Explaining Policy Action:
A Deductive but Realistic Theory

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1 Introduction

The study of policy implementation seems to some observers to have fallen on relatively hard times. Certain analysts have commented recently that there have been few recent studies, relatively modest theoretical advance in recent years, and a paucity of large-n investigations. (For recent overviews of the state of research in this specialty, along with recommendations for advancement, see Lester and Goggin 1998; and, in response, deLeon 1999a; Meier 1999; Schneider 1999; and Winter 1999. See also deLeon 1999b.) In part, the relatively lessened attention to issues of implementation probably reflects the less ambitious agendas of governments during the past decade. Still, as O'Toole has argued elsewhere recently, the reports of difficulties and lack of progress have exaggerated the current state of the field (2000). While there are shortcomings in the research literature, and while considerable progress needs to be made, the situation is not at all bleak. A number of promising lines of work have developed in the last few years, even if less obviously so than observers might prefer. And sophisticated larger-n investigations have by no means been rare. (For a thorough assessment of the literature and justification for these several conclusions, see O'Toole 2000.)

Indeed, the field is now poised and ready for significant moves forward. The point of this paper is to contribute directly to this development. The purposes here are, in fact, two. First, and primarily, we present the outlines of a theoretical approach to implementation that offers promise for delivering a comprehensible, parsimonious, powerful, and yet nuanced explanation (and prediction) about policy action. In addition, we provide context for this approach by connecting it to some contemporary developments in the scholarship on policy theory. In particular, since the theory sketched here is heavily deductive, we offer some comparison with another recent and prominent line of deductive theorizing that has appropriately drawn some attention. The objective here is both to outline a comparison of approaches and also to indicate the overlaps, differences, and appropriate ways and circumstances for their use. The result is intended to inform researchers on policy implementation of a plausible candidate theory, and strategy for theory building, and also to indicate to the broader community of policy scholars how this perspective fits within emerging developments beyond the implementation question per se.

For while the issue of implementation continues to be an interesting and robust subject attracting the attention of diverse scholars, it has been largely true that with rare exceptions theoretical efforts on this subject have drawn very heavily from inductive perspectives. From the initial case study by Pressman and Wildavsky (1984) to the framework offered by Mazmanian and Sabatier (1989), and from the insights of bottom-up theorists (for example Hull with Hjern 1987) to the "third-generation" efforts of Goggin et al. (1990), theory building in efforts to understand why certain forms of policy action

follow authoritative governmental commitments have moved from the specifics of detailed observation to general theoretical statements.

There is nothing wrong with inductive approaches per se. But the field has been so dominated by radically inductive perspectives (see O'Toole 1993 for discussion) that certain weaknesses have also become significant. One is the sheer proliferation of variables proffered as plausible candidates for inclusion in implementation theory. A review of hundreds of studies more than a decade ago identified a dauntingly long list of such variables offered in the international research literature (O'Toole 1986). And there has been little paring down since then. In fact, Meier has commented sardonically on this point by linking it to the prominence of case studies in the research literature: "I often characterize the theory as `forty-seven variables that completely explain five case studies' . . . . I propose . . . [a]ny policy implementation scholar who adds a new variable or a new interaction should be required to eliminate two existing variables" (1999: 5-6). Alternatively, "everyone who is interested in policy implementation should pick one variable or relationship and . . . [advocate] that it should be dropped from our theories" (p. 6). This criticism is based on substantial exaggeration; and, as suggested earlier, larger-n studies have become – if not commonplace -- far from rarities. But the comments regarding the proliferation of variables are reasonable and serve to suggest a problem for theory building.

For the sheer variety and complexity of the partial frameworks and theories typically offered create difficulties in testing, accumulating insights, and building powerful formulations. The lack of parsimony has also contributed to a certain vagueness in approaches offered. The clarification of dependent variables, let alone independent ones, has been a rather uneven effort, and a result has been that it is sometimes difficult to know for certain when propositions have been disconfirmed by evidence. It is also a challenging task to combine findings from different and often disparate studies into anything approaching a rigorous meta-analysis. Another corresponding consequence has been that scholars have been reluctant to offer practical suggestions for improving implementation performance. When advice is offered, typically it has been fairly vague and obvious (see O'Toole 1986). And it continues to remain largely true that practical suggestions are typically "desultory and strategically vague" Elmore 1979-80: 601; efforts to craft exceptions include Bardach 1998; O'Toole 1995; and perhaps Mazmanian and Sabatier 1989: 41-42).

Indeed, we would argue that even should a fully specified and valid theory of policy implementation command support, such a theory would be of only limited immediate value to practitioners. The ceteris paribus assumption, typically a part of theoretical propositions in such realms of research, violates the real features of the world of practice, where variables can shift at the rate of more than one at a time, interactive effects can be crucial, and the complexity of a mature theory is likely to offer little direct guidance for decision making.

In short, then, two key points bear emphasis. The very heavily inductive approaches that have dominated thus far have led to many interesting ideas but not much accumulated and accepted theory. (The frequent reliance on case studies has been a contributing limitation.) And the approaches that have been emphasized have not led to much useful advice for practice. (Nor, we argue, are they likely to do so in the foreseeable future.) Both points undergird our efforts to propose a different approach to theory building to explain – and perhaps predict and ultimately influence – policy action. Instead of continuing from an inductive orientation, we move to an explicitly deductive perspective. And the deductive logic offered here is structured so as to be both parsimonious and also realistic.

These late-mentioned attributes – parsimony and realism – are difficult to approach simultaneously. Adding variables and complexity to a theoretical approach can aid accuracy and thus realism, but at the expense of simplicity. Deductive approaches, often derived from economics, are typically critiqued on the basis of their lack of realism, despite their parsimony. As explained below, however, we use the notion of "core circumstances" as a filtering device to allow for the play of complexity within, or through, a simplifying prism assisting in paring down the long list of variables into a manageable handful. The objective is a highly predictive and comprehensive approach.

In general terms, it should perhaps be emphasized, we do not adopt a naive, *de novo* logic in the deductive structure. This theory has been developed upon a basis of the extant implementation research findings, and partially on the basis of the evidence suggesting the importance of a number of variable clusters in driving policy action. But we boil these down to a simple grounding upon which a fairly subtle – and thus potentially realistic – set of propositions is built. The propositional inventory derived from the theoretical logic, in turn, avoids the ceteris paribus complication that has stymied many other approaches; this perspective, then, may be particularly helpful for those interested in a practical logic with potential to aid implementers and others in the real world of policy.

The turn to a deductive approach, particularly one based on the notion of interaction among policy actors and strategic decision making at the core of policy choice, may be reminiscent of some other recent theoretical efforts in policy research. (For a review of many of the most important contemporary policy theories, both inductive and deductive, see Sabatier 1999.) Aside from economic theorizing per se, one might note in particular the work of Elinor Ostrom and colleagues (see, for instance, Ostrom 1999 for a thorough review) and the ideas of Fritz Scharpf (1993, and especially 1997) centered on the approach called "actor-centered institutionalism" (see Mayntz and Scharpf 1995 as well). (There are other candidate approaches that could be mentioned. Note, for instance, the contributions of Torenvlied 1996a and 1996b. Thus far, however, Torenvlied's ideas have not had a significant impact on the international research literature.)

This is not the place for a careful review of these approaches. What can be said is that, while Ostrom's approach offers considerable promise for

explicating aspects of multiactor processes in complex institutional settings, it seriously downplays both policies themselves and also governments as distinctively important entities in policy settings. For these reasons, we focus instead here on the work of Scharpf. Although his approach is not devoted primarily to issues of implementation, it offers other features which, we think, render it an important candidate for serious consideration by policy researchers. Accordingly, we devote attention in this analysis not only to explicating our own approach but to offering some comparison with Scharpf's ideas. The results may be of use to implementation scholars and also to those with interests in policy theory more generally.

The basic structure of this article is straightforward. Following a few additional context-setting remarks, particularly on the kinds of policy theory that may be most important to develop today, we indicate more carefully both why more deductive approaches to implementation are necessary and also some potential pitfalls in some such approaches that need to be avoided in this effort. We then sketch the basics of our "instrumentation theory." Once the theory is outlined, it is compared with the perspective offered by "actor-centered institutionalism." We then end with some conclusions and implications.

Whither policy theory? To avoid confusion, we should be clear at the outset what we do and do not mean by policy theory. "Policy theory" in this treatment means empirical theory intended to explain and/or predict policy action, or action that emerges around a policy problem. (And policy problems are perceived situations or circumstances that some actors believe are or ought to be subjects of attention by governments, their agents, and/or their partners.) Policy theory, then, does not mean theories imbedded in policies – e.g., that building more highways is likely to relieve traffic congestion. Nor does policy theory refer to theories of how policy analysts can or should assess the value or consequences of policy – e.g., benefit-cost analysis. Our attention, then, is devoted here to understanding the policy process, along with its outputs.

Recent years have seen increasing attention paid by policy theorists to policy making per se. It has generally been recognized that often no strict boundaries can be drawn between policy formation and policy implementation (cf. Sabatier, 1991), and this realization seems to have lead to theories of the policy process that – while not distinguishing between stages of the policy process – nevertheless seem to be focused only on policy making examples and thus miss consequential lessons that could be drawn from the wave of implementation research that was particularly prominent in the 1970s and 1980s. Our position here, as suggested earlier, is that it is nevertheless sensible to strive for solid and parsimonious theory for explaining action during implementation.

Why does "policy implementation" deserves a separate theoretical treatment? The classical stages model of the policy cycle raises the question of the extent to which such apparently sequenced subprocesses are only analytical

constructions or whether they can also be identified in real life. Setting political agendas can be considered to be an aspect that is present in all policy processes. The same can be said for evaluation. Feedback consists of shorter and longer loops that lead to repetition in an altered form of other subprocesses, and so would seem not to be a subprocess in its own right. In short: if we are to use "real life" processes, then agenda setting, evaluation, and feedback are possibly *not* separate subprocesses of the policy cycle. Policy preparation and policy determination are in day-to-day empirical practice often also so closely related that it is usually not worthwhile to analyze these as separate processes. This leaves just two policy processes from the traditional policy cycle: policy formation and policy implementation. But what does this mean for the succession involvement and action of many administrative levels in complex policy systems? (In European climate policy, for example, these are the global, EU and national levels, and sometimes the provincial and local levels.) What appears as policy implementation for one level may be thought of as an aspect of policy formation for the next level. So does the implementation "stage" lack anything systematically and inherently distinctive?

In principle, we argue, it is possible to make an analytical distinction between policy formation and policy implementation processes, respectively, that can be useful for analyzing these processes. Policy formation processes are those that involve turning diffuse inputs into a more focused output, and policy implementation processes are processes that involve turning a more or less focused input (the "policy") into a number of diffuse outputs. When looked at this way, though, making a distinction between policy formation and policy implementation means that the analyst must first specify what this focused output–input is.

Whether policy formation and policy implementation are different processes depends on the question of whether there is a separate arena (playing field), a mostly self-contained game that can reasonably be distinguished from others, and a largely non-overlapping group of actors involved. In other words, this is an empirical question. The answer will sometimes give cause to draw a distinction between processes and sometimes not, depending on the goal of the research (cf. DeLeon 1999b).

We conclude, therefore, that there can be systematic features of policy implementation processes -- namely the institutional and resource context of the policy (instruments) that are to be implemented. Precisely these features are to be taken into account when analyzing these processes.

2 The need for more deductive approaches

What reasons compel a shift to more deductive approaches for understanding the policy process? The recommendations made by policy analysts should ideally act as a "catalyst" to the quality of the debate during policy processes (cf. Quade, 1986). There are, however, various complications that might lead actors in the policy process to "false learning," rather than improved

performance on the basis of recommendations. These can be summarized sketchily (cf. Bressers, Herweijer, Korsten, 1993: 239-243): (1) concrete proposals are almost never fully based on research (the identification of negative factors only points in a direction about where to generate improvements); (2) recommendations typically are grounded in too cursory attention to cultural and institutional prerequisites; (3) often attention moves prematurely to an option for choice rather than tolerate delay to seek an extension of possibilities (thus, real life "experiments" are typically foreclosed); (4) "away-from-the-problem" suggestions might generate new problems or prove to be only partial solutions to isolated difficulties that do not change the negative overall pattern when changed; (5) and "knowing how to win the last war" is not necessarily apropos as a route to problem solving in new, at least partially unprecedented situations.

These observations not only lead to a plea to analysts for modesty and for emphasizing an increase of the learning capacity of policy actors rather than to try to replace them with authoritative advise. They also suggest the conclusion that case-by-case learning is insufficient to "store" and "refine" knowledge of public-policy processes, and that "probabilistic" theories bridge the gap between lessons learned in one case and applications in other cases.

Many implementation studies set out not only to identify policy outputs, but also to explain them. These explanations vary from case to case, and the relevant scholarship has put forward a vast array of factors – as suggested earlier. The policy may have run aground because "the municipalities responsible for implementation were not sufficiently motivated," "there were staff shortages," "the guidelines arrived late," "the applicants did not understand the subsidy arrangements," "there was insufficient support in society," "the statements of the undersecretary spread confusion in the media," and so forth. There are two disadvantages to such ad-hoc explanations. First of all, although they may contain some degree of truth, they rarely tell the whole story. Typically, the identified factor(s) exert influence in combination with other factors which, in and of themselves, need not adversely affect implementation. For instance, a lack of motivation on the part of the municipal managers to implement the policy is only a decisive factor if these local managers enjoy a large degree of discretion (or can afford to act as if they have it). However, a large degree of discretion in itself need not prevent effective implementation. Relying on ad-hoc explanations, therefore, tends to support recommendations that are more like proverbs than anything else (O'Toole 1986).

Secondly, ad-hoc explanations do not engender a cumulation of knowledge about factors that influence policy implementation. The extant studies show little uniformity, being based on different terms and levels of abstraction. As a result, information from new research often cannot be tested against predictions based on earlier research. It is possible, up to a point, to induce certain general factors from the concrete ones mentioned in the various studies (see Hoogerwerf 1977, cf. Sabatier & Mazmanian 1980, Mazmanian & Sabatier 1989). But the interactions between these general factors, the way in which they reinforce or weaken each other's influence, is rarely taken into consideration. Another drawback is that they tend to remain fairly abstract. As a result, they are not often used in

practice as a basis for hypotheses, but rather for fruitful diagrams aimed at the clear classification of ad-hoc explanations. But to achieve cumulative knowledge, it is vital to develop theories with explanatory power.

Deductive theory has important strengths, and we have chosen this approach for these reasons. But it is important to remember that there are limitations as well. One derives from earlier work. An important segment of existing deductive theory about policy instruments consists of economic literature in which targets' responses, predominantly those of companies, to the application of various instruments are dealt with. The models that evolve from such literature often appear very sophisticated. In some cases the complex character of decision making is carefully dealt with. Nevertheless economic theory is often based on an objective-rational decision making model, sometimes even calculating pros and cons merely on the basis of monetary assets. Of course such a model is easy to use but very limited in terms of realism. A first improvement – one also often used by economists – is to emphasize the subjective character of the weighting done by target group actors. Actors do not choose on the basis of their actual circumstances, but on the basis of their perceptions about these. These perceptions may well be restricted to only part of the real behavioral alternatives and their characteristics. They can also be "wrong." Furthermore decision makers might have to deal with uncertainty. Secondly, the subjective model also means that the influence of the pros and cons is modified by the various weights that actors attribute to these aspects. Here also the importance of short-term versus long- term perspectives and uncertainty avoidance play a part.

Additional limitations can be mentioned briefly. For instance, altruistic, social mimicry, and legal normative motives can in principle be included in individual motives, but in practice these need separate attention in order not to be forgotten in the "homo economicus" model.

A different sort of limitation has to do with the tendencies of economic analyses to treat implementation issues lightly, in general. Many economic deductive models are based on the assumption that the policy will be implemented as decided upon. This is however far from sure and deserves an own and very important part of the model.

Often deductive approaches focus implicitly on a one-actor decision-making model. But many actors are complex or "corporate" ones. Whether it is justifiable to treat them as single actors is a question that deserves attention in each study. (Indeed, our approach offers refinements for multiactor decision making circumstances, where – for instance – target groups are themselves may be less than united in perspective during a policy's implementation.)

Finally, it is important when developing deductive implementation theory to avoid the trap of an implicitly top-down assumption. Target group actors are not in the business of responding to implemented policies, but in the business of minding their own business. Often the incentives that are provided by the policies are seen by such groups as merely a part – perhaps a small part – of

the array of constraints and resources in their own environments of action: possibly something to reckon with, but not vital or compelling from their perspective (cf. Elmore 1979).

For all these reasons, we aim for a general deductive approach that has potential to explain policy action and captures as much as possible of the advantages and as less as possible of the disadvantages connected to deductive approaches.

We base this work on initial theoretical efforts developed in the Netherlands – an approach called "instrumentation theory." The theory derives its name from the fact that it was developed to facilitate the comparison of policy instruments (and not from a perspective that views implementation action in entirely instrumental terms or as action that can and should be controlled by central authorities). One of its basic assumptions is that the operation of policy instruments cannot be seen in isolation from the circumstances in which they are applied. The theory therefore not only looks at the characteristics of policy instruments and their impact on target groups, but also at implementation processes. (For the first version, see Bressers & Klok 1987; 1988. After a series of generally encouraging empirical studies -- for instance Klok 1987; Grimbergen et al. 1988; Kraan-Jetten, 1991 --, revisions led to a refined version; see Klok 1991. Additional empirical studies have followed; for instance, Pullen, 1992.) Here we aim to bring the approach to the attention of a broader international community of specialists and connect it to some of the important contemporary policy perspectives. Given space limitations, the theoretical material itself is presented only in summary form here.

3 "Instrumentation Theory": A Brief Sketch

This section presents some of the core elements of instrumentation theory, with an emphasis on its guiding assumptions and overall deductive logic. For present purposes, we omit derivations of all the detailed propositions. We also, of necessity, avoid elaboration of variants of the core argument crafted to deal with more complex settings. For instance, taking into account implementation target groups as complex rather than unitary actors is a task that has been tackled in the theoretical project (see for instance Bressers 1998; Bressers and O'Toole 1998; Ligteringen 1999). But these aspects are not central to the current exposition and are therefore omitted from this coverage. We move, instead, directly to the basic elements of the instrumentation theory in general.

Interaction processes and instrumentation theory
Thinking in terms of policy processes suggests emphasizing their character as social interaction processes. Doing so shifts attention from viewing policy as a sort of production process with semifinished products and an ultimate end product to a vision in which the actors participating in the process are the central concern. In this perspective the course and outcomes of the processes depend not only on inputs but mainly on the characteristics of the actors involved, particularly their objectives, information, and power. All other factors

that influence the process do so because, and in so far as, they influence the characteristics of the actors involved. This point holds as well for the influence achieved by policy instruments. Not all characteristics of actors, however, are determined by policy, and so it is not possible to describe a policy without paying attention to the actors involved in that policy. These actors, therefore, can be displayed explicitly in a graphic model of the policy (Bressers, 1983),

Moreover, we conceive of the processes not as linked merely in one series or cycle, but via connection with a large number of societal processes in which government authorities sometimes participate and sometimes do not. All these processes are connected to still other ones in a complicated web by means of their inputs and outputs, and possibly indirectly linked to *all* other processes. Each definition of a sector of society draws a more or less arbitrary boundary round a cluster of processes in this web.

The "instrumentation theory" which derives from this perspective focuses on the application and effects of instruments on the target groups of policy (Bressers & Klok 1987, 1988; Klok 1991) and later also on the choice of policy instruments (Ligteringen 1999, Bressers & O'Toole 1998).[1] In this paper we will focus on the modules that deal with implementation processes.

Explaining implementation with "Instrumentation Theory"
The theory assumes that the policy implementation process is not only about achieving implementation, but also about attempts to prevent implementation or to change the character of what is implemented. The process involves activities and interactions between the implementing government officials and the members of the target group. Often the same actors already maintain contact with each other in connection with other matters. Moreover government and target group often exert influence on each other before the policy that is to be implemented is introduced. The new policy does not replace this interactive process, but adds a new element to it. Therefore, to assess the possibility of the new instruments being applied and correctly applied, it is necessary first of all to gain insight into the factors determining the nature of the interactive process between government and target group. We can then try to find out how these factors change due to the introduction of the new policy instruments (Bressers & Ringeling, 1989, 1995).

Another basic assumption of the theory is that the factors which influence the implementation process do not operate in isolation from each other (cf. Mayntz, 1983). The influence of the various factors cannot be simply added up. A factor that exercises a positive influence under certain circumstances may exercise no influence, or indeed a negative influence, under other circumstances. The way in which these processes develop must therefore be explained on the basis of combinations of the values of the various distinctive factors. A crucial point, therefore, is that this means that hypotheses about the relationship between the dependent variable and only one independent variable at the time, with a "ceteris paribus" assumption regarding other independent variables, are regarded as unproductive.

Though this basic assumption is undoubtedly more realistic, it creates severe complexity problems for theory formulation. In fact, if one assumes 15 independent variables to be important to the development and results of the implementation process, than even if one treats these variables as dichotomies, no less than 32,768 combinations of circumstances or "settings" can occur! And even leaving aside concerns of parsimony, because many of the relevant variables cannot validly be operationalized as quantitative measures computerized modeling provides no escape.

Instead, this complexity is made "manageable" by distinguishing two sets of independent variables. These are "core circumstances" (that is, factors that have a direct influence on the development of the processes) and external circumstances (factors that have an indirect influence via their influence on the core circumstances). The applied policy instruments can be counted among these "external circumstances." The theory indicates how the core circumstances jointly determine the development and results of a process. External circumstances, including characteristics of the policy instruments that are to be implemented, are taken into consideration when estimating the value of the core circumstances. In this way many circumstances can be taken into account without increasing exponentially the complexity of the theory. In this fashion, therefore, we craft a theory that is both deductive and also realistic – that is, it takes into account the complexity of the circumstances without being overwhelmed by the complications. The number of settings remains limited as they are determined by a limited number of central circumstances.

These central circumstances are the goals, information and sources of power of the actors involved. These three have proved themselves to be exceptionally useful in explaining the dynamics of such processes (see Bressers 1983: 189-197 for an explanation of why these three in particular are essential). Another way of illustrating their rich significance is to relate these three factors to the often used division into the three "steering mechanisms" of incentives (objectives), communication (information) and directives (power). A third is the link with some of the general perspectives of the several social science disciplines.

Scientific Perspectives	Individual	Social
Resources (power)	a. The greatest benefit will be chosen (Economics)	b. Those with most power can choose (Political Science)
Cognitions (information)	c. It is not the facts that are important but how what is observed is interpreted (Sociology / Psychology)	d. Interpretations of reality are the product of social construction (Social psychology / Communication science)
Values (objectives)	e. People should want what is good (Ethics)	f. The limits to what is good are set by rules (Law)

All this serves to stress that objectives, information and power are not just a sample of key factors from a population of equally important alternatives, but in our view really "cover the ground" of the relevant characteristics of actors in social interaction processes.

In the next subsection we will elaborate this perspective for two aspects of implementation processes. The first focuses on whether there will be implementation at all. Some envisaged implementation processes never really take off for certain sub-sectors or at certain local sites; or even, on occasion, in general. The second aspect deals with the degree of correct implementation. "Correct" is not conceptualized in the judicial sense here, but in the sense that the implementation approach supports rather than weakens the intended incentives that the instrumentation produces. Since implementation can proceed at the price of substantially weakening the intended incentives for the target group's behavior (e.g. fully using the budget of a subsidy program without checking the recipients behavior), it makes sense to give special attention to this aspect also.

Likelihood of implementation
The policy implementation process is typically characterized by the interactions between the government and the target group of the policy. The application of a certain policy instrument often takes up a less prominent place in this process than one would be led to expect on the basis of official procedures. The actual granting of permits to those members of the target group who are required to hold permits, the actual imposition of levies, the application of sanctions when regulations are violated: none of these can be taken for granted in the practical process. The first result of the implementation process can therefore be indicated as the possibility or likelihood that the instrument will be applied at all. Sometimes this result may have the side-effect of undermining the credibility of the policy, particularly if implementation fails to get off the ground.

It is quite conceivable that not only the members of the target group but also the government body responsible for implementation attach little importance to the application of the instrument. Implementers have values and interests of their own, which may not coincide with the activities involved or even the policy as

such. Symbolic policy is a well-known phenomenon in many nations – that is, policy that is not taken seriously by implementers, and perhaps is not meant to be, and that is not supported by serious commitments of resources. So the first group of factors that determines whether policy instruments are applied consists of the objectives of the implementers and the target group. To put it more specifically, the central question is whether the actual application of the instrument will contribute to the achievement of the objectives of these actors.

The successful application of policy instruments also depends on whether those involved have sufficient information. The first question to ask in this connection is whether the policy implementers know who make up the target group. Do they know, for instance, which companies are obliged to have a permit or which ones qualify for a subsidy? If the target group itself stands to gain from the application of the instrument, for instance in the case of subsidies, then information available to the members of the target group may also help to increase the likelihood of application. This concerns information about the way in which they can benefit from the instrument.

The third group of factors that determines the development of the implementation process is the distribution of power between the implementers and the members of the target group. First of all, who is empowered to apply the instrument and how far does this power go? The power might rest exclusively with the implementers. But in some cases, for example, with subsidies, the instrument can only be applied at the request of the members of the target group. The target group then enjoys an extremely strong position if it is not in favor of the application of the instrument. Other forms of power may derive from formal sources (as with opportunities to appeal) and informal sources (like dependence on another party for the achievement of other objectives).

The combination of these circumstances determines the kind of interaction that will occur between government and target group in the policy implementation process. The theory makes a distinction between three types of interaction: active cooperation, passive cooperation and opposition. Active cooperation occurs when both parties share a common goal. We speak of passive cooperation when one of the parties adopts a relatively passive attitude that neither hinders nor stimulates the application of the policy instrument. Opposition occurs when one of the actors tries to prevent application by the other actor. There are also situations in which there will be no interaction at all between the government and the target group. In this case the possibility that the instrument will be applied is very remote indeed.

Diagram 1 gives an overview of the circumstances in the implementation process and the types of interaction and results to be expected from the application of instruments in these circumstances. Each situation contains a configurational hypothesis. For instance situation 1 can be read as: If application contributes positively to the achievement of the objectives of both the implementers and the target group, and the implementers' information is sufficient, then the interaction will be "active cooperation" and the likelihood of application will be "very great."[2]

Degree of correct implementation
The mere application of a policy instrument does not automatically lead to the envisaged change in the consequences of the behavioral alternatives of the target group. The application may not be up to standard; for instance, levies may be lower than originally intended, or permits may not specify restrictive regulations, or grants may not be accompanied by the intended conditions. The question in such cases is not whether the policy implementers themselves are breaking the law or other regulations, nor whether they deviate from the instrument-as-intended as such. Empirical implementation research has shown that deviations can actually be motivated by concern for goal-attainment by the implementers. The dependent variable here is whether the impact of the instrument on the consequences of the behavioral alternatives of the target group is less far-reaching than originally envisaged by the policy makers.

The factors that determine the character of the interaction process between government and target group on this point are virtually identical to those mentioned earlier: objectives, information and power. Nevertheless, we still need a separate analysis, depicted below via another diagram, since the factors may take on very different values and the types of interaction are more complex than those that occur in respect of the likelihood of application. For instance, the members of the target group may well favor the application of a subsidy in itself, but oppose correct application as this would bind them to all sorts of regulations. Or, in another situation, implementers may have sufficient information to identify those members of the target group who require permits, but have insufficient information to know what regulations should and can be applied to the companies in question.

The types of interaction that may occur in connection with correct application are to a certain extent different from those linked to the possibility of application. This is because the degree of correct application involves a much larger number of aspects. The degree of correct application, for instance, not only concerns the question whether a company required to have a permit will indeed obtain one, but also whether that permit will be adequate, that is, contain all regulations necessary to achieve the policy objective. It is precisely the formulation of these regulations that is the most difficult part of the negotiations between government and industry. Furthermore, the concept "degree of correct application" assumes that a certain degree of application takes place. If the instruments are not applied, the degree of correct application lacks all significance. The application of policy instruments almost necessarily leads to interaction, so it will be impossible for the result to be "no" interaction, as in diagram 1. A distinction is made between constructive, but also obstructive, cooperation, negotiation and conflict. Obstructive active cooperation occurs in situations where both actors stand to gain from incorrect application. The same phenomenon may occur with passive cooperation when one or both parties have an interest in the application of the instrument – for example, because non-application would be rather too obvious to higher authorities -- but not in the correct application of the instrument. In view of the many elements involved in the correct application of the instrument, it is useful to subdivide the interaction type "opposition" into negotiation and conflict. In the case of negotiations, the parties do their utmost

to realize as many of their own objectives as possible by reaching a compromise. In the case of conflict, the target group usually breaks the lines of communication and confronts the other party with a negative use of power. In the latter case, the target group will generally question the legality of the instrument. Finally, with some combinations of circumstances the interaction type and result are highly uncertain.

Diagram 2 gives an overview of the situations and predicted interaction types as well as expected results, in terms of the degree of correct application of the instrument.[3]

The implementation of a policy may involve the deployment of more than one instrument (an example is analyzed empirically in Yu et al. 1998). In fact, different instruments are frequently applied at different stages of implementation. For instance, the first step in applying a permit system would be to issue permits specifying certain regulations; the second step would then be to enforce these regulations. Therefore, to generate a comprehensive explanation of the results, the parts of the theory described here will often have to be applied several times.

4 A Comparison with "Actor-Centered Institutionalism"

The ultimate value of this theoretical approach can only be judged through testing -- and, in terms of its practical value, an assessment of its predictive and diagnostic utility in the policy process. We do not undertake systematic testing here, but this section does offer additional context for understanding the approach. It does so by rendering a brief comparison with the game-theoretic perspective developed by Fritz Scharpf. The point is to demonstrate the ways in which instrumentation theory is related to but also distinct from another recently sketched deductive approach to understanding policy action. Such a comparison can permit more direct assessments by others of the possible added value of this approach to implementation research. And it may also aid further theory building itself by suggesting the relative advantages and disadvantages to these somewhat related but different perspectives.

Scharpf's approach is not directed at questions of implementation per se, as is instrumentation theory. It holds the potential for some application there, nonetheless, and game-theoretic logic has been explored by others to suggest its strengths and limitations in implementation analyses (see O'Toole 1993; 1995). The comparison, therefore, is directly relevant to the issues at hand.

In his recent overview of policy science approaches, Sabatier (1999) classifies the game theory of Scharpf (1997) with the institutional rational choice approach (see above). There is something to be said for this categorization. Nevertheless, Scharpf and collaborators highlight a few points omitted by the most prominent proponent of an institutional rational choice perspective, Ostrom (et al.). Scharpf calls his approach "actor-centered institutionalism," and with good reason: much attention is paid to the "actor constellations." The

goal and structure of the approach appear generally similar to those of instrumentation theory, namely that the course and outcome of processes are explained. Both place the interplay of policy-relevant actors into the foreground of analysis. Neither gives a priori primacy to a particular category of policy actors, thus avoiding a problem that plagued some earlier versions of implementation theory. And both structure analyses to permit consideration of more complex and interactive circumstances, via connected games (in Scharpf's work) or interactions among instruments (in instrumentation theory). Further, the approach is based primarily on individual rational actors, although values other than self-interest are also taken into account. As with instrumentation theory "the co-existence of norm-oriented and self-interested preferences" (Scharpf, 1997: 181) is taken for granted (though the basic interpretations of game situations seem largely based on an assumption of self-interested individuals).

We should notice here that Scharpf does not really pay attention to the kind of context that is typical for implementation processes. Where he deals with implementation per se (pp. 117-118) he is actually referring to what we would label the chance for compliance with the agreement. His notion is not about implementation as a process of coming to an individualized "agreement" (or authoritative decision) in the context of a specific policy. He pushes aside the issue in a rather easy way by stating that implementability issues, like enforcement, should be part of the agreement itself contributing to the difficulty of reaching the agreement. For that reason, he indicates, the rest of his argument deals only with the difficulties that must be overcome in reaching agreement through negotiations (page 118). In this fashion, of course, he eliminates the nitty-gritty questions of implementation by assumption. This leads us to the questions of what the specific characteristics of the implementation context are, and how they are incorporated in instrumentation theory as compared to game theory.

Implications of the implementation context
Some characteristics of implementation processes imply that specific situations in terms of a game-theoretic context are more likely than others. These concern two aspects of game-solution possibilities, in particular. First, typical implementation processes allow the possibility to communicate between both (all) parties. In fact they consist primarily of such communication. Second, typical implementation institutions have the option to make the outcome of interaction binding. In fact the implementation of many policy instruments is formally about producing a binding output at the level of the individual member of the target group of a general policy instrument. These can include a conditioned allowance of a subsidy, a license, a sanction, a levy invoice, and so forth. (Technically, this second point can be incorporated into a game-theoretic analysis through the notion of default conditions that apply under some options, like noncooperation by target groups. Of course, this addition complicates any analysis.)

Another important characteristic refers to the "interaction orientations" (pp. 84-89) in implementation processes. The valuable analysis Scharpf gives here shows first of all that aside from the characteristics of the game itself, the

interaction orientation has a large effect of the predicted outcome, and secondly that the "normal" interpretation of the various games in fact is one that is based on a individualistic rationality assumption. In actual implementation processes, of course, the values of maintaining good relations or the hostility that was produced by previous encounters between implementers and targets groups (Arentsen and Bressers, 1991) make a variety of interaction orientations quite plausible.

The characteristics mentioned above suggest that implementation situations have some parallels with game-theoretic settings, but they refer to specific situations that should be heeded in the analysis. There are, however, also differences that can be ignored only by omitting key elements of many actual empirical situations. These characteristics will result in a reconceptualization of central variables of game theory, or in the introduction of additional variables.

The first of the major differences is the fact that in implementation there is a formally adopted policy instrument that (at least in an analytical sense) serves as the focus or input of the interaction. This implies that in implementation the actors not only have a strategic orientation towards each other (as in a game-theoretic setting), but also have an equally important strategic orientation towards the policy instrument that has to be implemented. This means that the primary interest constellation of the actors (as one of the independent variables) is not defined in terms of their preferences for defection or cooperation towards each other, but in terms of their preferences regarding the implementation of the instrument. In instrumentation theory these preferences are referred to in variables such as "the consequences of implementation for goal attainment of the policy implementers." This slightly different strategic orientation in implementation (as opposed to a game theoretic setting) also has implications for the dependent variables of the interaction. Whereas game theory is concerned with reaching stable cooperation between actors, this is important, but not the entire story in implementation, for actors might find themselves perfectly happy in an agreement (cooperation) *not* to implement the instrument (or implement it only in a symbolic way). In instrumentation theory this results in a specification of the basic forms of interaction, where *constructive* cooperation (resulting in highly correct implementation) is distinguished from *obstructive* cooperation (resulting in low correct implementation, or even "no interaction" in terms of the likelihood of implementation). Whereas both forms of cooperation could be seen as a "solution" (that is, a Nash equilibrium) in terms of game theory, it is obvious that the latter would not count as a solution from an implementation theory.

The second major difference between game and implementation contexts has to do with the fact that game theory has limited its scope towards behavioral (strategic) *choice*, whereas implementation includes choice, but also has (by nature of its activity) important elements of *production*. This means that besides the preferences or motivation for actions, the actors' abilities or capacity to actually perform the action of his choice are equally important. If an implementer decides to close down a factory that operates without a

license, it is not enough to write the management a letter stating "from day X your factory is closed." Although it is not impossible that the management would respond to such a letter by actually closing the factory down, in most cases additional actions by the implementer would be needed. In game theory the actual performance of the defect and cooperate strategies is usually deemed unproblematic. In instrumentation theory the "information" and "power" variables are incorporated to refer to the ability of the actors to perform actions.

The consequences of these two points can be illustrated by relating the outcomes regarding "likelihood of implementation" to the basic interest orientation of the actors involved (as would be the standard game theoretic approach). Instrument implementation theory accepts three values each, for the "interest" variables. In situations in which neither of the two parties is really in favor of actual implementation the theory indicates that no interaction will occur. More interesting are the five situations in which at least one of the parties has an interest in implementation. In situations where there is no real clash of interests the information of the actor(s) willing to implement the instrument becomes crucial for the likelihood of implementation. In situations with a clear clash of interests (upper right and lower left), the constellation can be compared to a mixed-motive (or, in the extreme cases, zero-sum) game, where in addition to information the actors' power position becomes an important variable.

Likelihood of implementation

Interest in implementation		Implementers +	0	-
Target group	+	(if enough info of implementers): collaboration	(if enough info of target group): co-operation	(depending on info target group and power)
	0	(if enough info of implementers): co-operation	no implementation	no implementation
	-	(depending on info implementers and power)	no implementation	no implementation

A further important characteristic of implementation processes is their hierarchical nature, at least in a formal sense. Although implementation research has learned that in many cases negotiation would be a better label than hierarchy, the result of these processes would still be a formally authoritative decision by the implementer. The actual characteristics of most

implementation processes could therefor perhaps best be described as "negotiation in the context of hierarchy" (Scharpf, 1997, p. 198). Scharpf draws some attention to games in such a context, where he describes negotiation between two sections of a ministerial department (pp. 198-200). In this context the sections negotiate under the condition that if they do not reach an agreement a third actor, the minister, would take an authoritative decision and the game would be "out of their hands." This context is however different from most implementation contexts in the sense that one of the players (the implementer) has the authority to take the decision. This complicates the strategic situation, for one of the players has the option to play his "hierarchical cards" by "going by the book," or opt for a possibly less conflictual negotiation strategy. In turn, the other actor has possibilities, for instance by appearing cooperative or belligerent, to influence this choice. In this sense the actual conditions under which the game is played are part of the game itself.

This is related to a further important characteristic of implementation processes: the options of the players are not fixed. Whereas in game theory the players usually only have the cooperate or defect options, in implementation the actual outcome (and thus the strategic consequences of cooperation and defection) are in most cases negotiable because of discretion of the implementers. By negotiating a solution that is more or less acceptable to both players, the actors have the possibility of trading strictness of implementation for mutual cooperation (cf. Heckathorn/Maser, 1987, referred to in: Scharpf, 1997: 77). In this sense not only the conditions but also the actors' alternatives and their consequences are part of the game.

The fact that negotiation over the outcome is possible draws attention to a further aspect of implementation: the actors are usually in a dependency relation, where the power balance between them might vary from "domination" to "more or less even." Obviously, many policy instruments are envisioned precisely to produce dependencies as a mechanism to change current practices of target groups. Scharpf's analysis (pp. 139-141) of the influence of forms of dependency on a "battle of the sexes" game shows the important implications of a difference in dependency. Dependency seems even more important in situations where the balance of power can influence the (non)cooperative nature of the game, or even influence the nature of the solution that the actors would find "acceptable" (the two points indicated above).

This brings us to the question of how these aspects are incorporated in instrumentation theory. The possibility of negotiating an acceptable solution is incorporated in the hypotheses that cover the correctness of implementation. Negotiation is distinguished as a form of interaction, and its possible consequences for the correctness of implementation are indicated. The dependencies between actors are covered by the variables indicating their power positions. The balance of power is used both as a factor that explains where the likely position of a negotiated solution will be found and as a factor that explains whether actors would opt for a hierarchical (confrontational), a negotiating, or a more cooperative strategy. Whereas negotiation would

generally decrease the correctness of implementation, a confrontational strategy has implications for the legitimacy of implementation (and subsequently for the orientation of the target group in their decisions).

5 Conclusions

In this paper we have tried to show that deductive approaches are a promising way of proceeding for implementation theory and research. Instrumentation theory offers the prospect of a realistic version thereof, thus addressing some of the central issues plaguing implementation theory.

Comparing instrumentation theory with actor-centered institutionalism is helpful: the similarities and differences show the relative advantage that each has under different circumstances. Actor-centered institutionalism offers a broader scope and, by way of its connection to game theory, an important and widely-known theoretical content. Instrumentation theory focuses more specifically on implementation, a point that counts as a disadvantage in terms of generality, but as an advantage in terms of its being more realistic in its assumptions concerning the characteristics of these processes.

The similarities between the two suggest a path that theorizing can productively take. The parallels are broader than might be apparent at first glance. The strategy of reducing complexity via key assumptions is very similar between the two lines of theorizing. The "models of the actor" resemble each other closely as well. Furthermore, the links between the context and the orientations of actors are very similar. Finally, the line of reasoning predicting outcomes is in both cases based on strategic choice (though this is rather implicit in instrumentation theory).

The differences point to reasons why instrumentation theory may be particularly apropos for issues of implementation. Its focus on implementation not only builds upon realistic assumptions -- compared with other deductive approaches --, but also enables it to predict well-specified outcomes that can be useful both in empirical research and in application by practitioners. And this, after all, is the major objective of theory building on such a topic.

One of the lines of work that could be advanced in the future is to develop a closer connection between instrumentation theory and actor-centered institutionalism. Instrumentation theory might profit from a more explicit connection to the different game-theoretic situations that are implied by the situations forming the theory's hypotheses. Indeed, it might be useful to consider the linked-game character of the two aspects of implementation outlined earlier (that is, likelihood of implementation and degree of correct implementation, respectively). Actor-centered institutionalism might profit from the notions in instrumentation theory about the specific characteristics of implementation processes and the way in which these can be modeled to form a more realistic representation of the strategic situations in which actors find themselves. In these fashions and perhaps others, these distinct but related theoretical approaches might both be enhanced.

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has no contribution to the objectives of both actors, it is uncertain which type of interaction will occur;

3. The first two assumptions have to be modified in the sense that it is uncertain which interaction type will occur in case both actors have insufficient information and the interaction would have been constructive;

4. In case of conflicting objectives (one positive, the other negative), and the actor for whom correct application will contribute positive to his objectives has insufficient information, the interaction type negotiation will occur;

5. In case of conflicting objectives (one positive, the other negative), and the actor for whom correct application will contribute positive to his objectives has sufficient information, but the power balance is dominated by the other actor, the interaction type negotiation will occur. If in the same case the power balance is in favor of the actor who want to apply correctly, the interaction type constructive passive cooperation will occur. If the power of the actors is in balance, either negotiation or conflict will occur;

6. In case of conflicting objectives and correct application contributes negatively to the objectives of the implementer, and the target group has insufficient information, the interaction type obstructive passive cooperation will occur;

7. In case of constructive (active or passive) cooperation the degree of correct application of the instrument will be very great;

8. In case of obstructive (active or passive) cooperation the degree of correct application of the instrument will be very small;

9. In case of conflict the degree of correct application will be very great, but there will also be a loss of legitimacy;

10. In case of negotiation the degree of correct application will be dependent on the information of the actor who strives for correct application and the power of both actors in the following way:
    In case of sufficient information of the actor trying to apply correctly and balanced power, the degree of correct application will be great;
    In case of insufficient information and balanced power, the degree of correct application will be small;
    In case of insufficient information and a power balance in favor of the actor trying to apply correctly the degree of correct application will be average;
    In case of insufficient information and a power balance in favor of the other actor the degree of correct application will be very small;

11. In case the type of interaction is uncertain, the degree of correct application is also uncertain.