

Implementation of instruments for sustainable development

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Section 1, Introduction

In May 2000, the city of Enschede got the sort of world-wide attention one is all but longing for when a fireworks trade center blew up an entire district. The blast was causing an incredibly small, but nevertheless sorrowful death toll of 21, injuring more than a thousand people, giving tens of thousand people the shock of their lifetime, when pressure waves shattered glass windows all over the crowded Saturday afternoon city center. In one blow it destroyed a few hundred houses and dozens of companies, leaving thousands of other houses lightly to severely damaged. National media response has been very much to look for scapegoats. But a more apt shortcut in explaining what happened would be to state that basically policy implementers messed up the Dutch consensual style of policy formulation by applying it without enough adaptation to policy implementation and even enforcement, or: to what should have been enforcement.

In policy sciences, during the last decade the division between policy making and policy implementation has lost much of its emphasis. Probably too much. Also Dutch environmental policy studies research and publications concentrated more and more on innovative ways of joint ('interactive') ways of policy making with target populations. It almost seemed like the lesson from the empirical studies of the seventies and eighties had been forgotten, that showed implementation as often the real bottle neck for policy's capacity to successfully bring about societal change. 'Political will' and 'target group commitment' seemed to have taken their place. Implementation studies seemed to have left the stage. Nevertheless, in a recent article O'Toole (2000) states that while clearly less policy research fares under the flag of implementation studies, many research lines constitute important promises for a better understanding of implementation processes.

One of it is the so-called "Instrumentation Theory". It developed theoretically from a type of process analysis formulated and used in my dissertation (Bressers 1983) and empirically from a series of meta-evaluations on Dutch environmental policies. This was started by a report by Bressers a/o. (1985, reporting on 22 studies), resulting ultimately in books by Schuddeboom (1990, 1994, reporting on more than 100 studies). The first version was formulated (in 1986) and published by Bressers & Klok (1987-a, 1987-b, 1988). In his dissertation, Klok (1991) developed a second version of the theory. It is labeled "Instrumentation Theory" because it was initially developed to enable better comparisons between alternative instrumentation strategies. The quick acknowledgement that the implementability and effectiveness of instruments depends to a large degree on the circumstances in the processes of implementation and behavioral choices, made it in fact become a theory of implementation and behavioral choice processes. In its modules, the course and results of the processes are influenced by actor characteristics that in their turn are influenced by both characteristics of the instruments involved and other external factors alike.

In this paper I will present a revised version of the implementation modules of the instrumentation theory. Section 2 will give some introduction in the instrumentation theory. In the next section 3 a new and somewhat streamlined version of the implementation modules is developed. In section 4 the underlying logic of these modules is analyzed and used for a reformulation of the modules in the form of formulas. Section 5 gives an empirical illustration by re-visiting an empirical test of the first version of the theory, re-interpreting it with this third version. Section 6 will offer an outlook, revisiting the issue of the relevance of implementation and implementation theory for sustainable development.

Section 2, “Instrumentation Theory”: A Brief Sketch²

2.1 Policy implementation as a special topic

Why does “policy implementation” deserve a separate theoretical treatment? The classical stages model of the policy cycle raises the question of the extent to which such apparently sequenced sub-processes 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 sub-processes, and so would seem not to be a sub-process in its own right. In short: if we are to use “real life” processes, then agenda setting, evaluation, and feedback are possibly *not* separate sub-processes 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

² The material of this section 2 has also been largely included in the paper ‘Explaining Policy Action: A Deductive but Realistic Theory’, that was jointly presented at the IPSA World Congress 2001 in Quebec with Pieter Jan Klok and Laurence J. O’Toole, Jr.

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 1999).

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.

2.2 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: (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 advice. 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 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 a third version is presented

2.3 Interaction processes and instrumentation theory

This sub-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.

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 semi-finished 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). In this paper we will focus on the modules that deal with implementation processes.

2.4 Configurations

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, and makes the theory better usable for practitioners who always face the complete set of circumstances, rather than isolated ones, 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, then 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).

2.5 Objectives, information and power as 'core' variables

Why are objectives, information and power the useful perspectives when examining the relations between the five elements of the governance model? As we have indicated above this has to do with the fact that the relations between the elements are brought about by processes of social interaction. These three perspectives have proved themselves to be exceptionally useful in explaining the dynamics of such processes. In his thesis Bressers (1983: 189-197) attempts to indicate why these three in particular are essential. He first looks at what is needed to make a relatively simple object: making a chair requires the carpenter to have an object in mind (a goal), and it requires expertise (information) and resources, such as tools and materials (power – over the material here). In a multiple-actor process goals also relate to the position of the actor relative to other actors, as well as information on other actor's positions and circumstances and resources that provide power in relation to other actors. Bressers also considers the long traditions of thinking in terms of one or more of these perspectives (idem: 352-328).

A second way of clarifying the three perspectives is to link them to ideas on policy instruments. Policy instruments are often classified into rules, incentives and communication. This, in our opinion, does not so much reflect different policy instruments but different ways in which they exert their influence. Regulations are not always couched in terms of compulsory rules but may also work by influencing the outcome of balancing the costs and benefits of alternative patterns of behavior (incentives) and ensuring that attention is given to certain alternative forms of behavior (communication). Subsidies are not only incentives, but are also linked to conditions (rules) and information (communication) as well. Communication, certainly two-way communication, often leads to agreements being made, such as covenants or voluntary agreements (rules) and the exchange of concessions, for example acceptance of change in exchange for flexible timing (incentives). In other words, these are aspects of all policy instruments rather than separate groups of instruments. The fact that this classification of instruments still remains so important has more to do with their connections with the perspectives based on societal interaction processes than with their usefulness for this purpose.

A third way of illustrating their rich significance is to relate the three perspectives to social science disciplines. There is a certain connection between these disciplines and the three perspectives mentioned above. This connection is partial, though, and relates to the core principles of these disciplines rather than any details, making a distinction in principle between individual and social methods of considerations.

The fundamental concept in economics is the scarcity of resources and the decisions and bartering that result from this. In its most classical version, the complexities of all other aspects (the social, cognitive and value aspects) are reduced to assumptions of 'methodological individualism', 'complete

information' and 'individual behavior that maximizes benefits'. If 'benefit' cannot simply be equated with money, multiple objectives are formulated, for example 'bureaucrats strive to obtain as large a budget as possible'. This is, in essence, an unethical and pragmatic premise. So, to sum up: 'A: that which gives the greatest benefit will be chosen.'

In political science the social aspect of the distribution of resources, and so the power of one actor over another, are emphasized. Reasoning, then, is about the question of who is going to dominate the field. To sum up: 'B: Whoever has the most power is free to choose.'

Sociology is partly about understanding social problems and psychology is partly about human skill in collecting and processing information. To sum up: 'C: It is not the facts that are important, but how what is observed is interpreted.' (Or: 'What is believed to be real is real in its consequences.')

Social psychology and communication science emphasize the transfer of information in mutual communication processes. Also, the role of information collection and processing is often emphasized in the process of making choices and power relations (and of the development of values). The 'argumentative tendency' in policy sciences fits largely into this track. To sum up: 'D: Interpretations of reality are the product of a social construction.'

The value aspect is pivotal in ethics and other areas of philosophy. To sum up: 'E: People should want what is good.'

Regarding normative social aspects, imposing values on others, for example the whole community, we enter the domain of the law. To sum up: 'F: The limits to what is good are set by rules.'

Of course, this characterization of perspectives (and certainly of associated disciplines) is too simple when forced into a simple matrix. Each scientific discipline can borrow elements from the other cells. In doing so, though, it is often clear that they reject some of their own principles and integrate some of the principles of other social sciences into their own set of considerations.

<i>Scientific Perspectives</i>	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.

Section 3: Explaining implementation with “Instrumentation Theory”

3.1 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 attaches 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: cooperation (active, passive or forced), opposition, and joint learning. 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. Forced cooperation is a form of passive cooperation that is imposed by a dominant actor. Opposition occurs when one of the actors tries to prevent application by the other actor. Joint learning occurs when only lack of information stands in the way of application. 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.

The 'likelihood of application' module is a special one, because it draws the attention to a phenomenon that is often observed, but seldom taken as a separate focus of attention, namely that under certain circumstances the policy implementation process doesn't get 'off the ground' at all. On the other hand many of the situations in which such a result is predicted are not stable. In such cases a dynamic will occur that after a while will result in another situation in which the implementation process actually will start off. This corresponds with the observation that this typically is a policy introduction problem (that can last for shorter but also for longer periods). Part of the dynamics can be seen as policy learning at the level at which the policy is formulated, or at the level of the implementing organization as a whole. We aim at including only the 'within case' dynamics in this version of the implementation modules. Still, this kind of dynamics can be expected to make a difference even at the case level, especially when the initial unfavorable

situation results from a lack of information rather than from a lack of positive objectives or power³.

Figure 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 3 can be read as: If application contributes positively to the achievement of the objectives of the implementers but not to those of the target group, and the positive actors' (here the implementers') information is sufficient, and their power position is dominant, then the interaction will be "forced cooperation" and the likelihood of application will be "very great."

Figure 1, *Likelihood of application*

Oi	Ot	I+	Pi	Sit.	Outcome	Process
+	+/0	+	—	1	++	Cooperation (O++ → active)
+	—	—	—	2	--	Learning towards 1
+	—	+	+	3	++	Cooperation (forced)
—	—	0	—	4	+/-	Opposition
—	—	—	—	5	--	Obstruction
—	—	—	—	6	--	None / Learning → 3
0	+	+	—	7	++	Cooperation
0	—	—	—	8	--	Learning towards 7
0	0/-	—	—	9	--	None
-	+	+	+	10	--	Obstruction
-	—	0	—	11	+/-	Opposition
-	—	—	—	12	++	Cooperation (forced)
-	—	—	—	13	--	None / Learning → 12
-	0/-	—	—	14	--	None

Oi = Objectives implementers viz. application

Ot = Objectives target group viz. application

I+ = Information for application of positive partner(s) (highest level)

Pi = Balance of power viewed from position implementer

3.2 *Likelihood of application: a résumé*

³ For instance, policy learning within an implementation case could also be that implementers change the instrument as they apply it, in order to decrease the amount of information that is needed for actual application. This would be in accordance with the 'bottom up' findings that a lot of the deviations found in practice are in fact attempts to make the most of it, rather than to limit the impact of the instrument.

The following are the assumptions on what types of interaction to expect under the various combinations of circumstances (between brackets the situations in the flow chart that rest on this assumption):

- (1) For any interaction to evolve, it is necessary that application of the instrument would contribute positively to the objectives of at least one actor (9, 14)
- (2) If application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, but the information of the positive actor(s) is insufficient to apply the instrument, than a joint learning process will evolve that will sooner or later create another situation (2, 8).
- (3) If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is insufficient, than there will initially be no interaction, but the positive actor will try to learn on its own and thereby to create another situation (6, 13).
- (4) If application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, than the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation (1,7).
- (5) If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, than the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation (3, 12). Dominance of the negative actor will lead to obstruction (5, 10). A relatively equal balance of power will lead to opposition (4, 11). Opposition can take the forms of negotiation and conflict.

Assumptions on what likelihood of application to expect with different types of interaction:

- (1) Cooperation will lead to a great likelihood of application.
- (2) Opposition will lead to an intermediate likelihood of application.
- (3) No interaction will lead to a small likelihood of application.
- (4) Obstruction will lead to a small likelihood of application.
- (5) Joint learning will initially lead to a small likelihood of application, but later to a situation with cooperation and a great likelihood of application.

Descriptions of types of interaction on likelihood of application:

- (1) Cooperation can take the forms of active cooperation, passive cooperation and forced cooperation. Active cooperation is when both the actors take initiatives and help each other to achieve the common objectives (here the application of the instrument). Passive cooperation is when one actor takes the initiatives and gets the requested assistance voluntarily from the other actor. Forced cooperation is a form of passive cooperation in which the other actor provides the requested assistance involuntarily.
- (2) Opposition can take the forms of negotiation and conflict. To what extent the one or the other will evolve falls outside the domain of the theory.

Negotiation is when both actors engage in exchange behavior seeking an agreement by which both actors will realize part of their objectives. Conflict is when one or both actors interact to prevent the other actor of realizing part of its objectives.

- (3) No interaction is when both actors abstain from any communication to the other actor that would be meaningful for applying the instrument(s).
- (4) Obstruction is when one actor ignores attempts to create meaningful interaction by the other actor.
- (5) Joint learning is when both actors seek to find meaningful information and share it with the other actor.

3.3 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.

The degree of correct application expresses to what extent the 'incentive value' or 'potential to influence the target's behavior' of the instrument (mix) remains in tact during the implementation. So it does not necessarily mean that all legal details are observed and the like. Though often deviations from the formal specification will mean some decrease of 'correctness' in the sense stipulated above, this need not be the case. If not so, for instance when implementers only adapt to practicalities to improve the efficacy of the instrument, this should not be counted as 'less correctness' in the way instrumentation theory conceptualizes this. Instead, it is quite possible that the form of instruments is changed somewhat to actually increase the originally intended 'incentive value'. This even might be a cause of dynamics when one analyzes the same process with a time interval, because for instance the adaptation might decrease the necessity for certain difficult to obtain information.

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 second main difference is there by definition. While the first module is about the likelihood the process leads to some form of interaction and application at all, the second module implies that there will be interaction and application in any case. That there will be some form of application, denies the possibility of a complete breakdown of the process over 'correctness' issues. This is not because we don't see that this actually might happen in reality, but because such a result should be predicted by the previous module of the theory. For this second theoretical module this means that even under rather unfavorable conditions one has to answer the question to what degree there will be some 'correctness' due to what I would label the 'dynamics of a process without an exit'.

The types of interaction that may occur at this next step in the process are to a certain extent different from those sketched above. This is because the degree of correct application involves a much larger number of elements. The issue, 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 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 application of policy instruments almost necessarily leads to interaction, so it will be impossible for the result to be "no" interaction, as in Figure 1. A distinction is made between constructive, but also obstructive, cooperation; negotiation, and conflict; and symbolic application, often accompanied by learning. Obstructive active cooperation occurs in situations where both actors stand to gain from inappropriate application. The same phenomenon can 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 "correct" application. In view of the many elements involved, it is useful to subdivide the interaction type "opposition" into negotiation and conflict. In the case of negotiation, 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 generally questions the legality of the instrument. Finally, with some combinations of circumstances the interaction type can be labeled "symbolic", since while the procedural 'form' of the instrument is strictly followed, the contents is very weak. Most of the times learning processes will in due course change such situations.

Figure 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. It bears repeating that the other variables often mentioned in connection with implementation processes, including the possible influence of the policy instruments themselves, enter into this theoretical logic by altering

values of one or more core variables; and their influence can therefore be considered in light of this explicit model.

Figure 2, Degree of correct application

Oi	Ot	I+/0	Pi	Sit.	Outcome	Process
+	+/0	+		1	++	Constructive cooperation ⁴
		-		2	--?	Learning towards 1
	-	+	+	3	++	Constructive cooperation ⁵
		0		4	+/>++	Negotiation / Conflict
		-		5	+/-	Negotiation
		-		6	--?	Symbolic / Learning → 3/4
0	+	+		7	++	Constructive cooperation
		-		8	--?	Symbolic / Learning → 7
	0			9	--	Symbolic
	-			10	--	Obstructive cooperation
-	+	+	+	11	+/-	Negotiation
		-		12	+/>++	Negotiation / Conflict
		-		13	++	Constructive cooperation ⁶
		-		14	--?	Symbolic / Learning → 12/13
	0/-			15	--	Obstructive cooperation ⁷

Oi = Objectives implementers viz. correct application

Ot = Objectives target group viz. correct application

I+ = Information for correct application of positive or neutral partner(s)

Pi = Balance of power viewed from position implementer

The implementation of a policy may also 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 might be to issue permits specifying certain regulations; a second step might 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.

In section 4 both flow charts will be transformed into a formula version, enabling in principle (as far as empirical data and estimates can go validly) intermediate values of the independent variables and predicted outcomes. But first we'll again specify the assumption of this module.

⁴ O++ will result in an active cooperation process.

⁵ This will be forced cooperation.

⁶ This will be forced cooperation.

⁷ O - - will result in an active (obstructive) cooperation process.

3.4 Degree of correct application: a résumé

Following are the assumptions on what types of interaction to expect under the various combinations of circumstances (between brackets the situations in the flow chart that rest on this assumption):

- (1) If correct application of the instrument would contribute negatively to the objectives of one actor and also negatively or neutral to the other actor, than obstructive cooperation will evolve. In case both actors are negative this will be even active (obstructive) cooperation (10, 15).
- (2) If correct application of the instrument would contribute relatively neutral to the objectives of both actors, there will be symbolic interaction (9).
- (3) If correct application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, than constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation (1, 7).
- (4) If correct application of the instrument would contribute positively to the objectives of at least one actor, but it / they have insufficient information for correct application, than there will be initially symbolic interaction, but also learning by the positive actor(s), leading later to other situations (6, 8, 14). In case the implementer is positive and the target is also positive or neutral, there will be hardly any symbolic interaction, but very soon a process of joint learning (2), the more so if the target is also positive.
- (5) If correct application of the instrument would contribute positively to the objectives of one actor and negatively to the other actor, and the positive actor has sufficient information, than the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) constructive cooperation (3, 13). Dominance of the negative actor will lead to negotiation (5, 11 – not obstructive cooperation since by nature of this module some sort of application will result anyhow). A relatively equal balance of power will lead to negotiation or conflict (4, 12).

Assumptions on what degree of correct application to expect with different types of interaction:

- (1) Constructive cooperation will lead to a great degree of correct application.
- (2) Obstructive cooperation will lead to a small degree of correct application.
- (3) Negotiation will lead to an intermediate degree of correct application.
- (4) Negotiation / conflict (opposition) will lead to a rather high to great degree of correct of application.
- (5) Symbolic interaction will lead to a small degree of correct application
- (6) Symbolic interaction with learning will initially lead to a small degree of correct application, but later to various other situations with other expectations.
- (7) Joint learning will initially lead to a small degree of correct application, but rather soon to situation 1 with constructive cooperation and a great degree of correct application.

Additional descriptions of types of interaction on the degree of correct application:

- (1) Cooperation can be constructive and obstructive. Constructive cooperation is when the initiatives and assistance are aiming at correct application. Obstructive cooperation is when these are aiming at preventing correct application on meaningful aspects.
- (2) Symbolic interaction is when certain (in)formal procedures are followed, without the content that would make them meaningful for correct application⁸.

3.5 Conclusion

In this section the two implementation modules of instrumentation theory were presented in their third version. Compared to the previous versions a considerable streamlining has taken place, making them among others even more consistently two sided, that is, making no difference in principle whether the driving actor is the implementer of alternatively the target group. Of course this doesn't imply an ideological stand point that this will occur evenly in empirical reality or should do so. It only makes clear that in principle policy implementation can be driven from either side, if the conditions are set right. But it does mark a choice for an acknowledgement of a basically bottom up perspective on the implementation process.

Since many – even most – theories concentrate on the relation and dynamics between the implementers and the 'higher' authorities (cf. Toorenvliet) as their main focus on the process, in Instrumentation Theory the implementation processes is above all conceptualized as an interaction process between the implementers and the target groups. The special position of government as expression of legitimate power and democracy is not sought in a sort of 'natural dominance' in the implementation processes' interactions (with the fact that this is often not the empirical reality as a repetitious 'eye-opener'). It lies in the fact that the more or less focused input of that process, the policy to be implemented, with its instruments and authorities and other resources for implementation, is a product of democratic decision making procedures. And it lies also in the expectation that in the longer term deviations from the policies set out may lead to a reform that makes these deviations less feasible. So the reality of the implementation process at a given time is part of political dynamics in a longer time perspective.

The kind of approach to causality (that was already implicitly present in the first version and made explicit in the second) is that phenomena are not caused by single factors, but develop from sets of conditions. In such sets some factors may have a stable presence for already a long time, while others are relatively new and are therefor commonly regarded as 'the causes'. Nevertheless in this causal set some of these conditions are as essential as these recognized drivers. Also other sets of older and newer conditions can

⁸ An example could be control visits to companies that hold a permit, just 'to have been there' and being able to count the visit in the statistics of the agency's performance.

lead to the same effects. On the other hand the same relatively new 'drivers' can have no effect at all when other conditions are lacking. This view on causality is expressed by the British philosopher Mackie (1974, so-called 'INUS' conditions), but is in effect already as old as Hinduism and Buddhism. The idea of complex sets of mutually interacting causal conditions makes it possible to translate the basic social systems idea of [inputs → interaction process as transformation → outputs] into a more formalized theory. Now we'll move that one step further.

Both flow charts have in their outcomes an interesting bias, that was present already more in the second version than it was in the first, but is now almost complete in the third. That is that the outcomes of the situations tend to be extreme. The simpler the scheme (with less institutional variables involved and more straightforward reasoning) the more extreme the results. More intermediate outcomes, that are often observed in reality, would only result from the possibility to accept more intermediate variation on the independent variables. This is only one reason for trying to reformulate the theory in a formula version. In this way all kinds of intermediate values of the independent variables can be accepted and lead still to a predicted outcome. This will be the challenge that is met in the next section.

Section 4, Developing a reformulation of the modules in the form of formulas

4.1 General principles

The relationship between the three main variables, the dual one of the objectives and the information and balance of power variables, can take many forms. The two most common ones are additive models and multiplicative models, or combinations of both. The underlying models in both modules are primarily based on multiplicative relationships of the three main variables. The models are however nonlinear and contingent. When one or more main variables assume certain values, the values of the other circumstances no longer influence the result of the process, or do so to a lesser degree (Bressers & Klok 1988: 26).

The main relationship is multiplicative, since lack of positive motivation cannot be compensated by more information or the other way around. Nor can a lack of positive motivation of both sides to apply the instrument anyhow, be compensated by extra power. In other words: these factors are not exchangeable in order to get to an 'optimal' result of full (correct) application. There are exceptions though. The balance of power for instance is only relevant is as far as there are negative motivations confronting the positive ones of the active actor. Furthermore is not so that always the objectives and information of both sides are relevant, like the following section will clarify. Rather than a simple multiplicative model in which every deviation from

optimal values has an immediate effect on the results, the model is restricting this effect to certain factors, given others.

Furthermore the model is not multiplicative in the sense that the implementation process is subdivided in many sub-processes, each needing conclusive and authoritative decision making, multiplying each deviation from the original set up (cf. Pressman & Wildavsky 1973). In stead, I hold that during the course of the implementation process many chances to 'repair' earlier less than 'optimal' choices occur and are actively sought by the participants, both to increase the level of (correct) application and – sometimes – to frustrate it. Instrumentation Theory seeks to include and predict this 'within case' (or: 'within process as defined') dynamics. To put it otherwise: the difference is that here no sequence of veto-points is supposed, but a combination of (conditionally relevant) factors in a set (cf. INUS causality, e.g. the combination of heat, fuel and oxygen as a cause for fire).

To work with the variables in a multiplicative model leading to an outcome that predicts the degree to which the instrument is (correctly) applied, it is necessary to transform the variables to a ratio level. More specifically, the variables will be transformed to values of 0 to 1, with a meaning that could also be expressed as 0% to 100%. The resulting outcome then also can be expressed in terms of 0% to 100%, presenting the probable likelihood of application or the degree of correct application of the instrument.

Multiplicative models of this sort easily lead to very low outcomes. This is even the more so since also the relationship between the 'likelihood of application' and the 'degree of correct application' is by nature a multiplicative one. It is a warning in advance not to be tempted to estimate the independent variables to 'conservative' or even 'cynical'. In fact this corresponds with the observation that even well meant and rather well equipped and managed cases can show disappointing results. The outcomes contain the accumulation of all imperfections that were not changed in the dynamics of the process.

4.2 Likelihood of application

Motivation

In the sphere of the objectives there are two core variables. But the impact that these two have in the flow chart can almost completely be captured by the strength of the motivation of the positive partner. With the right information and power the influence of a negative motivation of the other partner can be wiped out completely, making full application still possible. But without any positive motivation of any of the actors there would be no likelihood of application at all, even not if the other partner is (also) neutral. So the only variable that will be included in the formula at this point is the degree of positive motivation of the (most) positive actor. This factor can have values from 0 to 1, since if it would be less than 0 there would not be a positive actor and hence the value would still be zero, leading to no likelihood of application.

O+ (0.0 – 1.0) = Degree of positive motivation of positive actor

Information

The effect of the information variable in the module is rather straightforward. In as far as the positive actor has not all the information that is necessary this factor will harm the outcome. When also the other actor is to some degree positive the estimation of the amount of information available for the application can be complemented with that.

$I+ (0.0 - 1.0) =$ Completeness of needed information of positive actor(s)

Power

The effect of the balance of power needs a little bit more complex term. In the first place power is only relevant when there are really divergent objectives. In principle the distance between the two objectives could be a factor here. But that would not be in accordance with the hypotheses and our expectations. The distance between a very positive implementer and a slightly positive target group could be as large as between a fairly positive implementer and a fairly negative target group. Nevertheless it isn't hard to see that power is much more important in the latter case.

In fact the relevance of power (cf. Arentsen & Bressers, 1991) depends in the hypotheses on the negative motivation of the negative actor. Note that this also implies that at this spot the second 'objectives' core variable enters the equation and so is not left redundant in the formula formulation. Without any negative motivation the relevance of power is zero and the value of the factor term should be 1.0, leaving the outcome fully in tact. So the power factor will have the form: $1.0 - [\text{relevant negative power}]$. This also implies that different from the flow chart version, in the formula the balance of power should not always be viewed from the perspective of the implementer, but from the perspective of the negative actor, which is different in case the target group is the negative one.

Even if both partners are negative or almost neutral this factor will have a value, though there will be no use of power at all. But because of the lack of a positive motivation there will be already a zero in the equation, making this factor mathematically irrelevant anyhow. This could be seen as not elegant. But in my opinion it reflects a genuine 'negative overkill' of such situation, in which even with a change to somewhat more favorable conditions in terms of a motivation of one of the partners, changing to (somewhat) positive, another drawback would occur in the form of the power of the other negative one.

$(1.0 \text{ minus } O- \times P-)$

$O-$ (0.0 – 1.0) = Degree of negative motivation of negative actor

$P-$ = Balance of power viewed from the (most) negative actor.

(0.0 = negative actor has no power)

(0.5 = balanced power)

(1.0 = negative actor has all power)

The formula can than be written as:

$$\text{Likelihood of application} = O+ \times I+ \times (1 - O- \times P-)$$

When the situations of the flow chart are entered in this formula, they all result in corresponding outcomes. The typology of the process and its dynamics is however lost in the formula. For these aspects the initial flow chart still holds its value.

4.3 Degree of correct application

The structure of the flow chart for this module is almost the same as for the one on 'likelihood of application'. The only difference is that situations 9 and 10 are split, nevertheless leading to the same outcome, but with different process characteristics. With one major exception also the outcomes are the same. The major exception is that when power comes in the hypotheses, lack of power doesn't lead to zero result, but to a mixed result. And balanced power doesn't lead to a halfway result, but (depending on the conflict or negotiation process character) to a big or very big degree of correctness.

Another difference with the 'likelihood of application module' is also already incorporated in the flow chart, namely that the information variable is not measuring the information of the positive, but eventual also that of a neutral partner when that is the most positive. Of course for the formula version this is not so important since in the equation the information factor will be multiplied with the degree of positive motivation of the most positive partner. When that nears zero, then the relevance of the its information level also near zero. On the other hand, even a slightly positive partner will be regarded 'positive' in the formula for 'likelihood of application'. So in the formula version the difference between the two modules in this respect in practice disappears.

The formula predicting the outcomes in the 'degree of correct application' module thus can be written as follows:

$$\text{Degree of correct application} = O+ \times I+/- \times (0.5 + (1.0 - O- \times P-) / 2)$$

The 0.5 constant in the equation can be interpreted as follows. In as far as anyone wants correct application and has some information that is needed for it, the dynamics of a process without an exit option (by definition leading to some form of application) will provide the opportunity to attain half of that even if power lacks completely. Of course this implication of the hypotheses, that are still in accordance with the second version, can be the subject of further dialogue. One could reason that here not so much the drive of the dynamics of the process plays a role, but the implicit contents of the variable. Could there be 'power' by anticipation or by support from outside (courts for instance) or could there be extra legitimacy in such a process (than there was perhaps more 'motivation' (positive objectives) than was supposed)?

4.4 The special role of the objectives of the implementing authorities

Many theories of the implementation process picture the factors leading to the motivation of the implementing authorities and connect them directly with the implementation results. Since we emphasize the interaction process character of implementation we want to include the motivation of both the implementer and the targets. Nevertheless in this section we will in first instance only deal with the objectives of the implementers⁹.

It is also at this spot that the link with the body of implementation literature that deals with formal and informal discretion is obvious. While in the relationship with the policy makers actual discretion is phrased in terms of what the implementer is able to do, in the relationship with the targets it's a factor that influences what the implementer intends to do.

When thinking of the objectives variable (the intention to – correctly - apply the instrument), one should keep in mind furthermore that it is not about the legal detail, but about the degree to which the incentive value of the instrument remains in tact.

Earlier above I stated that it is one-sided of much of implementation literature to devote so much attention to (lack of) discretion. Positive intentions of implementers are neither self-evident nor unimportant. It is too meager to confine them to a 'lack of incentive to deviate'. However, that doesn't mean that there is no place for the kind of motivation that is forced by a higher level (e.g. policy makers). After all policy processes, including implementation, are increasingly influenced by *multi-level arrangements*. The discussion on 'discretion' can be seen as a predecessor of this topic, be it maybe a one-sided one. As far as positive intentions of the policy implementers are lacking, in the multi-level arrangement in which most implementation processes are embedded, (factual) discretion can play an important role to lift the overall O_i to a more adequate level. So a combination of both theories (and – in fact – bodies of literature) would be preferable when crafting our own sub-theory on the O_i core variable.

The basic principle then would be that the intention to apply the instrument (correctly) of the implementer O_i , would be the combination of the positive own intention plus the impact of the (lack of) discretion on the remainder: the difference between the full intention ($O_i = 1.0$) and the real intention. The influence of the self-effectiveness factor (cf. Bandura 1986) on the positive intention is in fact mirrored by the influence of the discretion. It too can be viewed as a sort of self-effectiveness expectation, but than about the ability to deviate rather than to comply with the behavior. So it makes sense – at least it is elegant - to treat these factors the same way.

The own intention could than be written as:

⁹ One of the factors relevant to the objectives of the targets might be expected to be the risk of freeridership by other members of the target population. There might be dynamic effects here stemming from the observed initial response (cf. Bressers 1989).

$$M - M+ \times (1-S)$$

M = own motivation, not the product of deliberate restrictions on alternative behaviors, f (attitude towards application of instrument, arousal regarding policy problem, expectation regarding contribution of application to problem solving)

M+ = positive motivation (> 1.0), since a negative motivation would not urge to action and hence make S unimportant

S = self-effectiveness expectation

I realize that in this way the 'self-effectiveness expectation' is a multiplicative factor in the formula as far as M is positive. With a little algebra it's plain to see that in that case the partial formula above is the same as $[M \times S]$. The support from literature for its importance can support this. But one should remember that in the complete formula also I and P are multiplicative terms, with a meaning that comes close to the 'objective' status of what the self-effectiveness expectation measures in purely subjective terms. So one should be sure only to capture the impact of S on the intention of the implementers. Whether this is doable in empirical testing of the theory should be a point of attention. Here it is left as it is, because of the theoretical logic.

The impact of (a lack of) factual discretion D on this could now be written in a similar way, but having a positive effect on overall O_i :

$$+ (1 - M) \times (1 - D)$$

D = factual discretion, not only the formal one, f (reputation sensitiveness, the importance of the deviation to the implementers and their sensitiveness to controls (fear to be sanctioned). The both institutionalized and ad hoc pressure to be loyal from policy makers influences the 'reputation sensitiveness' and also – in practice in Torenlid 1996 – proved to influence the fear to be sanctioned, the 'sensitiveness to controls'.

So, lack of discretion can be seen as a 'fixer' that 'repairs' insufficient own motivations as far as it goes. The formula for the complete core variable writes as:

$$O_i = M - M+ \times (1 - S) + (1 - M) \times (1 - D)$$

Note that the 'repair' capacity of a lack of discretion is not applied here to the part that is due to lack of self-effectiveness expectation. The idea is that in as far as one has no intention to do something because one thinks it is undoable, outside pressure alone won't suffice to alter this intention.

On the other hand, when M is negative, $(1 - M)$ can actually be as big as 2 ($1 - (-1) = 2$). With a complete lack of discretion ($D = 0$) the formula would be $O_i = (-1) - 0 \times (1 - S) + (1 - (-1)) \times (1 - 0) = 1$. Or in words: in these extreme circumstances the lack of discretion would fully compensate the lack

of own motivation. Of course in actual reality discretion will never be completely lacking.

Note also that as far as lack of discretion does 'repair' O_i , not again the self-effectiveness expectation is brought back in the equation. Of course one can imagine the situation that implementers don't like to apply the instrument (correctly), but feel they cannot but do so, though they're not confident about their capacities at all. In as far that this is de-motivating in practice that would be captured by the 'the importance of the deviation to the implementers' in the function of D (see above). In as far as that it is a real matter of fact, it will show up with the I and P variables.

Section 5, Compensation payments as an incentive instrument: An empirical illustration

5.1 Introduction

Subsidies are generally regarded as 'tricky business' in environmental policy. The internationally (e.g. in the OECD) accepted 'Polluter Pays Principle' denies the legitimacy of countries paying companies to pollute less. Nevertheless the 'exceptions-to-the-rule' are abundant. This section analyses the implementation of a compensation scheme that was in operation in the Netherlands during the second half of the seventies and most of the eighties.

The compensation regulation in the Air Quality Act had two main purposes:

- (1) preventing the disturbance of competitiveness by 'above normal' demands prescribed in permits;
- (2) stimulating lower authorities (implementers of the permit scheme) to abandon too much restraint considering economic consequences for the firms, when they have to consider special environmental conditions (e.g. concentrations of pollution or extra vulnerability of the environment).

The idea was that both implementers and targets should be stimulated to issue and accept more tight requirements than usual for that particular kind of industry, when environmental conditions deemed that necessary. And that the particular firm should not be confronted with loss of competitiveness in such situations. We will leave the question open whether this regulation has been conflicting with the Polluter Pays Principle or not, and concentrate in the next subsections on the correct implementation of the scheme.

The implementers of the regulation are the authorities that are responsible for licensing. These were the Dutch provinces for large companies and municipalities for lesser ones. In the course of the permit giving process the possibility offered by the compensation regulation could be entered into the discussion by either side. Formally the application had to be filed by the company. The implementer could in principle decide itself whether or not a compensation should be paid, but for reasons of budget control – and possible implementation control – these decisions should be approved by the

Ministry at the national level. Nevertheless we will regard the municipalities and provinces that had to follow the procedure and make up the decision as prime 'implementers'.

By the end of the eighties this regulation was analyzed with the help of the first version of Instrumentation Theory (Grimberg, Bressers, Klok & Steenge 1989). In this section this empirical test of the first version of the theory is revisited, re-interpreting it with the third version of this working paper. Because the original study did not use intermediate values of the variables, it is not possible to try the formula versions of the theory. In stead the flow charts of the third version will be used.

The study was based on an extensive research in the paper files on each of the 67 cases of application, resting in the Dutch Ministry for the Environment. The main researcher, Grimberg, spent a few months in doing so in the course of this half year project, funded by the Dutch Committee on Program Evaluation (installed by the Minister for Education, Culture and Science). Before this study he had already done a one year study on the same topic, funded by the Ministry for the Environment, that time concentrating on the question whether indeed competitiveness of the firms involved remained in tact.

First some remarks on effectiveness and general application. The study concluded that of the 62 cases for which sufficient information was available in 29 cases a stimulating effect of the regulation was likely (more demanding conditions than otherwise would have been imposed), while in 25 cases this was unlikely and in 13 case doubtful. In 43 of the 62 cases the criterion of 'above normal requirements' was applied, in 19 cases this was not the case. In these cases the payments were transferred without this criterion, a clear example of what in Instrumentation Theory is labeled 'incorrect application'.

When the criterion of 'above normal requirements' is not applied correctly the practice of the regulation is not only a clear violation of the Polluter Pays Principle, but also the 'effective ingredient' is taken out of the instrument. Because, when it proves possible that 'compensation' is obtained for 'normal requirements, this won't stimulate the implementer to go for farther reaching environmental goals, even when indicated by the local circumstances, and neither will it stimulate anymore the firms involved to accept those. So, the correct application of the regulation is essential for its envisaged efficacy.

5.2 The analysis of implementation

The first version of the theory distinguishes between "likelihood of sanctions" and "maintenance of form" aspects of implementation. In the study the "likelihood of sanctions" aspect is further divided in an 'acquirement'- aspect and an 'enforcement'-aspect. This leaves the "maintenance of form" aspect to be interpreted as the degree of correct application. (Note that here an important shift from the first to the second version of the theory is already made!)

The 'enforcement' aspect is deemed not to be discriminating, because payments are only made after the reports of external accountants have been received. The 'acquirement' aspect (cf. likelihood of application) is analyzed rather straightforward. The assumptions are that implementers have no reason not to like using the fund for compensation payments, since the budget comes from the Ministry and is already made available. Targets, who even asked for it themselves, have certainly no reason to dislike getting the payments, that in all cases were much higher than the hassle of acquiring them (mostly between Euro 100,000 and 5,000,000). The information of both implementer and target can be relevant in such case, leaving ample opportunity to gather the necessary knowledge about the existence of the regulation and the first steps to apply for it. This leads to situation 20 in the likelihood of sanctions hypothesis flow chart of version 1 (see appendix 1) and situation 1 of the likelihood of application flow chart of this version (see section 3.3), both predicting a high likelihood. Of course a file research on cases that do have received compensation payments also wouldn't have been an appropriate way of studying the likelihood of application.

The files on the cases of application were not always 'neat and tidy'. While containing large amounts of correspondence, notes of meetings, plans etceteras, some were incomplete. Of the 67 cases, in 5 cases it was not possible to gather enough reliable information to be able to assess the values of the core variables. For all the remaining 62 cases the values of all or most of the core variables were determined. In only 29 cases this could be done satisfactory for all relevant variables. In 33 cases the information basis in the files was too weak and one or more of the variables could not be determined conclusively enough to enable a choice between one of the dichotomous values of the theory. In a number of cases however that didn't mean that these cases are useless for further analysis. That is especially so when the different situations that remained open by keeping both values of one of the core variables undecided, lead to (more or less) the same prediction. In this way 46 cases could remain in the analysis. These 46 cases were divided into four groups with (rather) similar characteristics.

The first group consists of 13 cases in which the priority of the implementers was regarded as low, their discretion as high (the Ministry was not critical and didn't correct the implementers) and the resistance of the targets as high (9 times), low (3 times) and in one case unclear. In the first version this lead to situations 1 and 5, both predicting little 'maintenance of form' (disregarding the 'above normal' criterion). In this version of the theory lack of discretion is seen as a possible 'repair' of lacking own motivation of the implementers. Since discretion was actually high in these cases, Oi is regarded as low. Assuming that the targets might differ in terms of resistance against the application of the criterion (values '-' or '0'), but in any case are not actually striving themselves for its correct application (value '+'), this means that situation 15 is applicable, also predicting a low degree of correct application.

In practice indeed 12 of 13 cases corresponded with the prediction. The criterion of 'above normal requirements' was not seriously applied at all. In one case, a furniture factory, this has been done initially. But after the amount of compensation was determined the firm decided to install cheaper

equipment nevertheless. Though the amount of compensation was also lowered when this became known, the new equipment was not again evaluated against the criterion. In fact it's unlikely that the actual equipment was 'above normal' in any sense.

The second group consists of 4 cases in which the resistance of the targets is determined as low, the priority of the implementers is also seen as low, but their discretion too. Also the information level on both sides is determined as low. In the first version this leads to situation 2 with a prediction of a degree of 'maintenance of form' of 4 on a 6-point scale. In this version of the theory the low discretion could be regarded to 'repair' the low priority of the implementers, resulting in a high O_i . Low resistance could be interpreted as $O_t = 0$. The low degree of information would then lead to situation 2 that predicts an initial low degree of correct application, but also some learning towards situation 1 that is more optimistic.

What actually happened in these four cases is the following. In three of the four cases the empirical assessment concluded that the criterion of 'above normal requirements' has been correctly applied. However, this has not been done by the de-central implementers, but by the Ministry itself. In the light of the obvious lack of information (and some disinterest) of the implementers, the Ministry that formally only had to approve proposed decisions, more or less took over during the cases. In the fourth case the implementers apparently used an unclear and mistaken way of calculating the amount of compensation (avoiding the hassle of assessing the 'normal' requirements in the case involved). When we compare these results with both versions of the theory, the '1 failure, 3 successes' seems to correspond with the first version prediction of 4 on a 6 point scale. But the prediction of the third version of 'low degree of correctness, but likely *learning* into a more productive situation' also has come true and is a more informative description of what actually happened. Of course the learning here applied less for the initial implementer (municipality or province), than for the multi-level combination of authorities, that includes the Ministry as controller.

The third group consists of 19 cases in which the situation is rather optimal. The implementers are motivated¹⁰, the resistance of the targets against strict application is regarded as low, and information is no problem¹¹. In the first version this leads to situation 12, in the new version to situation 1. In both versions an adequate degree of correct application is predicted.

Reality confirms this prediction to a high degree. Of the 19 cases 17 can be regarded as conform to the prediction. The two exceptions are the following. In one case the local implementer applied the criterion, but made a calculation mistake in doing so that gets through, unnoticed by the Ministry. Also in the other case the municipality tries, but fails to apply the criterion

¹⁰ As is shown in the files, almost all the cases are firms that cause hindrance in nearby residential areas. Implementers have an incentive to take no risk of delay and live up to the specifications.

¹¹ Most of these cases stem from the later period in which a note of the Ministry summarized in detail what should be the specification form the criterion of 'above normal requirements'. Furthermore preliminary talks with officials of the Ministry became habitual in this period providing the local implementers with additional information.

rightly. In hindsight one can doubt whether these two cases are rightly considered as cases where enough information was available. If one includes the information processing capacity in the concept – as we tend to do – than this was not the case.

The fourth group is a little more complex. It consists of 10 cases with very different characteristics. They are joined in one group because they all are predicted to have a high degree of maintenance of form (5 or 6 on a 6-point scale), without having the ‘all ok’ characteristics of the third group. In fact seven different combinations of circumstances occur with these cases. The following list gives an overview.

Table 5.1, Determined situations and predicted outcomes group 4

First version (see appendix 1)		Third version (see section 3.3)		Number Of cases
Situation(s)	Outcomes	Situations	Outcomes	
4	6	1	++	2
9	5	3	++	1
3 / 4	5 / 6	1	++	1
4 / 12	6 / 6	1	++	3
3 / 4 / 11 / 12	5 / 6 / 6 / 6	1	++	1
21 / 28	5 / 6	3	++	1
21 / 24 / 28	5 / 6 / 6	3 / 4	++ / +/++	1

In all these 10 cases the criterion of ‘above normal requirements’ was indeed taken seriously. When we compare both versions of the theory it is apparent that the third version discerns far less different situations. Reasons for it are that a high O_i can be based on both own motivation and on low discretion, and that there is only one power variable and one information variable in the hypotheses flow chart. Nevertheless comparable outcomes were predicted. These predictions correspond with empirical reality.

5.3 Conclusions

All in all we can conclude that there dependent variable showed indeed variation, as one third of the cases were assessed to be cases with incorrect application of an essential element of the regulation. The division of these outcomes over groups of cases with similar characteristics was shown to be matching the predictions not perfectly, but nevertheless to a very high degree. This was true for both the first and third versions of the theory. Also the more streamlined model of the third version proved able to generate the right expectations.

Section 6, Outlook: The relevance of the implementation of policy instruments for sustainable development

In the above sections a theory on the implementation of policy instruments is unfolded and illustrated. Why paying so much attention to this topic in a project on sustainable development? I realize that this subject might seem at first glance a bit out of phase with the discussion on sustainable development. The discussions on the politics of sustainable development emphasize overcoming dilemmas of values, or building international institutions, and empowering local feelings of embeddingness in one's own heritage or creating new partnerships between public and private decision-makers, and between them and NGO's. Compared to these debates the discussion about the implementability of policy instruments seems almost sterile. But I'm convinced it's crucial.

The challenges of sustainable development as a public (societal and policy-) objective I believe to be basically threefold (cf. Bressers & Rosenbaum 2000: 532-536). *Normatively* (values) the legitimacy of the policies and the societal changes is insecure, since the ecological rationality differs in many respects from the rationalities we have learned to accept and even combine (Lafferty 1996, Dryzek 1987, 1997). From the perspective of these latter rationalities sustainable development urges a lot of idealism (Lafferty, intro to the Rondo meeting). *Cognitively*, because of several characteristics of many environmental problems, not only the problem assessment but also the policies and the societal changes to counter them are "plagued with uncertainties" (Bressers & Rosenbaum 2000). For a large part this is related in two directions with the fact that the input in the political system and society in general comes "from outside-in" (Lafferty, intro to the Rondo meeting). Not unrelated to the two previous ones, but neither included in them is the challenge of building enough *capacity and power resources*' bases to be able to initiate and stabilize changes.

Most of the sustainable development related debates on 'steering capacity' do not pay much attention to the implementability of policy instruments. On the contrary: almost all attention goes to new modes of steering. Negotiated agreements between governments and organized target groups; visionary green planning giving society an outlook to the future, 'transition management' for systemic innovation; joint 'target seeking' learning processes, implying giving up governments position as principal or even 'principal among equals'; not to mention the economic science mission to make ecological values apt for incorporation into the market mechanism: all contribute evidence that the sustainable development problematic has been a cradle of creativity for innovative steering devices. And for good reasons and with interesting results.

Many of the new strategies set out to change values and cognitions. And this makes sense. When profound changes are needed, modifying symptoms will often be ultimately counterproductive, as deeper causal factors will 'fill up' any space created by them. 'Going to the roots' is an inevitable part of any adequate strategy. But when one analyzes these approaches the same

conclusion becomes apparent as Lennart Lundqvist (2001, paper for the Susgov meeting) reaches in the case of management by objectives. This is that, while an approach is innovative and promising, or even empirically proven helpful, it will always be in need of a follow up were the results of the arrangement are translated into individual requirements or be guarded against the erosion of the newly established collective good will.

Often then these corner stones prove to be rather well known tools from the old-fashioned toolbox metaphor. Subsidies with conditions, information and advice, contracts, translations of sector agreements into permit conditions, rights for the public to appeal against decisions in court or to get sensitive information, fees and tax reforms, monitoring and sanctioning of free-rider deviations, etceteras, fill and follow the new steering approaches. Also in cases that such devices aren't implemented by public authorities, but by own target group organizations, the implementation problematic is not really different, and surely not dissolved. The results of these devices and their implementation are not only important in itself, but are also crucial for the potential of the innovative strategies in a next round. Since all new strategies depend on iterative or continuous processes, initial good prospects are vulnerable without due implementation processes that translate commitments and agreements into individual responsibilities and guard compliance.

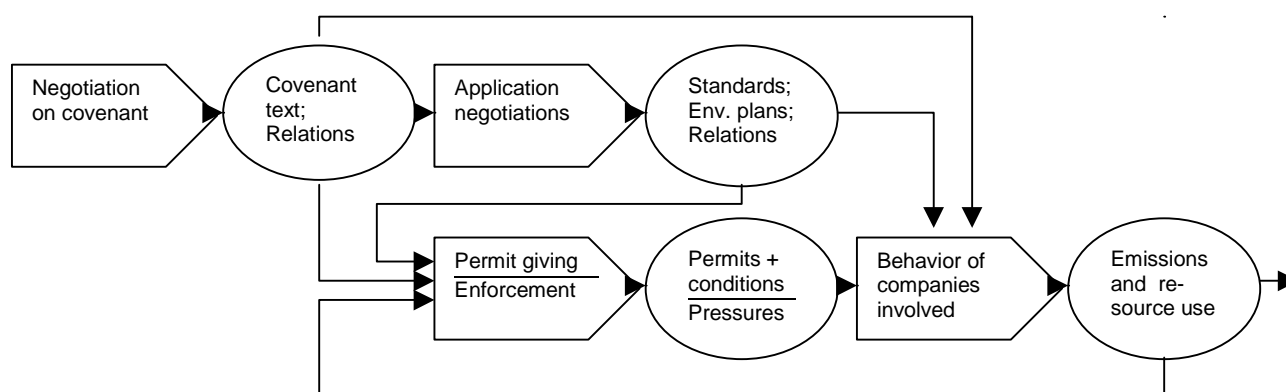
In the remainder of this section I will explore the relationship between one of these innovative strategies and the implementation of policy instruments. The strategy to be dealt with is the Dutch negotiated agreements, or: covenant, approach (cf. Bressers & Plettenburg 1997, Brand, Bressers & Ligteringen 1998, Glasbergen 1998). This strategy has attracted much attention in other countries, among others because it was very influential when the EU Fifth Action Plan for the environment was written. All European member states were more or less invited to 'do it the Dutch way'.

The most well known elements of this strategy are the negotiated agreements (covenants) themselves. Often they are regarded as a sort of stand alone instruments, that would lead the firms of a specific sector to adjust their environmental behavior. But this is in most cases not a correct view of the instrumentation strategy at all. In almost no cases the covenant replaces other forms of steering, and in many cases it's not the only instrument that regulates the bulk of the targeted behavior. A logical and important reason is that of scale differences. While most covenants are concluded between national authorities (provinces and municipalities often participating in the negotiations by their representatives of the national associations of respectively provinces and municipalities) and national associations of the industrial sector(s) involved, the environmental permit system is aiming at individual companies and the negotiations leading to a permit are at the local or provincial level. Of course this doesn't mean that the results of the covenant negotiations mean nothing without being fixed in permit conditions. Only that for individual companies it is often hard to see what their specific contribution should be and for the implementers of the environment law (provinces and municipalities) it is hardly possible to force compliance without previously issuing permits with conditions that are inspired by the covenant.

Moreover, also the covenant itself is often accompanied by an 'implementation' scheme. In many cases the covenant needs further specifications and a follow up committee is installed. This committee consists typically of representatives of the parties that concluded the covenant (but often of a somewhat lower administrative status). It is attributed with the task to both guard the application of the covenant in practice and negotiate further on the specifications (note that often without such specifications individual companies and permit givers do not really know in many aspects what could be expected from them).

The figure below shows how the different processes and their results are connected.

Figure 3, Partial process model of implementation in a negotiated agreement strategy



In the above figure the interaction processes are shown as open arrows and the resulting outputs – inputs for follow-up processes as ovals. For sake of simplicity the figure doesn't show the set of actors that are interacting in each process (would be shown as rectangles in this method).

What processes can be labeled "implementation" in this overview can differ. One might argue that all are, since they all implement the Dutch environmental policy and its green plan. And indeed they all could be regarded as transformations of a more or less focused input into more specified and detailed outputs. The degrees of freedom are however closing down somewhat at each step. Also the formal powers of the actors from the government side are deliberately kept small in the first two processes, as they do not use formal legal powers. The chances for a primary and secondary covenant negotiation processes to succeed depend more on a set of favorable or unfavorable conditions (Brand, Bressers & Ligteringen 1998). Such conditions are:

- whether there was already a tradition of co-operation between the relevant actors, and mutual respect and trust in 'fair play',

- whether a joint problem awareness existed or an awareness of joint chances (both for instance can be partly due to a vulnerable image of the sector for its consumers),
- whether there was a credible alternative threat (the 'big stick at the door-post'), and
- whether there were well developed institutional interfaces, like strong representative organizations of industrial sectors (Bressers & Ligteringen 2001) and communication platforms.

Such factors influence the objectives, information and relative power of the parties in these negotiations.

The primary and secondary covenant negotiations don't produce only agreements with a direct influence on environmental behavior, like general standard setting and more operational specifications. They also have an effect on the relationships between the actors and on other resources (more shared readings of reality, joint learning of relevant information) that might improve the basis for future iterations of the processes. And both types of outputs influence not only directly the behavioral choices of the targets, but also the follow up implementation processes of permit giving and enforcement. Below I'll try to summarize the effects that could be expected from the application of a negotiated agreement approach, following the variables of the instrumentation theory.

Let's start with the behavioral choice process of the targets. Other things being equal (permit-giving and enforcement and their outputs; external conditions), the idea behind a negotiated agreement approach is that the three core variables will be more favorable towards compliance with the goals and measures agreed upon.

This holds for their motivation (objectives) because it can be expected that:

- there is more acceptance of the agreed upon environmental goals and measures, since their 'own' representatives have agreed upon these outcomes for at least some good reasons (e.g. avoiding worse direct regulations), and were taken seriously in the negotiations ('living up to one's word')
- there might even evolve a social norm among companies to disapprove non-compliance as unfair freeridership, rather than as 'smart business'
- the agreed upon goals and measures are more cost-effective since the exchange filtered out costly measures that wouldn't proportionally benefit the environment and because generally a fairly long time horizon will be agreed upon (with the benefits of possibly some delay, but in any case the possibility of temporization – adapting to ones own investment cycle – and risk minimization by more certainty on future government policy)
- the targets did become better aware of their contribution to environmental problems by the information presented to them during the negotiation process (less 'denial' in motivational terms) and the usefulness and feasibility of the demanded measures to do something about it (self-effectiveness expectation in motivational terms).

It holds for their relevant information ('knowledge for action') because it can be expected that:

- sector organizations will provide help and information on how to deal with the agreed upon goals and measures, leading to collective learning
- external organizations will provide help and information on how to deal with the agreed upon goals and measures, mainly due to the sector-wise character of the approach, which makes the sector an attractive target for consultancy and engineering firms
- measures that demand much yet unknown knowledge will be filtered out by the negotiation process (unless a major technological break through is seen both as a necessity and a feasible challenge – but in such a case individual firms will not be left to their own devices).

It holds for their relevant capacity / power because it can be expected that:

- the sector will be less confronted with excessively expensive obliged measures
- in the context of the sector-wise approach new relevant behavioral possibilities and facilities for them will be developed (e.g. a joint collection and recycling system)
- individual firms will get more freedom to choose their own measures in detail as long as they comply with the applicable goals of the covenant (in practice they often are invited to draw up their own environmental business plan), so their obligations and resources can be better matched.

Of course this comes at a price. Firstly, it is obvious that the contents of the agreed upon goals and measures might be not only less demanding, but also in real terms less beneficial for the environment. In how far the original environmental goals, let say from the green plan, are watered down depends on the negotiation power of the government (e.g. the conditions mentioned). Secondly it is uncertain whether the qualities of the permit-giving and enforcement processes are really unaffected. They might even improve, but also be hampered. To shed some light at this I'll analyze the core variables below.

The 'embeddedness' of permit-giving and enforcement in a negotiated agreement strategy on the national level might improve its performance by the following expected influences.

Objectives of implementers

The implementers will feel the back-up and support of agreed upon goals and measures on a somewhat more general level.

Objectives of targets

The targets know that on a sector level agreement is reached on goals and measures and will feel less resistance when these are made concrete at the individual level.

Information of implementers

Due to the information exchange during the covenant negotiations a lot more about the production processes, their environmental impacts and the possible measures is known, than would be without these.

Information of targets

The information by the sector organizations (e.g. in its journals) makes the companies better aware of their impacts and the behavioral alternatives.

Balance of power

In the balance of power the implementers can make good use of the sector's commitment to the agreement, to convince the target that it would be an outlier that could also be confronted in the realm of the secondary, covenant implementation, process if it doesn't cooperate. In the course of enforcement it could give the implementers more – envisaged – support from judges, while there will be more clarity about the reasonability of the standards. The targets will have less opportunity to use lack of information as a basis of power.

On the other hand, there are also some reasons why the efficacy of permit giving and enforcement could be hampered in the context of a negotiated agreement approach:

Objectives of implementers

The implementers from lower authorities might be frustrated by the fact that 'their' task has been taken largely out of their hands by the negotiation table at the national level. It could decrease their sense of responsibility for the task (that typically evolved not much earlier than the nineties), especially with the sectors that conclude a national covenant with the ministry.

Objectives of targets

The targets can get frustrated by what they experience as 'double steering', with often far from perfect matches. Typically the negotiated agreement leaves ample room for own initiatives and encourages companies to become frontrunners. Such a company might meet municipal implementers that on e.g. sound hindrance demand every detail of the old regulation, while discarding that the same company might be leading the field in the core of the environmental problem of the sector, e.g. avoiding toxic substances in its production process. This then might cause a break down of all the goodwill, build up through the 'consensual' approach. A similar effect occurs when the implementer deems a higher environmental performance necessary that the covenant agrees upon.

Information of implementers

While the covenant negotiations are pending, there is a high degree of uncertainty about the resulting goals and measures. In the meanwhile the implementers cannot do very much. This can even take a very significant period when also the results of the secondary covenant process, are essential to understand how to translate the general goals into individual responsibilities.

Information of targets

For the targets the same holds as for the implementers in this respect. Typically during the negotiations a lot of subjects are on the table. No company has the feeling that it knows what to do until a set of issues that is more or less unrelated to others has been settled.

Balance of power

While clear specifications from the negotiated agreement processes can be a formidable support for implementers, the opposite holds if these implementers want more far reaching performances or other ones than those agreed upon. Being used to central government as negotiation partner of the sector, it might also decrease the respect and legitimacy of the local implementer in the eyes of the firms.

All in all, it's not clear in advance how the context of negotiated agreements influences the quality of the implementation of the direct regulation of the environment law. In practitioners' journals and reports are illustrations of about all the phenomena mentioned here. So, while in an optimal situation the negotiated agreement has both directly a strong positive influence on the sectors willingness and ableness to improve its environmental record, in the other extreme it might bring all implementation of individual responsibilities to a hold. Of course the real world is always something in between.

Now, as much as ever, implementation might prove to be the real bottle neck of the efficacy of public policies for sustainable development. Maybe even a little bit more than ever, since in Western countries that engaged in 'consensual' steering devices, a confusion of style and contents might develop by which ultimately the approach corrupts into the belief that it is just all about 'being nice to industry'. When you live near a fireworks trade center, such illusions can end suddenly.

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Appendix 1, Version 1 of the 'Instrumentation Theory'

A. Maintenance of form of the instrument:

Objectives of implementers (priority)	Objectives of regulated parties (resistance)	Discretion of implementers	Formal division of competencies for application	Informal power balance	Information of implementers	Information of regulated parties	Maintenance of instrument form	Erosion of legitimacy	Likelihood of delay	Degree of delay	
low	low	large					1	x			
		small			insufficient	insufficient	2	xxxx	xxx	x	
						sufficient	3	xxxxx	xxx	x	
						sufficient	4	xxxxxx			
high	large						5	x			
	small	right to appeal of targets			insufficient		6	xx	xxxx	xxxx	xxxx
					sufficient		7	xxxxx	xxxx	xxxx	xxxx
		independently by implementers			insufficient		8	xxx	xxx	xxx	x
							9	xxxxx	xxx		
high	low				insufficient	insufficient	10	xxxxx		xxx	xx
					sufficient		11	xxxxxxx		xxx	xx
						sufficient	12	xxxxxxx			
	high	large	right to appeal of targets	positive for targets	insufficient	insufficient	13	x	x	xxx	xx
					sufficient		14	xx		xxx	xx
			negative for targets	insufficient	insufficient	15	xxx	xx	xx	x	xxxx
		sufficient			16	xx	xx	x	xxxx		
			positive for targets	insufficient	insufficient	17	xxx	x	x	xxxx	
		sufficient			18	xxxx	xxx	xx	xxxx		
			independently by implementers	positive for targets	insufficient	insufficient	19	xxx	xx	xxx	xx
		sufficient				20	xxxx	x	xxx	xx	
			negative for targets	insufficient		21	xxxxx	xxx			
		insufficient		insufficient	22	xxxx	xxx	xxx	xx		
		sufficient	sufficient		23	xxxxx	xx	xxx	xx		
sufficient			24	xxxxxxx	xxxx						
small	right to appeal of targets			insufficient		25	xxx	xxxx	xxxx	xxxx	
				sufficient		26	xxxxxxx	xxxx	xxxx	xxxx	
	independently by implementers			insufficient		27	xxxxx	xxxx	xxx	xx	
				sufficient		28	xxxxxx	xxxx			

B. Likelihood of sanctions:

Objectives of implementers (meaningfulness)	Objectives of regulated parties (cost/benefit)	Discretion of implementers	Formal division of competencies for application	Informal power balance	Information of implementers	Information of regulated parties	Likelihood of sanctions	Erosion of credibility	Likelihood of delay	
low	positive	large	independently by implementers		insufficient	insufficient	1	x		
					sufficient	sufficient	2	xx	xxx	
			on request of targets		sufficient	sufficient	3	xxx	xxx	
		small	independently by implementers		insufficient	insufficient	4	x		
					sufficient	sufficient	5	xxx	xxx	
			on request of targets		sufficient	sufficient	6	x		
	negative	large	independently by implementers		insufficient	insufficient	7	xxxx		
					sufficient	sufficient	8	xxxxx		
			on request of targets		insufficient	insufficient	9	x		
	high	positive	small	positive for targets		insufficient	insufficient	11	xxx	
						sufficient	sufficient	12	x	xx
				negative for targets		insufficient	insufficient	13	xxx	x
		negative	large	independently by implementers		insufficient	insufficient	14	x	xx
						sufficient	sufficient	15	xxx	x
				on request of targets		insufficient	insufficient	16	x	
small	independently by implementers			insufficient	insufficient	17	xxxx			
				sufficient	sufficient	18	xxxxx			
	on request of targets			insufficient	insufficient	19	x			
negative	large		independently by implementers	positive for targets	insufficient	insufficient	20	xxxxx		
					sufficient	sufficient	21	x		
			external		insufficient	insufficient	22	xxx	xx	
	small	independently by implementers		insufficient	insufficient	23	x			
				sufficient	sufficient	24	xxxxx			
		external		positive for targets	insufficient	insufficient	25	xxx	xx	
negative	large	independently by implementers	negative for targets	insufficient	insufficient	26	xxx			
				sufficient	sufficient	27	xxxx			
		external		insufficient	insufficient	28	xxx	xx		
	small	independently by implementers		insufficient	insufficient	29	xxx			
				sufficient	sufficient	30	xxxxx			
		external		insufficient	insufficient	31	x			
				sufficient	sufficient	32	xxxxx			