive role as an important criterion for the political adoption of instruments. Moreover, the ideological dimension of instruments is usually not considered. Policy instruments are by no means purely technical means to reach political goals, but rather are in themselves and in their underlying ideological concepts indeed political (Majone 1976: 589; 1989: 116; Linder/Peters 1998: 45). Any forms of action almost always include a normative conception of governing, for instance in respect of the question of what the state is, what it does and how it should do it (Lascoumes/Le Gales 2007). Immergut indicated recently that actors who choose particular instruments also choose the worldview behind them, e.g., certain democratic models (Immergut 2011: 70ff.). Therefore, in addition to environmental protection (or any other obvious goal), partisan actors have very different preferences for political instruments that deliver a normative con-

cept of how the world should be (for instance, strongly interventionist with regard to regulations or orientated toward voluntary approaches and a market economy, Töller 2012: 294ff.).

In this way, for example, starting in 1994 the use of environmental agreements in Germany, which had been until then rather pragmatic and problem-orientated, began to show a huge intensification of its inherent dynamics, in the context of the debate around Germany as a business location (“Standort Deutschland”). In a deregulatory political climate, agreements became ends in themselves, and were used for all possible and impossible problems (Töller 2012: 294ff.; Majone 1989: 117). This is a good example of the explanatory power of the Multiple Streams Approach in environmental policy, since what we have here is to do with *policies* that lead a "life of their own" and that are favoured, relatively independently from the *problems*, but promoted via *politics*, for example, a climate of deregulation and corresponding political majorities (see Boscarino 2009). This is little to do with what instrument is the most appropriate for the solution to a problem from a purely rational perspective, but rather what instrument better corresponds to the present conjuncture of political rationalities.

Indeed, one clearly does make progress with a view on political processes that does not see politics as a rational problem-solving process, as shown, but there is another problem that the MSA, specifically, cannot solve: Most (environmental) policy analyses neglect the independent significance of institutions (meaning the rules that frame the political process). This criticism has existed, for example, in the public choice analysis of environmental policy, for a long time (see the example of the early volumes by Gawel 1996, and Bizer et al. 2000). However, the process of an adequate integration of institutional framework conditions, as an important factor to help explain environmental policy outcomes, is far from complete. The explanatory approaches of significance in political science, like the MSA or the Advocacy Coalition Approach by Sabatier (Sabatier 1988), and others, are not useful references, at least not here.

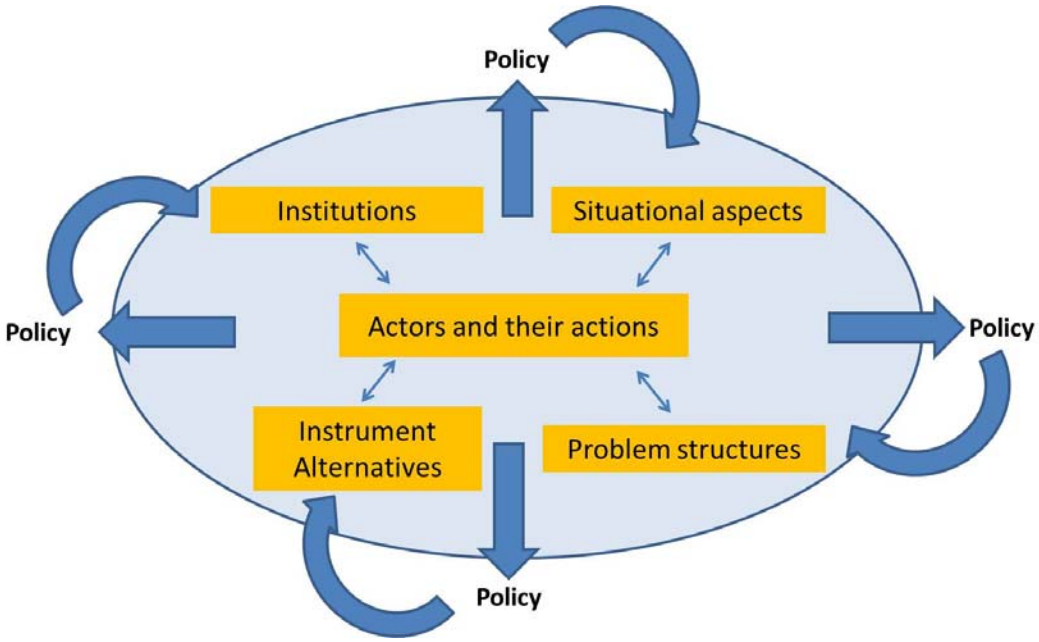
Two examples should show why institutions should be taken more seriously as explanations for environmental policy outcomes. In a comparative observation of the use of cooperative instruments in Germany and the USA, for example, one can show that in both cases institutions have an important role to play in the explanation as to *why* state actors become involved with cooperative forms of regulation, however, in each case *different* institutions play a role. In the case of Germany it was mostly European law and (to a limited degree) the role of the *Bundeskartellamt* (Federal Cartel Office), whereas in the USA it was mostly the legally guaranteed participation rights and rights of action of the environmental associations that motivated the American Environmental Protection Agency (EPA), to try out cooperative instruments in environmental policy, because this way one can regulate one's way "around" the environmental associations (Töller 2008). In the debate around the *Ökosteuer* (ecological tax), for a long time in the 90s there was a call for the introduction of a tax directly-related to CO_2-emissions. Later there was criticism stating that the actual ecological tax reform that came into form in 1999 had not much to do with economic text book ideals . However, the German fiscal constitution has clear stipulations for new taxes, and there were a series of expert opinions at the time that assumed that a proper CO_2 tax would not conform to German constitutional law (Böcher 2012). (a coalition between the Social Democrats and the Green Party) Again, this would involve formal rationality only marginally, and would be more to do with political decision making under an institutional framework, the effects of which are often uncertain.

Therefore, we see first that one can explain many things better with the process conception suggested by the MSA than with the policy cycle, on the one hand. On the other hand, however, the MSA is incapable of accounting for the considerable influence of institutions appropriately.

4. The political process inherent dynamics approach (PIDA) to explaining environmental policy

Below, we present a new analytical framework to explain policy processes, the “political process inherent dynamics approach" (PIDA) (in German the *Ansatz eigendynamischer politischer Prozesse, AEP*), which we have already outlined elsewhere to explain instrument choice and change in environmental policy (Böcher/Töller 2007) and which we have recently developed further to explain environmental policy in general (Böcher/Töller 2012: 189ff.). The approach originates from early considerations on institutional theory by Larry Kiser and Elinor Ostrom (1983), and it conceives of the interaction between the actions of political actors and the influence institutions have on it as a central explanatory factor. Other factors employed for the analysis of environmental policy include problem structures, the spectrum of alternative measures and situational aspects (see Figure 2) as additional explanatory factors. Up to that point, this approach does not differ greatly from other approaches that combine actors and institutions, like for example, actor-centred institutionalism (Mayntz/Scharpf 1995). The substantial difference is that an *understanding of political processes* underlies the approach, that, as does the MSA, assumes that the inherent process dynamics and chance are important driving forces for environmental policy. Figure 2 illustrates the central assumptions of PIDA. At the centre of the political process are actors and their activities. These are influenced by institutional framework conditions ("institutions" in Figure 2), available (instrumental) alternatives ("alternatives", in Figure 2), the concrete problem structures underlying political problems, and situational aspects. However, the interaction of the different factors develops in the environmental policy process unpredictable dynamics, at the end of which policies are generated, the effect of which can again have a feedback effect on the environmental policy process. The illustration indicates this graphically through several policies that may be possible, depending on the constellation of explanatory factors and their influence on the actions of political actors.

Figure 2: The political process inherent dynamics approach (PIDA) as an analytical framework for the explanation of environmental policy



Source: Böcher/Töller 2012: 190.

Our approach follows an empirical-analytical scientific understanding (Krott 2012). With it, environmental policy processes should be analysed without the frequently found (often implicit) normative list, by making causal mechanisms in environmental policy transparent and empirical analysis accessible. The analysis should yield indications as to how environmental policy processes run their course, what factors explain the

process and *why* specific environmental policies come about. These explanatory factors, *actors and their actions*, *institutions*, *problem structures*, *(instrument) alternatives* and *situational aspects* have an effect on the political process and therefore influence the outcomes of environmental policy (see Böcher/Töller 2012 for details). It should be noted that the individual explanatory factors

1. are subject to their own, inherent process dynamics individually and
2. influence one another (through the shared link of actors and their actions).

The PIDA comprises the following explanatory factors, which we describe in more detail below before we explain what we mean by "inherent dynamics". Empirical examples substantiate the relevance of the considerations to one of the factors in each case.

4.1 Actors and their actions

At its core, our approach is based on *action theory*: Environmental policy is the result of what actors do. Here, actors can be individual, collective or corporative. According to Max Weber, what actors do can, in principle, be directed by their interests, following instrumental rationality ("zweckrational") (in terms of the acquisition and preservation of power, and they can also be guided by cognitive and normative convictions, in a "substantial rationality" (wertrational) fashion (Böcher/Töller 2012: 78ff.). Whether actions are led to a greater degree by instrumental rationality or value rationality in each individual case depends on the political problem structure, among other things. If the problem structure, understood as a societal distribution of costs and benefits resulting from a policy, incorporates a sheer re-distribution struggle in which certain groups are given advantages at the expense of others (zero-sum game), it stands to reason that instrumental-rational action will be particularly dominant (Braun 1999; Böcher 2007). If, on the other hand, the situation is one where there is a discussion of political alternatives in which the distribution of costs and benefits is not yet completely clear, value-rational aspects can also be relevant to the actions of political actors (Braun 1999; Böcher 2012).

Whether and how actors act in policy processes depends on the presence and structure of politically-defined problems, the conjuncture of public discourses on alternative political measures, the availability of appropriate instruments, and also on political logics. For instance, this can refer to a minister's need to boost their image before the upcoming elections by means of an environmental policy initiative, the interest of a representative in showing off as a political expert, or the interest of the Federal Environment Agency (*Umweltbundesamt*, UBA) in securing its own resources by taking a position on a certain environmental issue publicly or even by supporting a position that diverges from that of the Federal Ministry for the Environment (*Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit*, BMUB) (see also Smeddinck/Tils 2001: 310ff.). Our fundamental assumption outlined above, which distinguishes our approach from others, comes into play here: (Environmental) political processes are not mere problem-solving processes (or they are, but only in the rarest of cases). This means that political processes are not driven solely by the fact that a political problem has been defined clearly and a solution to it that is capable of achieving majority support is being sought. Smeddinck and Tils write the following in their study on the role of ministerial bureaucracy in the materialisation of the Federal Soil Protection Act (*Bundes-Bodenschutzgesetz*):

> "The stimulus-response scheme upheld in early policy analysis, according to which first "objective" problems appear to which then the political sector reacts with programmes, and enforces them, possibly against a resistance, does not have much in common anymore with the factual procedures of political lawmaking processes." (Smeddinck/Tils 2001: 305, translation by the authors)[10]

[10] In our estimation this is not a new development in the sense of a sign of a decline of politics, but is rather rooted in the nature of politics.

The inherent dynamics of *actors and actors' actions* in environmental policy can be demonstrated more precisely by means of the classic differentiation between political actors and administrative actors. If one can impute to the actors in the ministerial administration an orientation toward problem adequacy as most likely (Smeddinck/Tils 2001: 313), they could also be concerned with the realisation of a specific specialist discipline's view of things or with the preservation of institutional resources. In the case of political actors, the electorate's acceptance of themes and measures is sure to play an important role (Smeddinck/Tils 2001: 313), but also as important are the realisation of one's own ideologies, the maximisation of votes or resources, winning over important stakeholders, distinguishing oneself, asserting oneself against other actors, showing a capacity to act, forming alliances, carrying out barter deals, etc. (von Prittwitz 2011: 114). Basically, problem solving is only one of many motives that actors pursue, without it necessarily meaning that one must accuse them of "fraud against the public, motivated by power politics" (Newig 2010: 302, translation by the authors).

An example of a measure that was passed mostly without problems and which served primarily the image enhancement of political actors is the case of the German PCP ban of 1987: This substance was used in the early 80s in wood preservatives, but had been long suspected to cause serious health damage. In 1985, PCP production in Germany would already stop, based on a voluntary agreement adopted in 1984. Still, the first Minister for the Environment, Walter Wallman, pursued a prohibition ordinance in 1986 that was later adopted by his successor, Klaus Töpfer, as the opposition criticised the slow implementation of the Chemicals Act against the background of the Sandoz accident of 1986. By that time, the problem with PCP had already been taken care of, for the most part (at least at the regulatory level); the measure served mostly as a show of the capacity for action (Töller 2012: 104f.).

4.2 Institutions

What actors do is shaped or influenced by institutions. Institutional rules can be make said actions formally possible. However, they can also block actions, create stipulations for actions allowed and unallowed that are at least clear, and provoke evasion strategies (see Böcher/Töller 2012: 124 ff.). More often than not, institutions contribute more to continuity than to change in environmental policy.

Institutions, as factors of influence in the political process, also behave with inherent dynamics as we describe here: They give rise not only to linear adaptive reactions, in the sense of a solution to a problem. This shortened perspective was used often, for example, in the early research on Europeanisation, as if the implementation of (environmental) directives in the member states had been to do merely with "compliance". In fact, the implementation of directives in member states is often to do with, for example, keeping adjustment costs low, "saving" one's own regulatory approach or adding something that would be unfeasible in the national framework without the directive. Institutions have, however, yet another peculiarity: Their possible effects, or "risks", to put it plainly, for particular projects are often unclear. What effect constitutional institutions, e.g., the property guarantee in the German Constitution or the internal market norm in the EU Treaty, *actually have*, is something that is usually known only after court decisions; before this there is legal uncertainty as a condition for political action (Schmidt 2008; Töller 2012a: 263ff.). This means that, in spite of the existence of institutional framework conditions "beyond one day", their effect can be subject to inherent dynamics that are often unpredictable. It is for this reason that they sometimes provoke evasive reactions (Töller 2012: 268).

In this way, in the year 2000 the red-green federal government (a coalition between the Social Democrats and the Green Party) implemented the nuclear energy withdrawal through consensus instead of hierarchical intervention mostly because it wanted to avoid the risk, resulting from the institution of the property guarantee of the German Basic Law (Article 14), of a claim for compensation by the energy corporations (this affair was hotly debated among the legal experts who had been called upon for their opinion, see di Fabio 1999; Denninger 2000; Koch 2000). For this reason the negotiation was an institutionally-generated attempt at risk-

minimisation on the side of state actors, which, of course, had an effect on the content (particularly the agreed residual term of operation), since a negotiated solution must be agreed upon by both parties.

In the same way, and particularly in the 80s and early 90s, the federal government decided to use "soft" co-operative solutions for the withdrawal of the use and production of asbestos, PCP, and CFCs, and also for the regulation of battery disposal, in consideration of the risk of violating the rules of the European internal market (Töller 2012). This risk was real but unclear for individual cases, and this was at a time when the EC was not yet capable of adopting its own product regulations. A similar mechanism can also be observed at an international level: Given the real but ultimately unclear risk that national importation restrictions could violate the WTO's free trade regime and would therefore fail in a court of arbitration, and the risk of a failure of a global forest convention at the UN level, in the early 90s different forces (environmental organisations, private enterprises, and nation states) pushed through the creation of voluntary certification schemes, e.g., the Forest Stewarship Council (Bartley 2003: 447f.). Institutions, then, have inner dynamics that have an effect on political processes and that do not mainly, or only, aim to find solutions to ecological problems.

4.3 Instrument alternatives

Political instruments serve to influence social actors and to reach political goals (Böcher/Töller 2012: 74). The discussion surrounding the "right" instruments pervades environmental policy from the beginning: In particular, questions regarding efficacy and efficiency, in view of the dominance of regulatory instruments, have been raised here since the 1970s. These questions regarding the formal rationality and technical properties of environmental policy instruments, raised mostly by economists, again reflect the problem-solving bias, however. But aspects that are to do with political feasibility are just as important. Theoretically superior instrument alternatives are often practically unavailable, because of institutional framework conditions, e.g., legal requirements, or dominant interests, and therefore do not represent an option for political actors. It often happens then, that the "second best" instrument alternatives prevail, the ones that at a given point in time are available and feasible, and not the most effective or efficient.

The available instrument alternatives behave in a way that corresponds to inherent dynamics and that is often independent from the problems defined politically. Especially in environmental policy, certain instruments are strongly favoured by some and rejected by others. Indeed, the spectrum of possible measures as a whole has become significantly broader in the last 40 years since the establishment of environmental policy, not least through the implementation of instruments that for a long time could only be found in economics textbooks (Böcher/Töller 2007: 312f.), and also through the systematic evaluation of instruments that also allowed learning within countries and beyond borders. Among others, the EU and the OECD played an important role in this. However, instruments have to pass through two "filters" to be actually chosen, an institutional filter and an ideological one. The institutional filter was already mentioned: There are barriers for certain instruments and measures (and not only in Germany), like, for example, constitutional barriers for particular duties or for measures that interfere with the property (or other fundamental rights) of third parties. European law also excludes certain measures at the national level, because these are interpreted as being barriers to trade or as a distortion of competition, or because they are not sufficiently watertight legally for the implementation of directives (Töller 2012: 256ff.).

Among the institutional filters one can also include the path dependency argument. Particularly where there is already a refined policy in place, serious changes in course are associated with significant costs for the addressees and with the political risks of failure and loss of credibility for the political actors (one might think of the recent discussions around the renewable energy law in Germany). The ideological filter refers to the compatibility of instruments with particular ideologies (or, to put it more softly, discourses). Earlier we had already mentioned that instruments always have a symbolic dimension. Thus, environmental organisations and the Green Party rejected economic instruments for a long time, because these do not prohibit (and condemn) environmentally damaging behaviour but rather turn it into the object of business calculation. For

a long time these actors overlooked that precisely this fact makes these instruments particularly accurate (at least ideally).

An example of the institutional filter (path dependency) is waste policy, which in Germany is emotionally charged to a high degree, and in which gaining credibility for new arguments (and new instruments) proved to be especially difficult. Here, beliefs reflecting the level of scientific knowledge in the 90s have strengthened considerably, to the point where they have become "imbedded" in the policy regulations. Examples of this are the idea that recycling is always ecologically superior to thermal utilisation (incineration), or the notion that returnable packaging is always preferable to disposable packaging, from an ecological perspective. Consequently, new findings, for example, that some disposable packaging can be less ecologically damaging than reusable packaging, when all ecological cost is considered, or that when waste has a high calorific content thermal utilisation can be as sensible as recycling, can only be translated into measures with difficulty. This is difficult to explain from a problem-solving perspective. In the discussions concerning the trade of emissions certificates, the importance of the ideological filter becomes clear: Many see emissions trading as a neoliberal instrument and as a "sale of indulgences" (Altvater/Brunnengräber 2008), because with it companies purchase emissions allowances, and so could "buy themselves free" from their sins. Similarly, liberals prefer voluntary instruments, because these are accompanied by relatively little state intervention.

This ideological dimension (i.e. the dominant ideology) changes greatly over time, however. In this way, in the mid-90s the deregulation discourse influenced German environmental policy relatively strongly and was more likely to promote "soft" environmental policy instruments, whereas the "hard" instruments were filtered out. At present the discourse appears to be changing, possibly as a result of the financial and economic crisis. However, whether this will be reflected in an increasing acceptance of more strongly interventionist policy is uncertain.

4.4 Problem structures

The course of political processes and their outcomes depend on the problems to be solved and their structures. The problem structure means, for example, how visible and unequivocal a problem is, what significance it has for the economy, what number, variety and social significance the originators of the problem evince, whether it is even possible to make out certain actors clearly to be the originators, what the information situation appears to be, or what solution approaches are available (Smeddinck/Tils 2001: 311). Environmental policy is to do with a public good that has a special problem structure due to its long-term character and high uncertainty in relation to expectable effects (Böcher/Töller 2012: 90). Furthermore, environmental policy has a pronounced cross-sectional character, and some questions regarding environmental policy are known as "persistent problems", which are difficult to get a grip on (Jänicke/Volkery 2001).

Ultimately, the situation becomes complicated because political processes are often not characterised by an undisputed and clear problem. In addition, even what the problem is (and the solution), can also be contentious. In many political processes, different actors with different problems also pursue different objectives, so that the result is a mosaic of different and thoroughly conflicting bundles of problems and goal options. Some actors even follow a hidden agenda, i.e., goals, which possibly cannot be openly supported, even as referring to aspects concerning public welfare.

The inherent dynamics of problems in environmental policy can be grasped well by referring to Kingdon's considerations, outlined above. Not only the significance of an ecological situation determines whether something is defined as an environmental policy problem (sometimes the opposite appears to be true). The most important grounds upon which environmental policy problems are defined as such are, firstly, accidents and environmental catastrophes, which usually reveal to a broader public already-existing risks and hazardous situations already known to a specialized public, contributing significantly in this way to the definition of problems (Kingdon 2003; von Prittwitz 1990). The most prominent examples to date are the Chernobyl reac-

tor accident, which contributed massively to a perception of nuclear energy as a problem (and not as a solution, like before), and the nuclear catastrophe in Fukushima. The latter did not really reveal new knowledge about the fundamental hazard assessment, but it led to a new assessment of pre-existing knowledge.[11] The other grounds are scientific knowledge that makes public the existence of many environmental problems (for example, health risks due to asbestos and PCP, the ozone depletion due to CFCs, the perniciousness of CO_2 emissions and fine particulate problems), bringing them into the political agenda. However, actors must take up accidents and catastrophes as well as scientific findings and actively make these a subject of discussion. In addition, problems must be suitable for political saliency. The more complex the problem structure and the greater the concern of manifest corporative interests are, "[...] the less are political agents inclined to take up these issues altogether. Thus, structured issues are difficult to communicate to the public and they hamper the transmission of clear messages about one's own organisational goals." (Smeddinck/Tils (2001: 311). Moreover, problems are not defined independently of whether there exists a solution to them, since problems without solutions (or without simple solutions) cannot be conveyed well politically (Majone 1989: 117; Kingdon 2003: 174; von Prittwitz 2011: 114).

A good example are the persistent environmental problems (Jänicke/Volkery 2001), i.e., the problems that are not raised as subjects for discussion because in their case the conventional, technology-orientated means of the sector do not take hold. Problems that require extensive changes in lifestyle are subjects not likely to be broached either (one need only think of the different food product scandals). Of interest in this context is German climate policy, which relies on an approach based strongly on technology and innovation, whilst questions regarding sufficiency (Loske 2011) or the necessity of alternative lifestyles play a completely subordinate role. Soil conservation is also a persistent environmental problem that, due to its problem structure having diffuse user and protector structures and ecological complexity, can only be treated politically with great difficulty (Zieschank 1999).

The discussion around power-heat coupling at the beginning of the first decade of this century was mostly to do with the reduction of CO_2 emissions by means of increased energy efficiency (Töller 2012: 188ff). In fact, however, the political groups within the coalition pursued other objectives completely. The SPD sought to "rescue" the municipality-owned utilities, and the jobs there, which had fallen into hardship due to the internal market for electricity, by supporting the power-heat coupling. In contrast, the Greens pursued a regulatory goal in energy policy: In the expansion and modernisation of power-heat coupling according to ecological efficiency criteria they saw a possibility to counteract the oligopoly-like market structures of energy supply by promoting a decentralised supply based on smaller plants. In such constellations of different problems and solution proposals, in which sometimes there is not even a consensus about what is the problem and what the solution, one cannot count with the choice of a measure that is particularly well-suited for a problem (as assumes the problem-solving perspective). It is much more likely that one would select a measure that places all problems and associated goals "under one roof". This is what happened in the case of the power-heat coupling: Instead of choosing a quota or certificate system, which would have probably been better for climate protection, a voluntary agreement was chosen, because this way all goals were followed a little, but also none too much – an outcome that cannot be explained from the problem-solving perspective.

Furthermore, the definition of problems and corresponding solutions does not take place linearly, but rather in a manner that involves a high degree of contradiction and inherent dynamics. Thus, actors assimilate scientific findings only when they hope to benefit from this in the political process. Moreover, there are often several solutions that can be supported scientifically and that, paradoxically, can lead not to a greater and more secure knowledge fundament, but rather to greater insecurity for political actors. What is more, former solutions can become new problems, which can even become new solutions again. The example of nuclear

[11] In the literature on the policy-changing effects of crises it is assumed that crises lead to a public discourse on the subject. However, a policy change resulting from such crises, as was the case with the German withdrawal of nuclear power after Fukushima, is considered to be extremely unlikely by crisis experts (e.g., t'Hart/Boin 2001; Boin et al. 2009).

energy makes this clear once again: Whereas nuclear energy had once been seen as a technology with which to secure the energy supply (as a solution, that is), after Chernobyl nuclear energy was discussed increasingly as a problem. In times of climate change nuclear energy was again talked about more as a solution, at least to serve as an energy source without CO_2 emissions, to be used in a transitional period before the change to renewable forms of energy. After Fukushima, nuclear energy was perceived again more as a problem – with corresponding (definitely surprising) political consequences. These examples illustrate clearly how political problems and their evaluation change in the eyes of political actors: There is no trace of formal-rational political problem solving.

4.5 Situational aspects

Situational aspects can open options for certain environmental policies, or they can also reduce them. They are often events that cannot be projected, like environmental disasters (Chernobyl, Fukushima), "scandals" debated publicly (like the BSE-scandal) or political upheaval (changes of government, German unification). In such situations, the political goals of a government can change, the power relations between actors can shift, and space for policy change can emerge in this way. In fact, political windows of opportunity are more likely to open in unpredictable ways if there is a confluence of a problem that is considered to be urgent, a measure that has slipped through institutional and ideological filters and actors who expect something from this problem and this measure (this can be, but is not necessarily, problem solving).

4.6 Working with PIDA

As mentioned at the beginning, PIDA is not a theory, but an approach that nonetheless is based on an array of theoretical assumptions (for example –as described– about the roles of actors, institutions and other factors, as well as about their causal mechanisms and the logic of the political process). For empirical application this means that this approach first draws attention to specific aspects that could play a role in explaining a particular policy (see Mayntz/Scharpf 1995: 39) and yields information for the interpretation of data in doing so. It is therefore especially applicable to qualitative research by means of empirical case studies and comparative case studies. Here it can be (and needs to be) meaningfully linked to certain theories, as long as their basic assumptions match those of PIDA,[12] for example, partisan politics theory (Schmidt/Ostheim 2007; Böcher/Töller 2012: 116ff.), or variations on sociological institutionalism as a possible distinction between assumptions regarding institutional theories (e.g., diMaggio/Powe 1983; Böcher/Töller 2012: 155ff.). A case study guided by PIDA in this way would investigate, according to the presentation of the dependent variable in the analysis of the relevant political processes, what actors play a role, and how their interests and convictions, influenced by institutional framework conditions, influence the political process (and with this its results).[13] This would also consider how, for example, the problem structure has affected the conflicts in the political process, the significance that the ideologically and institutionally acceptable instrument spectrum present until then had, etc. In this, it makes a difference for the empirical analysis whether one understands the political process as a formal-rational problem-solving process, or as a chaotic process possibly driven by chance events and inherent dynamics within the individual explanatory factors, among other things.

Basically, three sorts of research design/methods are feasible in such an empirical application of PIDA.

First: In dependent-variable centred studies ("what leads to Y?"), individual policies or a complex policy change can be explained based on the interplay between different factors (which can also change in time).

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[12] Theories marked by strictly system-theoretical or rational-choice characteristics, for example, would be difficult to link.

[13] Similarly, in the volume by Mayntz and Scharpf mentioned above, one can find a whole series of case studies that use actor-centred institutionalism to analyse very different policies.

For example, Töller's study explains both the increasing use of environmental agreements in the 80s as well as their drastic reduction at the end of the 90s (on the basis of 13 case studies) particularly from the interplay between actors and institutions. It becomes clear here that certain factors (like European law) had an effect in specific ways at identifiable times. In this case the causal mechanism of evasion, for example, can only be identified if one assumes the inherent dynamics of, for instance, institutions and actors who have not only ecological solutions in mind (Töller 2012: 267ff.). It is precisely in studies laid out this way that the PIDA, with its five explanatory factors, allows a reduction in the complexity of political reality to a reasonable level, without masking out any important aspects.

Second: In independent-variable centred studies ("what does X lead to?"), one can examine the effect of single causal factors (e.g., changes in institutional framework conditions) on policies. In the analysis, for example, of the effects of environmental policy changes in the German Basic Law through the first reform of the German federal system (*Föderalismusreform I*), the competence of Länder to deviate from federal legislation (*Abweichungskompetenz der Länder*), it would make a difference if one starts from a premise that assumes linear adaptive reactions in the case of the effect of institutions, or if one also considers reactions with inherent dynamics. The latter assumption would enable one better to understand it if, possibly, the states made no use of the competence to deviate in itself, but rather used it as a means to exert pressure in order to acquire influence over federal legislation (Lübbe-Wolff 2009: 53), which is what the reform was meant to stem. A comparative analysis of the effect of problem structures would also be conceivable, perhaps in soil conservation or air pollution control policy, in order to identify the influence of this factor on political outcomes.

Third, the PIDA also allows the generation of hypotheses for systematic verification, for example, by means of a qualitative comparative analysis (QCA) for medium sized-N data sets.[14] In this way, problem-solving centred hypotheses can be formulated and verified as an alternative to hypotheses that assume a less problem-solving orientated process conception and would therefore arrive at other causalities.[15]

In principle, one can also derive forecasts from the outlined analyses: If certain forms of policy change are identified as the result of particular interactions with inherent dynamics, say actors and institutions, one can indeed predict – perhaps in view of recently occurring changes – that it is very likely that certain policy changes will no longer occur in this context (e.g., Töller 2012: 429). It is also possible to identify the same mechanisms in other contexts, and to make propositions about under what conditions this type of policy change could take place elsewhere (e.g., Töller 2012: 435). Inherent dynamics make causal relations more contingent, and therefore predictions more difficult, but they do not make them impossible.

5. Summary

The starting point of this article was, first, the assumption that the view of environmental policy in policy analysis can contribute importantly to an explanation of the causes underlying environmental policies, particular laws, levels of regulation, non-decisions, the use of instruments or changes in environmental policy. In order to do this, policy analysis must overcome the problem-solving bias – that was our second argument – that sees political processes mainly (and incorrectly) as problem-solving processes. To make our argument more clear we presented two popular assumptions in policy analysis that are characterised by diametrically opposing conceptions of the political process: The policy cycle sees processes at the end of which there is a political measure, a policy, as problem-solving processes that run their course in phases, whereas the multi-

[14] The QCA (Qualitative Comparative Analysis) is a qualitative method that can determine necessary and sufficient variables through the application of Boolean algebra with medium-sized N (Ragin 1987).

[15] There are no examples of application from environmental policy research here yet, but for the area of privatisation research see Stoiber/Töller 2012.

ple streams approach (MSA) sees political processes as "organised chaos" in which it is not uncommon to find solutions looking for suitable problems. In doing this it became clear that we consider the process conception of the MSA as being more commensurate with reality than that of the policy cycle; however, we could not ignore important points for criticism of the MSA (above all, its disregard for institutions).

As a conceptual alternative – and with the aspiration of its use in empirical environmental policy research – we therefore introduced our *political process inherent dynamics approach* (PIDA, AEP, for the German *Ansatz eigendinamischer politischer Prozesse*). It considers policies to be phenomena that depend on the interplay of actors participating in environmental policy processes and their actions, where these, in turn, are under the influence of institutions, problem structures, available (instrument) alternatives and situational aspects. An important difference when compared to other, equally applicable, analytical approaches (e.g., actor-centred institutionalism) is that it considers a broader spectrum of aspects that are mostly relevant for environmental policy (like problem structure and instrument spectrum), and also that our process conception – strongly influenced by the MSA – is characterised rather by developments that are the outcome of chance and inherent dynamics than (mainly) by formal-rational, public-good orientated problem-solving. Of course, this does not mean that we consider political processes to be chaotic throughout, and that we would rule out formal-rational, public-good orientated problem solving as a behavioural alternative. However, we are convinced that, especially for environmental policy processes, one can analyse these more accurately when one sees formal-rational, public-good orientated problem solving only as a behavioural alternative and the political process as something that is not a linear problem-solving process that takes place in organised phases (since that is seldom the case). Nevertheless, these are not signs of *political irrationality*, but rather are due to the significance of inherent dynamics, and in that measure they are an expression of *political rationality*.

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