

# PROBLEM DELIMITATION IN PUBLIC POLICY ANALYSIS<sup>1</sup>

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*The article deals with delimitation of problems in public policy analysis by which the author means a complex approach to policy problems that includes analysis of causes of public policy problems, analysis and evaluation of different subjective problem representations and suggestions for precise problem formulation. The basic aims of the paper are to: (a) review different strands of literature on problem delimitation; and (b) classify different approaches and analyze interrelations among them. Two basic approaches found in literature, entitled respectively “political stream” and “policy stream” are distinguished and analyzed. Political stream literature focuses upon analysis of how problems are defined and framed in political agenda and how they are influenced by nature of the problems and actors concerned. Policy stream literature is more practically oriented and its basic aim is to formulate public issues as concrete problems so that it can be effectively solved. Policy stream consists of three different types of activities: ‘problem structuring’, ‘problem defining’ and ‘problem modeling’. It is argued that the distinction between the “political” and “policy” stream based upon different and rather isolated strands of literature is somewhat artificial and deceptive. In fact, these two basic approaches are not mutually contradictory and should be integrated into one synthetic framework of “problem delimitation”. Only then could some of the methodological shortcomings in the field be solved.*

**Keywords:** *problem delimitation, problem structuring, problem defining, problem modeling, politics of problem definition*

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## Introduction

Since Lasswell’s introduction into policy sciences (1951), problem formulation have always been the ultimate focus and necessary starting point of public policy analysis. Textbooks on public policy analysis congruently stress the key role of correct definition of public problems for further steps of analysis such as choosing among possible solutions: “policy analysts fail more often because they formulate the wrong problem than because they choose the wrong solution” (Dunn 1988, 720). In this sense, problem formulation takes priority over other phases of public policy analysis, such as formulation of variants and choosing among them.

Yet, the literature on problem formulation is very diverse, and authors use different terminology and approaches to the subject. While some authors talk about “problem structuring” (Dunn 2004), others use the term “problem definition” (Bardach 2000) or “problem modeling” (Weimer and Vining 2005). Moreover, even the same term is understood differently (see box below)<sup>2</sup>. For instance, problem definition is understood either as an analysis of how issues *are* actually defined, or as recommendations on how they *should* be defined. To complicate it even further, the relevant literature is scattered around different fields and journals and thus various contributions are often discussed without relation to each other.

My main argument is that these different approaches are not contradictory but complement each other. For this reason, I coin term “**problem delimitation**” that encompasses several activities such as problem definition, problem structuring or problem modeling. I understand “problem delimitation” as a multidisciplinary field of study that tries to analyze and understand causes of public policy problems, analyze and evaluate their different subjective representations and try to suggest their precise formulation. Problem delimitation

2 It is a bit symptomatic that most authors writing on “problem definition” do not define what problem definition is at all. Most authors take the process of problem delimitation for granted, and do not state explicitly what is actually the process of problem definition all about. Authors usually focus upon what problem is and on methodology how it can be defined instead of on the nature of the activity they propose.

involves both subjective and objective elements and also both non-normative and normative elements.

### Problem delimitation: different approaches and definitions

“Problem structuring is that phase of inquiry in which policy analysts search among, and evaluate, competing problem representations” (Dunn 1997, 281).

“The term problem structuring is used here to describe the process by which the initially presented set of conditions is translated into a set of problems, issues and questions sufficiently well defined to allow specific research action” (Woolley and Pidd 1981, 197).

“[Problem-structuring] ... refers to the process, whether formal or informal, by which some initially presented conditions and requests become a set of issues for detailed research” (Pidd 1988, 115).

“The task of problem definition requires a careful consideration of the parameters of an issue and the context within which a recommendation for a policy change will be made” (Irwin 2003, 36).

“Problem definition is, in this sense, a never ending discourse with reality, to discover yet more facets, more dimensions of action, more opportunities for improvement” (Dery 1984, 6–7).

“‘Problem definition’ has to do with what we choose to identify as public issues and how we think about these concerns” (Rochefort and Cobb 1994, vii).

The process of problem definition “does not essentially involve modeling an objective reality but does entail identifying whose reality is to be attended to” (Eden and Sims 1979, 121, quoted in Dery 1984, 5).

“Solving an unstructured problem requires problem structuring, which is essentially political activity, to produce new insights on what the problem is about” (Hisschemöller and Hoppe 2001, 51).

Backward problem solving; verifying, defining and detailing problem means “to define problems so they can be resolved” and “analyze the best available data about the issue, settle on the criteria that will be used to evaluate alternative policies, think up possible alternatives, and then redefine the problem so that it can be reduced, controlled, perhaps resolved, with the information and resources on hand” (Patton and Sawicki 1993, 54).

This article is structured as follows. First, I very briefly outline some literature on the subject to illustrate the broad range of perspectives. Second, I try to distinguish two streams in thinking on problem delimitation. Then I analyze these streams and link them to current methods in problem delimitation. Last, I suggest integration of these approaches and indicate how they complement each other.

### Brief and selective literature overview

Before trying to compare and integrate different approaches to problem delimitation, I find it useful to briefly outline some literature on the topic. Of many important articles and books, I have chosen work of only three authors who, in addition to providing significant contributions, also represent different kinds of reasoning about problem delimitation. It must be noted that the literature is extensive and very diverse and I would like to stress that there are many other very important and interesting inputs not discussed here. I also warn that I will not provide an in-depth review of the chosen authors but only give basic information so that the readers may get a clearer idea what problem delimitation is all about.

David Dery is generally considered the ‘founding father’ of problem delimitation, as he published a book entitled *Problem Definition in Policy Analysis* in 1984<sup>3</sup>. In it Dery attacks the “rationalist” view that problems are somehow objectively given. The choice of problems, he argues, is instead closely related to politics and many definitions are possible and each implicitly points to its remedy. According to Dery, problems are defined, and not “identified” or “discovered”. They cannot be detected as such “but are rather the products of imposing certain frames of reference on reality” (Dery 1984, 4). Dery refuses to give a guide on “how to define policy problems” and he is very skeptical for the

<sup>3</sup> Surprisingly, he published only one more article on this topic (Dery 2000).

actual possibility to do so: “A how to-do-it guide on creativity would be self-contradictory. The nature of question-finding processes resists precise or useful description” (Dery 1984, 2). Dery does, however, advocate a pragmatic (in his words “realistic”) approach to a problem definition. A problem definition should be judged according to its usefulness, and “a useful problem definition is one that proposes methods or directions for solving ‘the’ problem” (Dery 1984, 9). To define an issue as a problem has a sense only insofar as we can point out to an opportunity for its solving. Thus, not surprisingly, Dery defines problems as “opportunities for the improvement” and the process of problem definition as “a search, creation and initial examination of ideas on opportunities” (Dery 1984, 26).

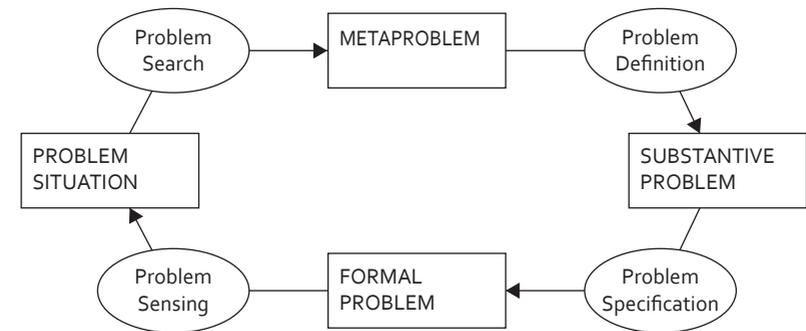
If Dery was among the first authors writing on the subject, William N. Dunn is an author who wrote most extensively on the subject (e.g. Dunn 1988, 2004) and contributed, in my view, to the development of problem delimitation methodology more than anyone else. Dunn follows Dery’s concept of policy problems as he defines them as “unrealized needs, values, or opportunities for improvement that may be pursued through public action” (Dunn 2004, 72). He further agrees with Dery that when defining policy problems, an analyst must “exercise creative judgment and insight” (ibid. 81). However, he is not as skeptical as Dery about the possibility of learning how to define policy problems effectively. On the contrary, he believes that the current available methodology is insufficient and has made much advancement in this area.

According to Dunn, “methods of problem structuring take priority over methods of problem solving” (ibid. 72). In this respect, methods of problem structuring are higher-order methods:

*“These higher-order methods and the questions for which they are appropriate are what some have recently discussed as policy design, or design science. Higher-order methods of problem structuring are metamethods – that is, they are “about” and “come before” lower-order methods of problem solving. When analysts use lower order methods to solve complex methods, they run the risk of committing what Raiffa and others call errors of the third kind: solving the wrong problem”* (Dunn 2004, 74).

According to Dunn, problem structuring is a process with four interdependent phases, namely: problem search, problem definition, problem specification and problem sensing (Figure 1). A prerequisite – and usual starting point – of problem structuring is the sensing of “problem situations”. **Problem situations** are diffused worries and inchoate signs of stress sensed by policy analysts, policy makers, and citizen stakeholders. Problem situations, not well articulated problems, are what we first experience. The next stage the analysts

Figure 1—Phases of problem structuring



Source: Dunn (2004, 83)

engage in is **problem search**. The goal of problem search is not to discover any single problem, but on the contrary – to discover a “metaproblem”. A **metaproblem** is ill-structured “a problem-of-problems” that includes many problem representations of multiple and diverse policy stakeholders. The number of these socially constructed representations seems unmanageably huge. Moreover, they are very dynamic and scattered throughout the whole policy-making process.

Then the central task comes: how to structure metaproblem. Dunn calls this activity **problem definition**. For Dunn, problem definition is the act of choosing (or “filtering”) from the whole set of possible representations one particular aspect of the problem – a “**substantive problem**”. Problem definition means formulating the basic and general aspects of a given problem. It is a choice of conceptual framework which is similar to the choice of particular worldview or ideology and that “indicates a commitment to a particular view of reality” (Dunn 2004, 84). Any problem can be defined – and often equally persuasively – in quite different frameworks. For instance, the problem of poverty can be explained in terms of failure of the state or in the terms of imperfections of the poor themselves.

Once a substantive problem has been defined, a more detailed and specific **formal problem** may be constructed. Dunn calls this process **problem specification**<sup>4</sup>. Problem specification typically involves the development of a formal mathematical representation of the problem.

4 It roughly corresponds to what Patton and Sawicki (1994) call “problem detailing” or “creating operational definition”.

The critical issue then is how these formal (“technical”) formulations of a problem correspond to the original problem situation. One can easily imagine the exact and clear formulation of a problem which, however, has one important drawback: it is not sensed as a problem. It means that we may have committed the so-called **error of the third type** (EIII) – solving the wrong problem. The reasons for this type of error are threefold. First, we could have incorrectly formulated boundaries of a metaproblem (perhaps some important definitions of particular stakeholders were omitted). Second, during the problem definition we may have chosen the wrong worldview or ideology to conceptualize a “problem situation”. Third, during problem specification we may have chosen the wrong formal representation of the problem.

The last contribution I would like to briefly sketch is a work by Robert Hoppe and his colleagues (Hoppe 2002; Hisschemöller and Hoppe 2001). His basic aim is to analyze different actors’ *strategies* in problem definition, and especially the level of “structuredness” these actors try to impose on the problem and why. The key questions Hoppe poses are: “Why do some policymakers prefer to define problems as overstructured and not understructured? May one predict that policymakers who adhere to different ways of life will prove to be more adept in solving some problem types rather than others?” Although Hoppe takes policy problems as a sociopolitical construct containing political subjectivity “... this subjectivity does not operate in a random fashion. People may display certain judgmental and behavioral patterns in defining problems” (Hisschemöller and Hoppe 2001, 52).

Hoppe defines problems – in accordance with common usage – as an unacceptable gap between normative ideals or aspiration levels and the present and future conditions. Problems become public or policy problems if governments are supposed to deal with them. According to Hoppe a ‘problem’ is an analytical compound of three elements: an ethical standard; a situation (present or future); and the construction of the connection between standard and situation as a gap which should not exist. Solving an unstructured problem requires problem structuring which is essentially political activity (Hisschemöller and Hoppe 2001, 51).

Hoppe shows that policymakers can agree or disagree on any of three problem elements stated above. As for “standards”, one may distinguish between those with much and little consent. Concerning the situation (and its future development), there are those with highly certain and highly uncertain knowledge. Regarding the relationship between standard and situation, people may disagree about the political sense to construct it as an intolerable gap in need of mending; or about the extent to which this is a government’s responsibility. To create typology of four types of problems, he uses two dimen-

sions – degree of certainty about knowledge and degree of consent on relevant standards (see Table 1).

**Table 1**—Four Types of Policy Problems

		Consensus on relevant norms and values	
		Yes	No
<b>Certainty about relevant knowledge</b>	Yes	Structured problem (e.g. road maintenance)	Moderately structured problem (ends problems; e.g. abortion, euthanasia, or voting rights for foreigners)
	No	Moderately structured problem (means problems; e.g. traffic safety)	Unstructured problem (e.g. car mobility)

Source: Hoppe (2002, 309)

**Structured problems** are characterized by high degrees of certain knowledge and consent (e.g. road maintenance). Dealing with such problems belongs to daily administrative routine. **Moderately-structured problems** come in two distinct forms. In one variation (moderately structured problems/ends problems) consent on relevant standards is high – i.e. relevant values and appropriate ends are not contested. But policymakers cannot agree on the effectiveness and efficiency of means to be used and (financial) resources and risks to be allocated (e.g. some traffic safety problems). That is, knowledge that should be a basis for particular policy action is missing or ambiguous. The other variation (moderately structured problems/means problems) involves substantial agreement on certain knowledge, but sometimes intense disagreements about values at stake and ends pursue. All examples in this category (e.g. abortion, euthanasia, or voting rights for foreigners) can be relatively easily implemented, but disagreements on the ethical desirability or acceptability of the values and goals continue and, sometimes, intensify. Finally there are those problems where both the knowledge base and ethical support remain hotly contested. Unfortunately, the most urgent and virulent political problems frequently belong to this type. Such problems remain ‘**unstructured**’.

What is so appealing in the work of Hoppe and his colleagues is that they link these types of problems to different strategies of their definition. Specifically they distinguish four types of “definers”. “Hierarchists” will impose a clear structure on any problem regardless of cost. “Isolates” see social reality as an unstable casino in which any privileged problem structure jeopardizes chances for

survival. “Enclavists” (or egalitarians) will define any policy problem as an issue of fairness and distributive justice. “Individualists” will exploit any bit of usable knowledge to improve a problematic situation. This approach, i.e. finding certain *patterns* in different actors’ problem definition has very useful and practical implications. Thus Hisschemöller and Hoppe (2001) argue that policymakers show inclination to move away from unstructured problems to more structured ones.

## Two streams in problem delimitation

As in public policy in general, there are two major approaches to problem delimitation<sup>5</sup>. Because of the lack of more pertinent terms, I will coin them as “political stream” and “policy stream”. The first approach – “**political stream**” aims at *understanding* how concrete public issues are identified, conceptualized and defined by different actors, why certain societal conditions become defined as public problems (and others do not) and what are the reasons and consequences of different definitions or frames of public issues. Examples of this approach include contributions by Dery (1984), Rochefort and Cobbs (1994), Stone (2002) and Peters (2005), and they are often labeled “politics of problem definition”. Political stream is mostly analytical and non-normative. Its main focus is more scientific than practical – to describe and explain different definitions or frames of public issues.

In contrast, the second approach – “**policy stream**” – is more practical and aims at providing precise formulation of public problems so that the problem can be effectively and efficiently solved<sup>6</sup>. Although policy stream also involves an analysis of different subjective approaches to problems, the basic motivation behind activities in policy stream is to help to find – through exact problem formulation – a solution for a public issue, and not to understand why a certain public issue is defined exactly in this way by particular actor. Authors from the policy stream are mostly concerned with the methodology and methods of problem formulation (e.g. Bardach 1981; Dunn 1988). There the basic concern is: “which methods to use, and how, when formulating policy issues for policy makers?” The policy stream is rather broad and includes several rather different sub-streams.

5 In this respect, recall classical distinction of Harold Lasswell between two strands in policy studies: “knowledge of policy” and “knowledge in policy”.

6 As Guess and Farnham (1989, 7) put it: problem definition refers to formulating “an ‘actionable’ statement of issue dynamics from which expenditures can be made, personnel deployed, and procedures developed that will reduce or eliminate the undesirable state of affairs without undue harmful consequences to related activities.

The difference between the “political stream” and the “policy stream” is summarized in Table 2. It is important to stress that the dichotomy we mark between the “political stream” and the “policy stream” is based upon current literature on the topic of “problem delimitation” which is indeed divided into these streams and sub-streams. As I will argue later, this division is somewhat artificial and undesirable.

**Table 2**—Different approaches to problem delimitation

	Stream	Basic aim	Activities
Problem delimitation	Political stream	To understand how and why certain societal conditions become defined as public problems and what are consequences of different problem formulations (definitions)	Analysis of politics of problem definition
	Policy stream	To formulate public issues as policy problems so that they are well informed by stances of different actors involved, and quantitative data available and they fulfill other criteria (such as solvability by public policy instruments)	Problem structuring Problem definition Problem modeling

Source: Author

## Political stream: politics of problem definition

Authors from the political stream are concerned with the process by which an issue (or an unexploited opportunity) has been recognized and placed on the public policy agenda as a public problem. The key to understanding problem definition is to know how and why the conditions become defined as public problems. The authors endeavor to “map out rhetoric most frequently employed by problem definers, and to analyze the scenarios by which definitions are built or crumble” (Rochefort and Cobb 1994, 4). The basic idea behind this approach is that “problems do not exist ‘out there’; they are not objective entities in their own right” (Dery (1984, xi). In any particular problem, there can be – and there indeed are – divergent perceptions of its origin, impact, and significance. Language, rhetoric and social construction are critical in determining which aspect of a problem will be examined (Stone 2002; Baumgartner and Jones 1993).

It is argued that mismatches often exist between the seriousness of a problem and the level of attention devoted to it (Rocheftort and Cobb 1993, 56). For example, Lineberry (1981, 301–304) demonstrated the discrepancy between the official poverty rate and the public's perception of poverty as an important problem. He concluded that other factors, in addition to “objective conditions”, could be responsible for an issue's standing such as intensity of issue advocacy, leaders' openness to the issue, and the urgency of competing problems.

This is not to say that “objective conditions” do not exist at all, but that they are “selectively defined, classified, explained, and evaluated” (Dunn 2004, 75). Although in all established policy domains (such as environmental policy, educational policy, health policy etc.), there are many sets of indicators of problem scope and severity, their validity is often challenged. Moreover, even the same “objective” information can be interpreted in two completely different ways.

The political stream authors try to analyze disputes over a problem – usually retrospectively – to see how the problem has been seen and formulated by the different actors (“the career of the problem”). They see problem definition as a social construction and political struggle over alternative realities. For analysis of different aspects of this construction, analysts have developed several typologies of problem dimensions. For instance, Rocheftort and Cobb (1994) proposed a set of dimensions of problem captured in Table 3.

## Policy stream: approaches to problem formulation

As stated above, the basic aim of the policy stream is to formulate a public issue as a concrete problem so that it can be effectively solved. The end product of policy stream activities is **problem formulation**. By problem formulation I mean transformation of an unstructured issue or problem to a structured and specified shape so that the nature of the problem is explicitly stated and easily understood. The problem can be formulated in a few sentences or paragraphs or as a graphical model.

In principle, the formulation of a problem can be based upon three different sources of information:

- subjective definitions of a problem by different actors and their different problem “frames”;
- judgment of policy analysts – “experts” in the field and their view on what is and what is not a problem;
- objective data and information about a problem.

**Table 3**—An Anatomy of Problem Description.

Dimension of problem	Options
Problem Causation	Personal – impersonal Intended – accidental Blame allocated – blame avoided Simple – complex
Nature of the Problem	
Severity	Degrees of severity
Incidence	Growing, stable or declining Social patterns: by class, population, cohort, age, etc.
Novelty	Unprecedented – familiar
Proximity	Personally relevant – a general social concern
Crisis	Crisis – noncrisis Emergency – nonemergency
Characteristics of the Problem Population	Worthy – unworthy Deserving – undeserving Familiar – strange Sympathetic – threatening
Ends-Means Orientation of Problem Definer	Instrumental – expressive
Nature of Solution	Available – nonexistent Acceptable – objectionable Affordable – unaffordable

Source: Rocheftort and Cobb (1993, 62)

Following this, there have been three rather different approaches to practical problem formulation. All these sub-streams aim to provide policymakers with what is (and what is not) a key policy problem to be resolved. It also (explicitly or implicitly) helps policymakers to understand how this key problem relates to other problems or to other aspects of this problem. Each of these sub-streams is based upon rather different formulation principles. The first sub-stream stresses the importance of different aspects and dimensions of the particular issue, and aims at *structuring* the problem terrain – to make “a structured problem” from “a messy problem”. The second approach stresses the role of policy analysts. It prescribes a set of requirements necessary for public issues to be qualified as public problems and gives tips on how to effectively define public problems. The third stream stresses the importance of “hard data”

(i.e. mostly quantitative information about a problem) and tries to create a model of the problem using mostly quantitative information. Below I briefly describe the basic components and “the logic” behind each of these activities. They are also summarized in Table 4.

By **problem structuring** I mean an analytical process that fully respects subjectivity, multi-dimensionality and vagueness in policy issues. In problem structuring one analyzes competing definitions by different actors, different aspects and dimensions of the issue and tries to impose an order on ill-defined unstructured mess and to elicit its boundaries. The outcome of problem structuring can be the classification of different dimensions of the problem or interrelations between different clusters of the problem<sup>7</sup>. A notable example of the problem structuring approach is best seen in Dunn’s work (Dunn 1988, 2004)<sup>8</sup>. The methods most suitable for problem structuring include mind mapping, brainstorming, boundary analysis and classificational analysis.

**Problem defining** refers to activity whereby we provide a precise definition of a problem that fulfills the requirements of policy analysis and other fields<sup>9</sup>. It can be argued that a suitable definition of problem, to be of any use for policy makers, must respect different subjective dimensions of problem as well as objective information on it, but must also fulfill other (pragmatic) criteria. Finally, problems must be formulated in a particular way to attract attention, stand a chance to get on agenda, and be resolved. Policy analysts have formulated several key requirements on problem formulation (Bardach 2000, 1; Patton and Sawicki 1993):

- it is analytically manageable (it is neither too broad nor too restricted);
- it makes sense in light of the political and institutional means available for its mitigating;

7 There are few definitions of problem structuring. One is by Michael Pidd (1988, 115–116) who defined problem structuring as “... the process, whether formal or informal, by which some initially presented conditions and requests become a set of issues for detailed research. Thus, problem structuring is in some senses a preliminary to detailed data collection, interviews, modeling, computer programming, optimization, experimentation etc. The aim is to take the richness of the presenting mess, and from this to extract research tasks which can be regarded as reasonable units”.

8 Recall that Dunn uses the term “problem structuring” in a broader sense. In his approach, problem structuring includes four interdependent phases: problem search, problem definition, problem specification and problem sensing. Thus for him, problem structuring roughly corresponds to our problem formulation, i.e. it includes also problem modeling and problem definition. However, as he puts stronger emphasis upon the elicitation of problem boundaries and its inner structure rather than on formal modeling or precise defining, we take him as an excellent proponent of problem structuring in our more restricted definition of the term.

9 Other names for this activity could be “creating operational definitions” or “problem specification”.

Table 4—Different types of activities

Type of activity	Substance of the activity	Aim	Methods	Performance Criteria	Main References
Problem structuring	Analysis of competing definitions of different actors and/or different aspects and dimensions of the problem	To make from the unstructured problem a structured one and to estimate its boundaries	Mostly qualitative	Involvement of as many perspectives on problem as possible and structuredness of these perspectives	Dunn (2004)
Problem defining	Choice of problem or set of problems and perspective from which they should be seen	Precise definition of problem that fulfills requirements of policy analysis and other fields (such as severity, solvability etc.)	Mostly heuristic recommendations	Fulfilling criteria of policy analysis – usefulness in respect to clients requirements	Bardach (2000)
Problem modeling	Transforming issue to a form of operationalized variables and analysis of interrelations among these variables	To make a model (causal if possible) of causes and effects of the problem	Mostly quantitative	Empirical grounding and logical consistency	Weimer and Vining (2005) MacRae, and Whittington (1997)

Source: Author

- it should be clear and persuasive to the public;
- it should avoid including potential solution in the problem.

Firstly, though all policy analysts warn against superficial and narrow definitions of problems, they also argue that a problem cannot be formulated as too complex, either. Then the problem analysis gets out of hand and also it is becoming increasingly difficult to put in on public agenda. Secondly, the problem should be defined in a way to allow something can be done about it by public policy instruments. To illustrate this point, it is not useful to take as a basic problem for instance “the egoistic character of human nature” (although arguably it can be part of explanation of many problems) because there is no public policy instrument to eliminate it. Thirdly, a problem should be stated in a form that is clear and persuasive to the public. Fourthly, in problem formulation we should avoid defining solutions into the problem. Projected solutions must be evaluated empirically and not legitimated merely by definition (Bardach 2000, 5). Also one must acknowledge that “‘doing nothing’ is also a possible policy” (Patton and Sawicki 1993, 150).

To formulate the problem in such way is not easy. For this reason, policy analysts developed several heuristic recommendations such as (Bardach 2000):

1. Think in terms of deficits and excess; use the word “too”;
2. Quantify if possible (how big is “too”);
3. Iterate when defining the problem.

**Problem modeling** is the most traditional approach in policy analysis. Policy models are “simplified representations of selected aspects of a problem situation constructed for particular purposes ... [policy models] are artificial reconstruction of reality in issues areas that range from energy and the environment to poverty, welfare and crime” (Dunn 2004, 86). In other words, models are a “purposeful reduction of a mass of information to a manageable size and shape” (Stokey and Zeckhauser 1978, 8). Although models can take many different forms (such as physical model or verbal model), in policy analysis mostly graphical and formal mathematical models have been developed and used (Greenberger, Crenson and Crissey 1976). Problem modeling is based upon dissecting the whole complex issue into small components, choosing the most relevant ones and building a model of their interrelations. Very often these components are quantitative variables and the purpose of analysis is to find out causes of the problem on the basis of available empirical evidence. Special attention is given to problematic conditions that can be altered by government action, so called manipulable variables (MacRae and Whittington 1997, 38).

## Methodology and methods of problem delimitation

Before discussing interrelations between the “political” and “policy” streams, let me briefly summarize the methods and methodology of public policy problems delimitation. As Dunn (1988, 720) once noted, there is a big methodological deficit in this area: “methods employed by most policy analysts are not appropriate for structuring policy problems as a prelude to their possible solution”. According to Dunn, this deficit creates enormous difficulties for practicing policy analysts as there is always danger that one may formulate the exact solution to the wrong problem instead of an approximate solution to the right problem. Dunn not only called for the development of “methods of second type” (as he called them) but also gave a summary of these techniques and created new methods – such as boundary analysis. Table 5 on next page summarizes these methods and includes some others<sup>10</sup>.

It is important to note that these methods are mostly heuristics, aimed at stimulating creative and systematic thinking rather than methods with a clear-cut sequence of steps with replicable results. They are used in different ways and with different frequency. While, for instance, SWOT analysis (which I also take as a problem delimitation method) is widely used; for boundary analysis I have found only one application in literature (Hosseus and Pal 1997).

I do not aim here to present a critical review of these methods. Instead, I only want to share practical experience in applying and teaching these methods so that the reader gets a clearer picture of what is available and what is missing in the problem delimitation methodology. First, the usefulness of all of these methods obviously depends upon the particular problem at stake and the level of its “structuredness”. It has proved useful to start with methods that determine different elements and facets of the problem (for instance, brainstorming or boundary analysis). These are most useful for analysts who are facing vague and ill-structured problems with indefinite boundaries<sup>11</sup>. Only then do we start to classify and structure these elements (using, for instance, fishbone diagram or problem tree). At this moment we should arrive at some core pol-

10 For reader’s information, we have included information whether this method was included in original Dunn’s review.

11 Indefiniteness of problems is even far more visible in the case of students who are about to analyze problem of their choice. They usually have very vague ideas about what public problem actually could be. In this case, inductive techniques exploring all thinkable aspects of problem are even more necessary. But these techniques are very useful also in a case when analyst faces problem that is “well-structured” by his client. As both practitioners and researchers would concur, clients often have a tendency to define problem as narrower and more structured than would be appropriate.

**Table 5**—Methods for problem delimitation

Method	Source
Argumentation Mapping <sup>a</sup>	Toulmin (1958)
Assumptional Analysis <sup>a</sup>	Mitroff et al. (1979)
Boundary Analysis <sup>a</sup>	Dunn (2004), Hosseus and Pal (1997)
Brainstorming <sup>a</sup>	Proctor (2005)
Causal Models	Jones (1995), chapter 7
Classificational Analysis <sup>a</sup>	O'Shaughnessy (1971)
Dimensional Analysis	Jensen (1978)
Events Analysis	Potůček, Purkrábek, Háva (1994)
Fishbone Diagram (Ishikawa diagram)	Higgins (2006)
Hierarchy Analysis <sup>a</sup>	O'Shaughnessy (1971)
Interpretive Structural Modeling	Warfield (1976)
Mind Maps, Cognitive Maps	Eden (2004)
Multiple Perspective Analysis <sup>a</sup>	Linstone et al. (1981)
Problem Tree	Start and Hovland (2004)
Q-Methodology	McKeown and Thomas (1988) Montgomery (1996), Varvasovszky and
Stakeholders Analysis	Brugha (2000)
SWOT Analysis	Proctor (2005)
Synectics	Gordon (1961)
Technique of Decisions Seminars	Lasswell (1960)
Why-why diagram	Higgins (2006)

<sup>a</sup> Included in Dunn's textbook (Dunn 2004)

Source: Author

icy problem or set of interlinked problems. For instance, one may no longer state that our problem is “tertiary education” but that our core problem is “unequal access to tertiary education”. Nevertheless, it is important not to throw aside all other dimensions and aspects of the problem. For instance, although we have decided to analyze “unequal access”, we should somehow codify (preferably in some form of graph) that this problem is deeply embedded in many other problems (such as quality of education, poverty etc.).

In general, one can find in literature a range of methods and heuristics that both dissect a complex issue into smaller elements and dimensions as well as methods that help us to put these elements again into a new coherent, more structured form. In my view and experience, however, two important types of methods are lacking. First, we need methodology and methods that would help

us to explore the development of problems over time<sup>12</sup>. These methods would ideally include discourse on the issue (subjective or social construction dimension), changes in objective conditions, and the relationships between these two. To the best of my knowledge, no such complex methodology exists.

Second, although in problem definition we should avoid “defining solution into the problem” we need methods that would help us link problems to their possible solutions. As stated above, problem formulation should take into account the actual solvability of the problem. The problem should be defined in a way that it is resolvable by the client (or other actor) to whom it is addressed. In this respect, we would need methods that would somehow differentiate between different *levels* of problems according to different mode of government and available policy instruments. Almost all problems can be solved on different levels of governance – supra-national, national, regional or municipal. However, it is absolutely necessary to analyze multi-level structure of problems. Unfortunately, to the best of my knowledge, there is no such methodology so far.

## Beyond policy and political stream

In my view, the deficit of methods explained above is mainly due to the separation of different approaches to problem delimitation. In this article I have analyzed different approaches to problem delimitation. We have seen that the topic is approached from different angles and on the basis of different assumptions. Instead of trying to eliminate or critique any of these approaches, I find all of them useful but insufficient if any of them stands alone. I find it necessary to combine and integrate them. Unfortunately, these approaches are spread among different types of literature which hinders mutual discussion and inspiration. Moreover, the topic is discussed under many different labels, such as problem structuring, problem modeling, problem definition, problem formulation and many other terms that are often carelessly used.

Most importantly, the strong division line between the “political” and “policy” streams found in literature is somewhat artificial and deceptive. In fact, these two basic approaches are not contradictory and should complement one another. Some authors indeed combined these two approaches (Hoppe 2002; Dunn 2004), and showed that it is possible and quite useful to combine understanding of the problem and to contribute to its effective formulation. I also call

<sup>12</sup> The only exception we are aware of is so called “events analysis” developed by the Czech policy researchers in the 1990s (Potůček, Purkrábek and Háva 1994). Even this, however, is more a set of vague methodological recommendations rather than concretely specified method.

for the integration of these approaches. Although the “policy side” of problem delimitation is very important, we need to grasp the history of the problem and the reasons why it is framed in a particular way. Knowing the “career” of the problem can help in finding a problem definition that fulfills the requirements of solvability by public policy instruments. On the other hand, the analysis of “problem career” can be enriched by including changes of objective conditions in the problem, i.e. when the subjective definitions (frames) of the problem are directly connected to actual societal changes (i.e. it is acknowledged that policy problems are not completely socially constructed). Similarly, an analysis of how different actors “play” with hard data could be very useful and interesting.

As a whole, problem delimitation in public policy – instead of different approaches – should consist of two related activities. The first one is mostly scientific and could be called **problem analysis** (or problem diagnosis). This would include the study of facts and different perspectives as well as their interrelations. In other words, it would include both study of external conditions and their subjective interpretation and also, most importantly, it should include the relationship between the subjective and objective dimensions.

The second activity is more practical and normative and could be called **problem formulation**. This activity would build upon an understanding of a problem (problem analysis) but explicitly and transparently add analysts’ values. In addition to current practice, it should be a more participative process, in which all relevant actors – and not only experts – are involved.

Finally it must be stressed that I do not propose replacing unproductive streaming in problem delimitation (Table 2) with new substreams (Table 6). I strongly call for an enlacement of problem analysis and problem formulation. They should be taken as two sides of the same coin. Only then some methodological deficits stated above can be effectively solved.

**Table 6**—Proposed structure of the problem delimitation

	Stream	Basic aim
<b>Problem delimitation</b>	Problem analysis	To analyze objective conditions underlying the problem, subjective interpretation and framing of the problem and interrelations between subjective and objective side over time (dynamic approach)
	Problem formulation	To formulate public issues as policy problems so that they are well informed by stances of different actors involved, quantitative data available and they fulfill other criteria (such as solvability by public policy instruments).

Source: Author

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