THE SYSTEMS FALLACY

FROM OPERATIONS RESEARCH TO CONTEMPORARY COST-BENEFIT ANALYSIS:

THE PERILS OF SYSTEMS ANALYSIS, PAST AND PRESENT

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INTRODUCTION

“Illegally breaking into the privacy of the petitioner, the struggle to open his mouth and remove what was there, the forcible extraction of his stomach’s contents—… [these] are methods too close to the rack and the screw to permit of constitutional differentiation.”

Justice Frankfurter, Rochin v. California (1952)2

“Application of constitutional rules not in existence at the time a conviction became final seriously undermines the principle of finality which is essential to the operation of our criminal justice system.”

Justice O’Connor, Teague v. Lane (1989)3

The field of criminal law and procedure witnessed a fundamental transformation over the course of the second half of the twentieth century. Before, the criminal sanction more often was analyzed through the lens of sovereign power and individual rights. Punishment often triggered questions about the government’s right to punish and the balance of power between the state and its citizens. It brought to mind, in Justice Frankfurter’s words, the history “of the rack and the screw.” Today, the criminal sanction is analyzed more often in terms of the proper management of “our criminal justice system.” Consideration of the system’s needs and requirements, or in Justice O’Connor’s words of the principles “essential to the operation of our criminal justice system,” influence the analysis and often act as trumps in the decision making.

Undoubtedly, this transformation is the product, in part, of the selective incorporation of the Bill of Rights in the 1960s and the creation of a more unified criminal process, as well as the turn to managerialism across American society during the 1970s. But it has also been influenced, importantly, by a new and distinct way of thinking

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2 342 U.S. 165, at 172 (1952) (emphasis added).

about the criminal process that was born in the aftermath of World War II: the systems analytic view. This is the view that the criminal process forms a “system”—namely, the “criminal justice system”—that must meet certain requirements in order to function properly. The emergence of this view can be visualized by tracing the usage of the term “criminal justice system” in federal judicial opinions since the 1960s:

Rate of Federal Court Opinions that Contain “Criminal Justice System” (per 10,000)

The trend is not merely a product of the incorporation of the Bill of Rights and the corresponding expansion of federal judicial review of state criminal cases. A very similar trend, with a similar starting point, has taken place at the state level as well:

Rate of State Court Opinions that Contain “Criminal Justice System” (per 100,000)
In effect, the past fifty years witnessed the birth and emergence of the notion of a “criminal justice system” that, today, has taken on a life of its own. This transformation has had some positive effects, especially in helping us better understand, in a more measured way—at a descriptive or positivist level—the functioning of the criminal process. The notion of the “criminal justice system” was extremely useful, beginning with the 1967 President’s Commission on Law Enforcement and the Administration of Justice, in identifying the different branches and processes associated with the life course of criminal cases. It gave us what is, still today, one of the most useful and important iconographic representations of the criminal process:

![Diagram of the criminal justice system]


But the emergence of the idea of a “criminal justice system” has also had a more troubling negative consequence—at the normative level—of masking the political nature of the decisions that courts are forced to make daily in the area of criminal law and procedure. The “criminal justice system” is, naturally, a metaphor, a purely figurative system, and practically all of the normative content is determined by the very definition of the boundaries of the system itself. The normative work is thus already accomplished *sub silento* by setting the scope of the system, by preliminarily determining what is included or not in that metaphorical system, and by establishing the system’s needs and

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requirements. But those scope questions are barely ever scrutinized or debated, generally are assumed, and most often are delegated—or relegated—to the systems experts. As a result, when lawyers and judges rely on the notion of a “criminal justice system,” they tend to produce arguments or decisions that privilege what they call the objective needs or requirements of that system, but that mask the normative judgments that are integral to imagining the system itself. Those system needs and requirements end up outweighing other values and interests, and at the same time displace robust debate over the range of concerns related to the criminal sanction.

The systems analytic view has provided the intellectual framework for a new way of approaching criminal law and procedure. This essay asks how this came about, what its dangers are, and what the larger ramifications are. It argues that the shift forms part of a larger development in the area of public policy and, thus, it seeks to place the transformation in criminal law and procedure within a broader arc. It explores the central problem with systems analytic thought and its implications for contemporary law and policy.

*The Systems Fallacy*

The systems analytic approach grows out of earlier efforts, at mid-twentieth century, to systematically and quantitatively evaluate the effectiveness of man-machine systems. It traces back, originally, to the development of Operations Research by the British and American military during World War II, a model-driven decisional technique used to perfect military weapon systems; to the extension of Operations Research-type logics, during the Cold War, to public policy decision-making more broadly, using the technique of “Systems Analysis” refined at the RAND Corporation and the Pentagon; and then to the subsequent imposition by President Lyndon B. Johnson, in 1965, of Planning, Programming, Budgeting Systems analysis on all government policy-making.

The turn to systems thought has been deeply consequential in the field of law and public policy. Systems thought is essentially responsible for the dominant role that cost-benefit analysis plays today throughout law and policy—or more generally, for the fact that cost-benefit rationality has become such a dominant form of reasoning in our contemporary administrative state. It has also transformed the way we think about the criminal sanction and punishment, in large part because of its influence on criminology and criminal justice.

A close examination of the attempt to extend the use of systems analytic models from the narrow military domain of Operations Research to the broader public policy context, however, reveals a recurring problem centered on the choice of scope of the analysis or—which is to say the same thing—the choice of scope of the metaphorical “system” or of the set of alternative policies to compare in a systems analysis. I would describe the problem, to be exact, as follows:
The analysis of a metaphorical or figurative system, by contrast to a real or tangible system such as an engine or weapons system, is always going to involve a decision regarding the scope of the system—of what is in and what is out of the comparison. That normative decision will produce analytic outcomes that will inevitably affect the balance of political values in society.

The problem is, that normative decision is always going to be either too large or too small. “Too large” in the sense that a systems analysis, by definition, will evaluate a purportedly complete set of fungible policy alternatives—a “whole system”—yet, in doing so, it inevitably will include some policies at the margins that may be less central to the system’s core values or functions, and as a result may distort or reshape the balance of values or functions. “Too large” as well because it will give the false impression that the “whole system” has been analyzed, thus crowding out or discounting more alternative policy approaches. “Too small” in the sense that any partial analysis of a delimited set of alternative policies, short of a full-blown welfare calculus, will distort the decisional outcome by maximizing the wrong objective, namely the efficiency of one metaphorical system rather than overall social welfare. This problem of partiality is particularly acute because the scientific character of the method makes it seem so neutral; and also because of its methodological tilt in favor of hard systems.

These scope problems become doubly problematic when the systems analysis determines outcomes and trumps other values—which happens precisely because of the method’s pretense to comprehensiveness, neutrality, systematicity, rigor, and objectivity. The pretense to science masks the inescapable value-laden question of choice of scope, of which set of policies or regulations to include in the metaphorical system and to analyze, or more broadly, of which figurative system to study.

As a result, social and political values are silently imposed under the guise of neutral science, preventing full and open public debate regarding the political choices in question. In the end, systems analysis flips the proper relationship between method and substance, or to be more exact, between policy making and politics. Instead of the decision-making method serving to further the preferences of society, the decisional procedure silently imposes values on society.

These flaws comprise what I call the “Systems Fallacy”: the mistaken belief that there could be a non-normative, objective, or neutral—that is to say, scientific—Archimedean point from which we could establish the proper parameter of the figurative system in question, or the correct boundary for the set of alternative policies to compare with each other, that would not bias the decisional outcome and distort our political values. That assumption is mistaken because the act of defining a metaphorical system, the very choice of the scope of the policies to compare and analyze, is an inherently normative enterprise that is value-laden and political in nature, and has effects on the
values in our society. The minute we are inattentive to this core insight, we have moved one step closer to reproducing the “Systems Fallacy.”

Although there are, admittedly, few pure systems analysts today, the systems fallacy plagues styles of decision-making that continue to draw on the logic of systems thought. This is true in the field of criminal law and criminal procedure, notably in cases where lawyers and judicial decision-makers utilize the notion of the “criminal justice system.” The mode of reasoning that assumes the existence of a “criminal justice system” tends to reify its contours, its goals, and its purposes into fixed “needs” that then serve as trumps in decision-making and determine the outcome without frank discussion of the other values that are being outweighed.

Similar problems plague some of the more expansive contemporary approaches to public policy that begin, as in all systems analysis, by collecting a set of promising policy alternatives and treating them as fungible, rather than addressing up-front the value-laden choice of scope questions. In the broader area of public policy, many analysts continue to deploy systems analytic thought—even if not under the explicit rubric of “systems”—that replicate the problem of the systems fallacy. Here too, the choice of a set of comparable public policies to compare to each other and analyze reproduces a version of the systems fallacy—since the set of comparable policies function, in fact, to establish a quasi-system.

The systems fallacy also casts its shadow over cost-benefit analysis—which had its roots in systems analysis and the study of public policy—including more recent approaches to cost-benefit analysis. To be sure, certain contemporary proponents of cost-benefit analysis have offered chastened and more limited versions of the approach in an effort to address some of the criticisms that have traditionally been leveled against quantification. They have, first, recharacterized the analysis as merely a second-best but realistic decisional tool; second, introduced certain limits to quantification and thereby excluded certain potentially offensive calculations; and third, urged retrospective and reiterative analyses. However, even here, when the decisional tool retains the element of a comparison among policies, there is a remnant of the systems fallacy that continues to plague these reconstructive projects.

In effect, there is a systems fallacy remainder—one that should make us skeptical of the current use of reconstructed cost-benefit analysis. The reconstructive project is, once again, too small—too small, that is, from an internal perspective that accepts all the premises of the reconstructive project itself. If one actually believes that it is possible to avoid the problems of quantification and properly engage in this type of reconstructed cost-benefit analysis, then limiting the analysis to the comparative cost-effectiveness of a few policies is going to distort overall welfare: the analysis must go larger and fully address the overall social welfare calculus. The limited nature of the reconstructive enterprise invariably means that the analysis will seek to maximize the wrong outcome—namely, narrow efficiency among a small set of policies, rather than social welfare writ
—and, as a result, likely will have unintended negative consequences. To foreshadow the argument, society may be beset with a cost-effective solution to one problem—for instance, increased incarceration as a solution to high crime—that might only marginally contribute to cross-national crime declines, but have prevented investments in cancer research which could have discovered a cure for cancer: society would be much worse off having conducted merely a partial cost-benefit analysis of the crime problem.

In sum, if we believe that these kinds of measurements and quantitative evaluations are possible, it simply distorts the outcome to select on anything short of general social welfare. This is particularly problematic where the method presents as science and favors particular quantifiable results. And of course, from an external perspective—for those who remain skeptical of such quantification and measurement—nothing really has been reconstructed in the new cost-benefit approaches.

By recovering the roots of contemporary cost-benefit analysis in systems thought and reexamining closely the flaws of systems analysis—in effect, by identifying the “systems fallacy”—it may be possible to better evaluate our ongoing quantitative practices and better identify their proper limits. Many contemporary attempts at reconstruction, it turns out, merely replicate, like a crystalline structure, the systems fallacy: they maximize the wrong objective by means of partial equilibriums that cause distortions, and they fail to appreciate the hidden, value-laden effect of the choice of scope question.

Let me emphasize that nothing in this article should be interpreted as a criticism of being systematic. The systems fallacy is a critique of systems analysis and its derivatives, not of being careful, rigorous, or systematic in one’s thought, logic, argumentation, etc. On the contrary, the criticism at the heart of this paper—the systems fallacy—requires rigor and systematicity to understand properly. In fact, the systematicity of this critique helps to identify better how to resolve or at least best avoid the recurring traps of systems thought, how to implement a more reflexive analytic approach, and how to carefully incorporate certain types of benchmarking into policy analysis.

This essay proceeds in four parts. In Part I, I trace the early history of systems thought from Operations Research to contemporary forms of cost-benefit analysis. In Part II, I articulate and demonstrate the fallacy of systems thought. I follow that, in Part III, with an extended discussion of the case of criminal law and procedure. In Part IV, I turn to a discussion of the larger implications for the field of public policy, and review and discuss current attempts at reconstructing cost-benefit analyses. Drawing on this critical analysis, I then tease out the implications for the proper use of quantification in public policy and point to ways forward that avoid the systems fallacy.
I. A History of Systems Thought From Operations Research to CBA

At the height of the Cold War in the late 1950s and early 1960s, a decision-making technique called Systems Analysis was perfected and began to be applied broadly to matters of national defense strategy and government policy. The brain child of the RAND Corporation, Systems Analysis (“SA”) extended the logic of Operations Research, which had been developed during World War II, from its earlier narrow focus on weapon systems to broader matters of defense strategy, government, and social policy. The systems analytic approach, as its name suggests, would focus on a particular social system, identify the objectives of that particular system, and compare and evaluate the possible alternative ways of optimizing those objectives.

Systems analysis had a formative impact on government decision-making and on public policy. In 1961, Secretary of Defense Robert S. McNamara imposed the method broadly on Department of Defense decision-making, from weapon systems procurement to national defense strategy, under the rubric of Planning, Programming, Budgeting Systems analysis or “PPBS.” Within a few years, President Lyndon B. Johnson directed his budget director to implement PPBS throughout all federal agencies, extending the reach of systems analytic methods throughout the federal government.

A series of subsequent executive orders under Presidents Jimmy Carter, Ronald Reagan, and Bill Clinton would further entrench the use of systems analytic techniques, as would developments in schools of public policy, resulting in the contemporary use of cost-benefit analysis at the very heart of the executive branch, especially through the work of the Office of Information and Regulatory Affairs, established in 1980. In this part, I trace the early history of the expansion of Operations Research as it grew to become known as Systems analysis and PPBS.

A. Operations Research

Military weapon systems analysis, or what was originally called Operations Research or simply “OR,” was developed during World War II as a way to “provide quantitative aids to defense decision makers” with the goal of “optimizing the operational employment of existing weapons (or other military) systems.”\(^5\) The “distinctive approach,” according to the Operational Research Society of Great Britain, was “to develop a scientific model of the system, incorporating measurements of factors such as change and risk, with which to predict and compare the outcomes of alternative decisions, strategies or controls.”\(^6\) Famous early applications of operations research

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\(^6\) In the United Kingdom, where OR largely originated, it was called “operational research.” This definition is from the Operational Research Society of Great Britain, *Operational Research Quarterly*, 13(3):282 (1962), available in the Glossary of Cybernetics and Systems
included studies of the placement and use of aircraft-detection radar devices and of anti-submarine tactics involving depth-charge explosions in the early phases of the Second World War.\textsuperscript{7} Eventually, operations research would apply the same mathematical algorithms and models to larger management problems, such as the efficient determination of transportation routes or warehouse stock control.\textsuperscript{8} From this larger perspective, operations research can best be understood, again in the words of the Operational Research Society of Great Britain, as “the attack of modern science on complex problems arising in the direction and management of large systems of men, machines, materials and money in industry, business, government and defense…. The purpose is to help management determine its policy and actions scientifically.”\textsuperscript{9} The only question is how to optimize efficiency where the measure of efficiency is clearly defined, or, as Edward S. Quade of the RAND Corporation would explain, how “to increase the efficiency of a man-machine system in a situation where it is clear what ‘more efficient’ means.”\textsuperscript{10}

B. SYSTEMS ANALYSIS

During the 1950s, Quade, Alain Enthoven, Charles Hitch, and others at the RAND Corporation would extend this method of analysis from the narrow field of Operations Research, where it had originated, to defense strategy more broadly—essentially, from deciding, for instance, the optimal altitude for a bombing mission to determining broader nuclear engagement policies. The broader application would become known as “Systems Analysis” or “SA.” Systems analysis was often confused with OR, from which it evolved, but it was distinct in several regards. Operations Research tended to have more elaborate mathematical models and solved lower level problems;\textsuperscript{11} in systems analysis, by contrast, the pure mathematical computation was generally applied only to subparts of the overall problem. Moreover, SA took on larger strategic questions that implicate choices between major policy options. In this sense, SA was, from its inception, “less quantitative in method and more oriented toward the analysis of broad strategic and policy questions, [...] particularly [...] seeking to clarify choice under conditions of great uncertainty.”\textsuperscript{12}

\textsuperscript{8} Edward S. Quade, Systems analysis techniques for planning-programming-budgeting. Santa Monica, Calif.: Rand Corp., 1966; p. 3.
\textsuperscript{9} Operational Research Quarterly, 13(3): 282 (1962).
\textsuperscript{10} Quade, Systems analysis techniques for planning-programming-budgeting, 1966, p. 3.

C. THE LOGIC OF SYSTEMS ANALYSIS

The logic of systems analysis is simple and was depicted, most clearly, in a RAND model, Figure 1 of Edward Quade’s RAND Report P-3322 on “Systems Analysis Techniques for Planning-Programming-Budgeting” from March 1966. Quade’s graphics capture best the five key steps of the analytic decision-making method developed in the 1950s and 60s—a method that privileged quantification, modeling, statistical analysis, and a cost-benefit approach.

By way of background and motivating the model, the decision-maker had to have identified a particular problem to address within a particular social sphere—or “system”—and to have a clear idea of the system’s objectives. With the objectives in mind, the decision-maker would then set the proper criterion to evaluate different promising policy alternatives. There would be five steps to the process:

1. **Step 1**, the input, is the set of promising policy alternatives, each of which could possibly advance the objectives of the system. Each alternative policy is then filtered through a model or a set of models to assess its individual attributes in terms, for example, of maintenance costs, manpower requirements, communication capabilities, etc. This produces each policy’s level of effectiveness and cost, which can then be compared using a metric, “the criterion,” which will turn out, as the output, the relative rank of each policy compared to the others. The output, in the far right column at step 5, is the correct

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ordinal ranking of the policy alternatives—or what is, in effect, a full ranking of “The ALTERNATIVES in order of Preference.”\textsuperscript{14}

In order to perfect the method, the operation can be reiterated, testing for sensitivity, questioning assumptions, reexamining objectives, exploring new alternatives, and tweaking the model again and again.\textsuperscript{15}

Edward Quade of the RAND Corporation would present this model, this policy-machine—or, in his words, what “is frequently called a cost-effectiveness analysis... or, alternatively, cost-utility and cost-benefit analyses”\textsuperscript{16}—to federal bureaucrats in a course titled “Executive Orientation in Planning, Programming, and Budgeting,” sponsored by the United States Bureau of the Budget and the Civil Service Commission in late February 1966. “Our purpose,” Quade emphasized, “is to discuss the question of extending military systems analysis to the civilian activities of the government.”\textsuperscript{17} Quade would offer this concise definition of systems analysis:

\begin{itemize}
\item \textsuperscript{14} Quade, Systems analysis techniques for planning-programming-budgeting, 1966, p. 9.
\item \textsuperscript{15} Quade, Systems analysis techniques for planning-programming-budgeting, 1966, pp. 10-11.
\item \textsuperscript{16} Quade, Systems analysis techniques for planning-programming-budgeting, 1966, p. 5 and n.*
\item \textsuperscript{17} Quade, Systems analysis techniques for planning-programming-budgeting, 1966, p. 2.
\end{itemize}
A systems analysis is an analytic study designed to help a decision maker identify a preferred choice among possible alternatives. It is characterized by a systematic and rational approach, with assumptions made explicit, objectives and criteria clearly defined, and alternative courses of action compared in the light of their possible consequences. An effort is made to use quantitative methods but computers are not essential. What is essential is a model that enables expert intuition and judgment to be applied efficiently.18

As this definition makes clear, there are two connotations to the term “systems” embedded in systems analysis: first, there is the idea that there exists a subset of practices and institutions that relate to each other as a virtual “system” and that need to be analyzed separately from other social practices and institutions. Along this first dimension, the analysis focuses on a particular figurative or metaphorical system—such as health care or criminal justice—in order to optimize its functionality. This system is mutually constitutive of the set of promising alternative policies that are studied. The system and the set of policies help define each other. Second, there is the notion of “systems analysis” that involves a particular type of method—one that begins by collecting a set of promising alternatives, constructs a model, and uses a criterion. This involves the comparative analysis of promising policies, using quantification, algorithms, and metrics. Though they can be distinguished, these two connotations are imbricated and are both integral parts of the systems analytic approach: the central idea, in effect, is to select and compare a bunch of policies and choose the one that will maximize the functionality of a figurative system.

D. PLANNING-PROGRAMMING-BUDGETING SYSTEMS

Secretary of Defense McNamara would impose systems analysis under the rubric of Planning-Programming-Budgeting Systems analysis on all military procurement and defense strategy immediately upon taking office under President Kennedy in 1961. That first round of expansion—from narrow Operations Research on weapons systems to broader applications of systems analysis of defense strategy—generated a lot of resistance within the military establishment, targeted primarily at the controversial figure of McNamara himself. But, in Quade’s opinion, by 1966 “there has been substantial progress, and the years since 1961 have seen a marked increase in the extent to which analysis of policy and strategy have influenced decisionmakers on the broadest issues of national defense.”19

President Johnson would expand the reach of the systems analytic method even further, announcing in a statement to members of his cabinet and heads of federal executive agencies on August 25, 1965, that he had directed his budget director, Charles Schultze, to implement the new PPBS method throughout all federal agencies. Johnson emphasized that the new method would “identify national goals with precision and on a

continuing basis,” help “search for alternative means of reaching those goals most effectively at the least cost,” and accurately “measure the performance of programs to insure a dollars worth of service for each dollar spent.”

This expansion of systems analysis to all governmental decision-making was significant—or, in Edward Quade’s words, “possibly even more radical” than the earlier development of Operations Research. It carried the possibility of major repercussions. As Quade explained, alternative policies are not always “obvious substitutes for one another,” nor do they always “perform the same specific function.” Nevertheless, he observed, “education, antipoverty measures, police protection, and slum clearance may all be alternatives in combating juvenile delinquency.” Any one of them could be called for by PPBS analysis. Moreover, systems analytic methods could give us the tools to decide whether, as Quade noted, “additional money might be better spent on space exploration or economic opportunity programs”; or whether to “reduce unemployment to less than 2% in two years or add a certain number of miles to the interstate highway system.” In effect, according to its proponents, systems analysis would allow policymakers to put aside partisan politics, personal preferences, subjective values, and overinflated expectations. As a colleague at RAND and later Secretary of Defense, James R. Schlesinger, would explain: “[Systems analysis] eliminates the purely subjective approach on the part of devotees of a program and forces them to change their lines of argument. They must talk about reality rather than morality.” With SA, Schlesinger argued, there was no longer any need for political wrangling, for value judgments, nor for practical experience—in effect, no need for Aristotelian virtues such as phronesis, nor for Machiavellian notions of virtù. The right answer emerged from the machine-model that evaluates cost and effectiveness; all that was needed was a narrow and precise objective.

E. EXECUTIVE IMPLEMENTATION OF COST-BENEFIT ANALYSIS

As noted, President Johnson was one of the first to impose cost-benefit accounting on federal agencies. Five years into McNamara’s term at the Pentagon and building on McNamara’s success, President Johnson embraced PPBS for his entire administration. “To make this work,” President Johnson emphasized, “will take good people, the best you now have and the best you can find.” (These were, of course, the best and the brightest). A decade later, President Carter’s executive order, E.O. 12044, tasked all executive agencies with the duty to conduct economic impact studies of all

major government regulations. President Reagan’s executive order, E.O. 12291, assigned the responsibility to the Office of Management and Budget, which now oversees and coordinates the economic impact analyses.  

President Bill Clinton continued in this tradition with his executive order requiring economic impact analyses of all significant regulations, E.O. 12866. 

The recent presidential commission report on NSA surveillance succinctly narrates the rest of this history to the present:

In 2011, President Barack Obama issued Executive Order 13563, which renewed and deepened the commitment to quantitative, evidence-based analysis, and added a number of additional requirements to improve regulatory review, directing agencies “to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible” in order to achieve regulatory ends.

A central component of Executive Order 13563 involves “retrospective analysis,” meant to ensure not merely prospective analysis of (anticipated) costs and benefits, but also continuing efforts to explore what policies have actually achieved, or failed to achieve, in the real world. In our view, both prospective and retrospective analyses have important roles to play in the domain under discussion, though they also present distinctive challenges, above all because of limits in available knowledge and challenges in quantifying certain variables. 

As the report makes clear, the influence of systems analysis continues to the present even as the method itself continues to be revised and improved. The commitment to a quantitative, evidence-based, and modeled approach remains strong, although the form of cost-benefit analysis has been updated and focuses now importantly on retrospective analysis. These represent new, more chastened approaches to systems analytic methods. One can see clearly here how systems analysis had shaped the development of cost-benefit analysis and how it continues to influence contemporary efforts to refine CBA.

II. The Problem with Systems Analysis

Systems analysis begins with a set of fungible, promising policy alternatives that are viewed as complete or exhaustive. This set of policy alternatives, in one respect,

29 See President Carter’s executive order E.O. 12044 (tasking all executive agencies with the duty to conduct economic impact studies of all major government regulations); President Reagan’s executive order E.O. 12291 (assigning the responsibility to the Office of Management and Budget); President Bill Clinton’s executive order E.O. 12866 (on the “Economic Analysis of Federal Regulations” (1996)).
30 Report at pp. 50-53.
serves to establish the contours of a metaphorical system, but, in another respect, is itself chosen based on a preconceived notion of the figurative system’s functions and objectives. Importantly, the set of purportedly complete promising alternatives are chosen regardless of the different political values that the policies embody or reflect.

This can be illustrated by Edward Quade’s observation, earlier, that “education, antipoverty measures, police protection, and slum clearance may all be alternatives in combating juvenile delinquency.”31 Notice, first, the mutually constitutive nature of the system and the policies: the system contours (here the juvenile justice system) are going to set the range of policies that are selected, but at the same time, the range of promising policy alternatives will shape the scope of that metaphorical system. Notice, second, that the set of policies is chosen without consideration for the fact that they engage different political values, such as an educated citizenry and a robust public sphere (“education”), political and economic equality or equality of opportunity (“antipoverty measures”), political freedom, security, and civil liberties (“police protection”), as well as urban politics and planning (“slum clearance”). Notice, third, that the apparently simple and narrow definition of the system and its objective (combating juvenile delinquency) has converted the different political values into mere instrumentalities.

The problem with systems analysis is that, first, the simple preliminary act of choosing the set of promising alternatives defines the contours of the whole system and performs practically all the normative work, although this is hidden behind a veil of objectivity and neutrality; second, the set of alternative policies cuts across multiple social and political values, ideals and visions, and as a result, the policy output, if it is implemented, will necessarily affect and shape the society we live in; and third, the method flips politics and policy upside-down, in the sense that the political outcome becomes the direct product of a scientific analysis that is determined by the very selection of the promising alternatives. The method has displaced political contestation and imposed, under the veil of neutral, objective, positivistic science, a mechanism that produces its own political outcome. The method converts political goods—an educated citizenry (education), equality (antipoverty measures), and security (police protection)—into mere levers of public policy, and imposes, under the appearance of neutrality, a new political condition.

There are, then, two clear moments to the problem: there is first the problem of the scope of the metaphorical system, of how we have ham-handedly put together or constructed a system; and there is, secondly, the problem of the system trump, the fact that we unnecessarily pay tribute to the needs and requirements of the system. The scope problems, in essence, become doubly problematic precisely when we allow the system analysis to trump our other social and political values. In effect, systems analysis inverts the relationship between method and politics, and it does so without normative assessment. It subsumes social values (such as education, health care, transportation, or security) to a calculus that converts them into mere instrumentalities of policy decision-

making. Instead of systems analysis serving as a tool to ensure the proper implementation of social and political ideals, the method reshapes and distorts those very ideals and values—“distorts” in the sense that it affects the balance of values in our society without openly engaging, debating, confronting, or negotiating the very shift in the balance of ideals that the method brings about.

A. THE SYSTEMS FALLACY

Another way of saying this is that the systems analytic approach mistakenly assumes that there is a non-normative, objective way to select the proper boundary of a figurative system, or a neutral way to choose which alternative policies to compare to each other. This is mistaken because the very act of defining the scope of a figurative system and the choice of the policies to compare are inherently normative decisions that are value-laden and have deep political effects on society. Whether, for instance, we include the dimension of democratic citizenship in our conception of the “criminal justice system”—for instance, whether we factor into our analysis the effects of incarceration on democratic citizenship—will have deep political consequences on the resolution of questions of criminal law and procedure. But the contours of the criminal justice system are already set or preset by the experts, and are not subject to political contestation.

Those contours are always, at the same time, too large and too small. Too large in the sense that those contours will likely include some promising policy alternatives that would have a significantly distortive effect on our values, such as for instance “slum clearance” if that were to entail, hypothetically, displacing communities or disrupting family bonds. Too large also in the sense that the analysis will give off the appearance of comprehensiveness and make us believe we have considered all the possible options, when in fact the analysis likely has excluded certain alternative approaches. It has inevitably crowded out or discounted some approaches, but has done so silently and, in the process, has made us lose perspective on how narrow our policy space really is. Too small in the sense that the analysis focuses only on one system among a myriad of other systems and therefore tries only to maximize the objectives of one subpart of social well-being—which can seriously undermine overall welfare. This problem with partiality is particularly acute because of the scientific trappings of the method and the tilt in favor of quantifiable variables.

This relates to a number of other problems with systems thought that have been well articulated by other critics, especially in the contemporary debate over cost-benefit analysis. As many have noted—correctly, I believe—a systems analytic approach

privileges certain kinds of quantifiable interests over other, less quantifiable values. By selecting more quantifiable objectives and variables (for instance, juvenile delinquency rates), which the method itself demands, rather than larger social values (for instance, youth welfare), or even larger social ideals (such as, for instance, freedom or education), and by focusing exclusively on measurable outcomes, the systems analytic approach privileges the more quantifiable, measurable, and instrumental factors in the analysis. It is always going to be those variables that can be measured more easily (such as arrest rates or convictions or deaths) that are going to be privileged over more qualitative or soft variables. And the fact is, the more easily measurable, quantifiable, and instrumental factors tend to be associated with the harder social systems (such as the military or prison system), rather than education or community stability. As a result, systems analysis itself has a particular tilt that favors certain types of outcomes. Educational alternatives often will get short shrift because of the difficulty of assessing their long-term benefits. Poverty reduction and other “soft” variables will be more difficult to measure in terms of impact and outcomes. The hard edge of the systems analysis approach simply favors hard systems.

Another common criticism of systems analytic approaches is that the decision makers often do not have the skills, background, knowledge, or time to really implement the type of quantitative analysis necessary to decipher the best alternative, so they tend to guesstimate or “satisfice” and, in the process, simply confirm their personal biases. This is the critique expressed by scholars such as Charles Lindblom, who coined the idea that policy makers just “muddle through,” or Herbert Simon, who coined the term “satisfice.” These critiques raise the problems of bounded rationality, and they too are undoubtedly correct.

But I would like to stay focused on what I consider to be the most central problem of the systems analytic approach: the systems fallacy, namely, the fact that choice of scope is never neutral, objective or systematic, but inherently normative, and it has deep political implications that are masked by the purported scientific nature of the method. Let me demonstrate the systems fallacy using as simple a model as possible so as to avoid myself introducing values or assumptions into the premises of the analysis.

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B. A Demonstration

Let’s begin with a simple model that assumes, hypothetically, that Americans in the aggregate would like to distribute their resources in line with their ideals in the following manner: 50% to education, 35% to health care, and 15% to policing. For those who prefer to rely on revealed preferences, we could hypothesize that these are actual budgeted expenditures. And I should emphasize, at the outset, that this particular distribution is itself, of course, the product of socialization. There is no pre-political starting point or state of nature. These preferences, naturally, have already been shaped and constructed: there is a prior history to this distribution. But for purposes of this simplified demonstration, let’s start the model at one historical moment.

At Time 1, then, this distribution of preferences (call them “revealed preferences” if you prefer, “budgets,” “utilities,” or “priorities”) corresponds, say, to a certain weighting of social values that puts a priority first on an educated and healthy citizenry (let’s call this liberty), and secondly on security and orderliness (let’s call this order). Again, to keep it simple and take only two ideals, we could imagine the relationship as follows: The first values (the liberty associated with an educated and healthy citizenry) are, hypothetically, twice as important as the second set (orderliness and security). This distribution reflects our shared political ideals. It is an aggregate of citizens’ (revealed) preferences, naturally, but represents accurately, let’s imagine, the political condition that is desired by the people. Again, they are not pre-political, they are just the preferences at Time 1.

a. The Problem with Fungible Policy Alternatives

Now let’s say that we pick a social problem—for instance, crime or juvenile delinquency—and we decide to take a systems-analytic approach to the problem. As analysts, we would begin by choosing the corresponding narrow objective—here, reducing crime or juvenile delinquency—an objective that we can all agree on easily once the problem has been posited. We then collect the most promising alternatives to solve the problem. Let’s say, hypothetically, that there are three: (a) investing more in publicly-funded Head Start programs for toddlers; (b) improving pre-natal health care for pregnant mothers, increasing drug rehabilitation programs, and investing in rapid response emergency room care; or (c) increasing the police force. These alternatives are entirely fungible, in the eyes of systems analysis. Then, we conduct detailed cost-benefit analysis and we find that a similar monetary investment will have the greatest return if the third policy, increasing the police force, is adopted. Based on the analysis, we increase the number of police officers and the police budget to address the social problem. Now, the distribution of political goods has changed, and our budget, or goods allocation, becomes something like 33% police investments, 33% public health initiatives, and 33% education.
This redistribution and reallocation of resources, of course, has consequences on what we are privileging in terms of ideals. As we make those new investments in response to crime, we are now investing twice as much in policing than we were before, and this has a consequence on the type of balance of ideals reflected in our society, with order and security now being proportionally more important than before. By putting aside debate over our values and ideals, and simply focusing on a narrow objective, systems analysis effectively has reshaped our social landscape and modified our prevailing values. It has distorted our original preferences and vision—it has altered the world that we want to live in.

By contrast, a more capacious approach that addresses head-on our initial preferences would seek to keep the social values as the primary driver of policy interventions. That would translate, hypothetically, for one scenario at least, into a combination of programs that would invest, say, 50% of resources into Head Start programs, 35% into emergency care improvement, and 15% into increased police—in order to maintain the balance of values as they were originally, to maintain the earlier balance.

In this sense, systems analysis is inherently “too large” in the sense that the method begins with a defined problem and a limited set of promising alternatives that will inevitably distort our political values. It silently imposes new values under the guise of science and displaces political contestation with purportedly scientific criteria. By comparing a range of policies, rather than simply assessing one policy, the method effectively shapes our politics.

b. The Problem of Partial Maximization

At this point, a proponent of systems analysis might respond that it would be easy to factor in preferences regarding ideals in such a way that the analysis would take full account of people’s values. Let’s assume that, as a result of the increased investment in policing, overall social welfare may be lower than what we might have expected from the crime drop, because of a shared distaste for living in more of a police state; in other words, the benefits of reduced crime are offset to some degree by the change in police landscape. That, the proponent will say, can be factored into the analysis. The analyst need only include in the model the distaste (disutility) associated with the shift toward a police state. Preferences along these lines can also be measured and quantified, and made part of the overall welfare calculus. The problem, in other words, can be addressed easily by factoring in people’s tastes and preferences—which should have been done from the beginning, in fact.

Now, if we etch those preferences too deeply into the analysis, then we will simply be back at square one: We will weight our preferences so strongly that our values will determine policy outcomes. If the analysis is going to factor in our taste for police surveillance robustly—as well as all our other tastes for security, for order, for civil liberties, for equality, for an educated citizenry, and so on—then the model is essentially
rigged to produce the outcomes that reflect our social values and judgments. The analysis will reproduce the landscape we want to see realized. What becomes unclear, then, is how deeply to etch our preferences into the model. But the degree of commitment to ideals, the strength of one’s convictions and values, can also be measured and included in the model, a proponent might reply. There is no reason to believe that preferences are etched in stone and that there can never be any trade-offs. A new social problem may have effects on the vision that we have for society.

So, proponents of systems analytic methods might argue, after having incorporated those preferences into the model, a systems analytic approach can find real efficiencies that will actually result in increased welfare and greater utility overall. For instance, systems analysis might find efficiencies, say, by using police to address juvenile crime, that will outweigh the disutility and that would thereby allow us to invest savings into education and poverty-reduction. Even though there may be a shift in ideals, a proponent may argue, Americans will value the end state more. They will gain some orderliness proportionally to liberty, but will be happier overall based on their own tastes, preferences, or utilities.

This is the welfare economist’s response—a type of response consistent, for example, with Louis Kaplow and Steven Shavell’s thesis in *Fairness versus Welfare* (2002).\(^35\) In fact, Kaplow and Shavell say precisely this. As they write and emphasize, “The conception of individuals' well-being that we consider, in the tradition of welfare economics, is a comprehensive one. It encompasses not only the direct benefits that individuals obtain from the consumption of goods and services, but also individuals’ degrees of aesthetic fulfillment, their feelings for others, and anything else that they value. What factors are included in well-being—and with what weight—is understood subjectively, in terms of what actually matters to individuals.”\(^36\)

As if anticipating the argument here (section a, supra), Kaplow and Shavell add: “An implication of our broad definition is that even tastes for fairness are included: Just as an individual might derive pleasure from art, nature, or fine wine, so might an individual feel better with the knowledge, for example, that vicious criminals receive their just deserts. This view, under which tastes for fairness are counted with a weight to be determined empirically, based on the actual weight, if any, that individuals place on such tastes, must be sharply distinguished from the view of notions of fairness as independent evaluative principles, which is the subject of our critique.”\(^37\) In other words, welfare economics can incorporate peoples’ tastes, preferences and values regarding social and political ideals—and still optimize, i.e. shift policies around in order to find efficiencies that can be reinvested in other political ideals.


This is undoubtedly right, at least at a theoretical level—or, at a minimum, I am perfectly willing to assume that it is right. But the problem is, even from a welfare economist’s perspective, that systems analysis is then maximizing the wrong thing: it is trying to resolve one particular social problem, rather than trying to maximize general social welfare. In the process, there is absolutely no way to know whether the resolution of that particular systemic problem has increased or decreased overall welfare, or whether there are other policy alternatives regarding other social problems that would do better at promoting overall social welfare. In other words, from an internal perspective—internal to welfare economics—systems analysis is dangerous: it is trying to optimize the wrong objective.

From a social welfare point of view, then, it is crucial not to engage in partial welfare analyses by focusing on one figurative system: that would simply distort overall welfare. Another way to say this is that systems analysis does not address the question of how a particular social problem, or social system for that matter, becomes the focus of our problem-solving. The problem of crime was turned into a major national issue at a particular moment in history—in about 1964, during Barry Goldwater’s presidential campaign—and would become a key campaign issue for Richard Nixon. In part as a backlash to the Civil Rights movement, and for other reasons as well—including the rise of the anti-War and other social movements, racial conflict, and increased crime rates—crime would become in the 1960s a social problem that would trump others—housing, poverty, public health, etc. But there was nothing natural or obvious about that. Illiteracy, malnourishment, poverty, racism, inequality, homelessness, etc. could also have remained or become more pressing social issues.

In other words, we construct, we produce social problems, we render visible certain social issues, often through a crisis—and we keep invisible other social problems—in a way that then puts onto our counting table particular costs and benefits. It

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is in the production of problems as problems that we produce the possibility of shifting social values. We render visible one problem, while other problems remain invisible and illegible. In the process, we load the systems analysis with very specific concerns that have identifiable implications. We shape the balance of our ideals by means of problem creation. The only way to do systems analysis properly, without causing systemic distortion, is to do general welfare analysis at the highest and broadest level. Barring that, the analysis is inevitably going to insert error.

In this sense, systems analysis is always “too small” in the sense that the partial or delimited analysis of a system, short of a full-blown welfare calculus, will distort the decisional outcome. It maximizes the wrong objective, namely the efficiency of one metaphorical system rather than overall welfare. Here again, the pretense to comprehensiveness masks the value-laden, inevitably normative choice of scope. And it is that pretense to objectivity, as well as the tilt in systemic thought that favors hard variables, that is particularly problematic in this case. It produces not only an internal preference for policies that are associated with harder systems, such as, for instance, the “criminal justice system” rather than the “educational system,” but it manages to persuade more forcefully because of its apparent rigor and systematicity. It has a rhetorical power that is often unmatched, which is precisely what then allows systems needs and requirements to trump other social and political values. The method ends up being self-reinforcing. This is particularly the case with the more established systems, such as, precisely, the “criminal justice system.”

III. THE CASE OF CRIMINAL LAW AND CRIMINAL PROCEDURE

The field of criminal law and procedure provides a striking illustration. Systems analytic logics exert significant influence on the field and, as a result, the problem of the systems fallacy is acute. This is in large part due to the influence of Operations Research on the study of criminal justice: it is fair to say that the systems analytic approach shaped the field of criminal justice and is largely responsible for crystalizing the notion of a “criminal justice system” that, today, grounds practically all research and practice in the area. Because of this, systems analytic logics continue to play an important role in the field of criminal law and criminal procedure.

Precisely when systems analysis was in crescendo in the 1960s, a number of judges and legal scholars began to embrace a systems analytic approach to judicial decision-making and legal reasoning. It is an approach that assumes the existence of a “criminal justice system,” with particular functions and objectives, and that orients itself toward optimizing those systemic objectives. The approach can take either of two forms: (1) what I would call an “internal” approach in which the judicial decision-maker views him or herself and the surrounding legal structures (the legal institutions and practices) as an integral part of the “criminal justice system” and consequently tries to optimize the functioning of that integrated system with the objective, say, of controlling crime,
improving the efficient management of populations, or otherwise enhancing the functionality of the system; and (2) what I would call an “external” form in which the judicial decision-maker views him or herself and other legal actors as outsiders to the “criminal justice system” and consequently defers to the actors within the system (such as the police, corrections officials, parole board, etc.).

The reliance on these two styles of reasoning, however, produces the systems fallacy. These styles of reasoning privilege systems-related interests, particularly the more quantifiable ones, over the competing concerns that are at issue in the context of the criminal sanction, and do so under the guise of neutrality and objectivity. In elevating systems-related interests over other values, they produce a false dichotomy between objective system needs and subjective values that is fundamentally corrosive to the decision-making process and to the larger social outcomes, because they prevent a full articulation, open discussion, and comprehensive weighing of the values at the heart of criminal law and procedure. By thinking critically about the technical weaknesses of systems analysis, we may be able to move past these styles of reasoning toward a more capacious and promising way to theorize and resolve matters of crime and punishment: a way forward that would effectively discard the misleading notion of a “criminal justice system” in order to embrace a more reflexive consideration of the values that are implicated by the criminal sanction.

In order to appreciate this, it may be important first to trace the history of the influence of systems analysis on the field, starting with the influence on criminal justice.

A. THE IMPACT OF SYSTEMS THOUGHT IN CRIMINOLOGY AND CRIMINAL JUSTICE

During the Progressive Era, reformers had already gravitated toward a crude notion of “systems,” especially with regard to the treatment of juvenile offenders. One of the first uses of the term “criminal justice system” occurred in a 1939 report on Youth in the Toils, a study conducted on behalf of The Delinquency Committee of the New York City Boys Bureau, an organization that addressed the problems of homeless youth. In the immediately following years, the expression “criminal justice system” would be used in several other publications, each time to refer again to the issue of juvenile delinquency. The expression was used, for instance, in a 1941 issue of Federal Probation,40 a 1942 issue of the American Bar Association Journal titled “The Criminal Youth Problem,”41 and a 1942 article in Law and Contemporary Problems, “Existing Provisions for the Correction of Youthful Offenders.”42

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But these loose references to a “criminal justice system” would gain new analytic power with the emergence of systems analysis, such that, by the second half of the twentieth century, the field of criminal justice began to be understood as a relatively enclosed system in which particular sets of actors (policemen, prosecutors, judges, probation officers, correctional guards, wardens, parole board members, etc.) operate a defined set of institutions (police, courts, jails, prisons, parole supervision, etc.) to promote a distinct set of systems objectives (crime control, population management, service needs, etc.) and to produce a functioning structure of criminal justice.

Systems analysis played an important role in crystalizing the notion of a “criminal justice system.” A genealogic link can be traced at both the individual and institutional levels. Alfred Blumstein, for instance, a towering figure in American criminology, himself began as an operations researcher and was president of the Operations Research Society of America (ORSA)—and tellingly, his appointment at Carnegie Mellon is as University Professor of Urban Systems and Operations Research.

In a fascinating memoir titled “An OR Missionary’s Visits to the Criminal Justice System,” Blumstein refers to himself as an “OR Missionary” and traces his missionary activities in the area of criminal justice. Reflecting back on his trajectory, Blumstein would write that “the missionary function was an important role of OR, and so I encouraged OR folks to look to missionary opportunities. That was well before I immersed myself fully in missionary activity with the criminal justice system.”

Blumstein viewed his “missionary role,” in his own words, as “bringing OR perspectives to the ‘heathens’ in a particular domain—those who have not yet adopted quantification, modeling, system perspectives, and planning that characterize the hallmark of OR.”

Blumstein was not alone. As he observed, “there have been many other OR people, particularly Arnold Barnett, Jon Caulkins, Jan Chaiken, Peter Greenwood, Richard Larson, and Michael Maltz, who have had their own experiences with the CJS [criminal justice system], and many of them have received honors from the OR community as well as the CJS community.” A lengthy and useful review of OR contributions to the criminal justice system is provided in Michael Maltz’s 1994 chapter on “Operations research in studying crime and justice: Its history and accomplishments.”

46 Blumstein, 2007, p. 22.
But one could also trace an institutional genealogy, located in New York City during the 1970s.

a. The New York City RAND Institute

John Lindsay was elected mayor of New York City in 1966 and took office promising to reform city government with more efficient cost-benefit budgeting—specifically, with Planning-Programming-Budgeting System analysis. Mayor Lindsay intended to bring the new PPBS technique to New York City “to improve budgeting and operations.”

At the time, violent crime in the City was on the rise. The crime problem was particularly acute in public housing projects and so-called “welfare hotels.” Mayor Lindsay invited the RAND Corporation to develop new strategies to reduce and prevent crime; and within a few years, Lindsay had helped establish the New York City RAND Institute as a joint project of the City and RAND Corporation.

In January 1968, Mayor Lindsay hailed New York City’s new arrangement with the RAND Corporation to tackle crime prevention in the City:

This agreement will greatly assist our introduction into city agencies of the kind of streamlined, modern management thinking that Robert McNamara applied in the Pentagon with such success during the past seven years. ... I regard this as the most important development in the search for effectiveness in city government in many, many years.

With crime on the rise, the primary focus of the RAND satellite would be the New York City Police Department. At a news conference on January 8, 1969, Mayor Lindsay and Henry Rowen, the president of RAND and previously Deputy Assistant

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49 By the early 1970s, violent crime in New York City had increased sharply, with homicide rates up an order of magnitude from around 4 per 100,000 inhabitants in the early 1960s to over 19 per 100,000 by 1972. See FBI Uniform Crime Reports for New York City (rate of murder and non-negligent manslaughter per 100,000 residents).


Secretary of Defense under McNamara, unveiled the new project with great fanfare: an initial contract with the City worth $607,000, a Madison Avenue office “staffed by 40 economists, sociologists, engineers, cost analysts and other researchers,” and four focus areas, the most important of which would be the NYPD (the other three being the fire department, housing administration, and health services). Everyone expected a tight collaboration. As the New York Times suggested, “The city’s relationship with RAND would be similar to the one RAND has had with the Air Force since World War II” — one could hardly imagine a tighter relationship than that.

Once established, the New York City RAND Institute immediately began to tackle the crime problem with a number of reports and recommendations about how to improve the efficiency of police services. The first series of reports were extremely narrow operations research-type reports, with titles such as “A Hypercube Queueuing Model for Facility Location and Redistricting in Urban Emergency Services” (Richard C. Larson, R-1238-HUD, 1973), “Response of Emergency Units: The Effects of Barriers, Discrete Streets, and One-Way Streets” (Richard C. Larson, R-675-HUD, 1971), “Allocation of Emergency Units Response Areas” (Jan M. Chaiken, P-4745, 1971), “Analysis of the Night and Weekend Arraignment Parts in the Bronx and Queens Criminal Courts” (John B. Jennings, R-1236-NYS, 1973), “Using Simulation To Develop and Validate Analytical Emergency Service Deployment Models” (Edward Ignall, Peter Kolesar, and Warren Walker, P-5463, 1975), and “Determining the Travel Characteristics of Emergency Service Vehicles” (J. Hausner, R-1687-HUD, 1975). These studies applied complex mathematical models to examine minute dispatching and routing efficiencies. They resembled the classic early applications of operations research outside the military to matters such as determining “how Post Office pick-up trucks should be routed to collect mail from deposit boxes, or whether computers should be rented or purchased, or what type of all-weather landing system should be installed in new commercial aircraft.”

Gradually and interspersed in these operation research-type reports, there emerged a number of systems analysis-type studies. The contours of the approach were captured well by the New York Times in 1968 when it defined it as the “method of analyzing a problem by listing the desired objectives and available resources and then detailing alternative methods of using the resources to accomplish the objectives.” RAND’s systems analytic studies did indeed focus on a narrow objective — preventing crime — and they would embrace a wide range of different alternative policies to try to determine the most efficient. And so, within a few years, with crime on the rise and a ready method at hand, RAND and the NYC RAND Institute were deeply involved in problem-solving crime in public housing using a systems analysis approach.

b. The 1971 Liechenstein RAND Report

An illustrative study was Michael I. Liechenstein’s report issued in June 1971, which addressed the objective of, as the title suggests, “Reducing Crime in Apartment Dwellings: A Methodology for Comparing Security Alternatives.”57 The study, which was sponsored by Mayor Lindsay’s Criminal Justice Coordinating Council, analyzed techniques for improving security in New York City Housing Authority buildings. It took a “broad operational view of a security system,”58 analyzing fifteen alternative policies, including tenant training and education, tenant patrols, tenant qualifications to live in the projects, extended recreational opportunities for teenagers, rent rebates, elaborate building-entry restrictions, locked lobbies, intrusion detectors, weapon detectors, surveillance, and increased police or guard manning.

In order to compare the alternatives, the study developed “effectiveness criteria” and then coupled those to “compatibility and cost criteria to derive estimates of an overall figure of merit (e.g., the ration of effectiveness-to-cost with a constraint on either minimum effectiveness or maximum cost).”59 In addition to the security effectiveness and compatibility criteria, the report also listed cost-benefit criteria: “Research and development cost (equipment, maintenance, administration before production); Capital cost (equipment, maintenance, and administrative costs during production); Operating cost (equipment, maintenance, administration costs during use); Scrap value (residual value at end of use); Expected total benefit.”60

The report generated a graph of the cost-effectiveness of all fifteen alternatives:

58 Liechenstein, Reducing Crime in Apartment Dwellings, 1971, p. 3.
The fifteen different measures ranged the political spectrum—from education for low-income project tenants on issues of criminal offending, preventive measures, and self-defense, to providing recreational facilities for poor urban teenagers, to offering subsidies and other positive financial incentives to poor tenants, to raising admissibility and tenure standards for housing assistance, to increasing police presence. They included everything from education, to recreation, to target-hardening, to policing. Based on the quantitative analysis, the report concluded that the most cost-effective preventive measure was an increased police force and more guard-manning.

This was, one could say, the pinnacle of systems analytics in relation to the criminal justice system. For RAND, the “criminal justice system” was a natural space for systems analytics. To be sure, part of the attraction of systems analysis talk at an institution like the New York City RAND Institute was an artifact of the consultancy business; and the NYC RAND Institute in fact folded in 1975 amidst significant—I might add, ironic—controversy over Lindsay’s profligate spending on consultants.61 But nevertheless, the notion of “the criminal justice system” would stick and the systems analytic approach would become increasingly important. It would lead to a whole set of

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institutions and think tanks, across the political spectrum, that would take as its object the criminal justice system—such as the Vera Institute of Justice, the Urban Institute, the Institute for Law and Justice, the Police Foundation, the Police Executive Research Forum, to name a few. These organizations would centrally embrace the notion of “systems.” The Vera Institute’s very logo is “Making justice systems fairer and more effective through research and innovation.” And systems analytic types of methods and reasoning would continue to develop, including importantly in cases like COMPSTAT in New York City.

Today, the idea that there is a “criminal justice system” has become so dominant that practically everyone thinks about crime and punishment through a systems analytic lens and uses the language and logic of systems in a natural and reflexive way. We are so deeply entrenched in this view of criminal justice that it is practically redundant to observe that we conceive of the area in terms of a system. It is practically impossible today to work or speak in the area without referring to it as the “criminal justice system.” The systems approach that crystalized in the 1960s dominates our way of thinking about the field today.

B. THE INFLUENCE OF SYSTEMS ANALYSIS ON CRIMINAL LAW AND PROCEDURE

The influence of systems analysis in the field of law writ large is a complicated matter that would require lengthy treatment and would lead us astray from the focus of this discussion—namely, criminal law and criminal procedure. At the broadest level, the idea that the field of law could be usefully understood through the lens of a “legal system” percolated through Anglo-American legal thought for centuries. The use of biological systems metaphors was prominent in the nineteenth century on the Continent. And in the twentieth century, the metaphor of systems continued to play an important

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62 See The Vera Institute of Justice’s homepage at http://www.vera.org/ (emphasis added).

63 See, e.g., Lord Chief Justice Wilmot’s declaration, in The King against Almon (1765), to the effect that “we must take the whole [legal] system [of justice] together, and consider all the several parts as supporting one another, and as acting in combination together, to attain the only end and object of all laws, the safety and security of the people.” Sir John Eardley Wilmot, Notes of Opinions and Judgements Delivered in Different Courts [1757-1770] (London: Luke Hansard, 1802), pp. 258-259. Of course, the simple metaphor of a “system” to describe natural and social phenomena went as far back as Plato, who used a biological system metaphor in describing his utopic vision in The Republic; Leibniz also incorporated a system metaphor in his metaphysics in the Monadology.

64 According to Rottleuthner, the modern use of the system metaphor in legal thought should be traced to biological metaphors used by nineteenth century legal historians and theorists such as Savigny, Jhering, Van Krieken, and Otto Gierke (though Rottleuthner is careful to note that he has included these thinkers as representatives of a trend, not the originators of the metaphor). Savigny, for instance, argued that law develops “from inner force and necessity, independently of chance and individual will” (quoted in Rottleuthner 1987, 103). Jhering spoke of “the legal institutions as ‘the skeleton of the law’ (1852: 36), or [referred to] the heart, blood, arteries or pulse of the legal organism (1853: 44)” (Rottleuthner 1987, 103). (Rottleuthner notes that van Krieken, in 1873, traced the origin of the metaphor in its current usage to Schelling and Fichte).
role in legal thought, as reflected in the writings of Niklas Luhmann and the emergence of autopoeisis theory, which drew in large part on the work of Talcott Parsons.

But in the specific legal field of criminal law and criminal procedure, systems analytics had a distinct influence because of its direct link to the “criminal justice system.” Just as systems analysis began to crystallize the notion of a “criminal justice system,” a distinct style of judicial decision-making and legal reasoning based on a systems analytic approach would emerge and begin to encroach upon an earlier way of thinking about punishment as a question of sovereign right.

Here too, one could trace a genealogy that would link particular individuals and institutions. The former dean at Harvard Law School, James Vorenberg, who was a formidable figure in criminal law and procedure, worked closely with Alfred Blumstein—respectively, as Executive Director and as Director of Science and Technology of the 1967 President’s Commission on Law Enforcement and the Administration of Justice—to introduce systems analysis into criminal law reform. The 1967 President’s Commission conducted a broad-ranging analysis of the state of the American criminal justice system, and its final report, “The Challenge of Crime in a Free Society,” represented an early model of the application of OR to criminal justice. One of the Commission report’s main accomplishments was precisely to establish “a ‘systems point of view’ as a basic frame of reference, and a better understanding of the ‘hydraulic’ nature of that system.”

As Charles F. Wellford suggests, Vorenberg undoubtedly was a large influence on the Commission’s decision to implement systems analysis, as was “the decision of the

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65 There is a growing literature on the notion of the legal system as an “autopoietic” system, much of which is focused on explaining the “unity”—or partly “closed” character—of legal systems, and the survival of that “closedness.” Niklas Luhmann is a central theorist of this view, and so is Gunther Teubner. See also George Fletcher, Paradoxes in Legal Thought, 85 Colum. L. Rev. 1263 (1985).
67 The Challenge of Crime in a Free Society, The President’s Commission on Law Enforcement and the Administration of Justice, 1967. At the time of his appointment to the Commission as Executive Director, James Vorenberg was also the Director of the National Crime Commission.
Attorney General and Secretary of Defense to allow the Institute for Defense Analysis, and in particular Alfred Blumstein, to be a part of the President’s Commission. Also important was Harvard Professor Lloyd Ohlin, who had applied systems thought to the American Bar Foundation criminal justice surveys of the 1950s and to much of his work on juvenile justice, prediction, and corrections.

In large part, the systems approach was introduced in the 1967 President’s Commission as an alternative to experimentation. As Wellford documents, “Vorenberg, Ohlin, Blumstein, and others emphasized the role of [systems] research” because “experimentation is frequently impossible” in the criminal justice arena. Wellford continues:

So the creation of a model of the system, one that could be manipulated to determine effects, would be a critical first step in understanding how improvements could be achieved. The flow chart was a first step in identifying the components of the system which could be manipulated to determine their effect on the remainder of the system. From this goal of improvement, and in recognition of the difficulty of the experimentation, the Commission moved to introduce not only a concept of criminal justice, but a methodology of system analysis including mathematical modeling as a way to identify and evaluate effective changes.

The 1967 President’s Commission is a landmark for locating criminal justice within a “system” and for making recommendations based on the functions and objectives of the system. Systems analysis features prominently in the law reform project in two central respects: first, systems analysis is the method by which the criminal justice system, as a “system,” is analyzed and upon which the recommendations are based. The Commission outlines, using as a visual aid complex flow-charts that recall early RAND reports, the entirety of the criminal justice system, the *modus operandi* of its individual subparts, the relative success of each part’s performance, its personnel and resource allocation, and recommendations for how institutional practices, resources and personnel might be altered to increase success. Second, as part of these recommendations, the

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72 The differences between systems analysis and an experimental approach are important. Wellford’s insight here helps to explain why the types of contemporary experimentalist approaches, such as the democratic experimentalism of Charles Sabel and William Simon, avoid the systems fallacy. See *infra*, Part IV.C.
Commission calls for the future implementation of systems analysis at the local level—the level of the subpart—in order to assess future functional needs. Vorenberg, Blumstein, Ohlin, and their colleagues used systems analysis in order to diagnose systemic problems of the criminal justice system, and subsequently recommended that more such analysis be applied in order to continue the practice of diagnosis and the specific kinds of prescription it tends to generate.

Dean Vorenberg also headed up, with his colleague Paul Bator, a distinguished study group of the American Law Institute on criminal justice. That commission was the first survey of its kind in the United States, and it sought to map out the various levels of the American criminal justice system (and “non-system,” as its authors sometimes termed it).

There were, of course, others with OR backgrounds. Associate Justice John M. Harlan II, who was appointed to the Supreme Court in 1955 and would influence much of the Warren Court’s criminal procedure jurisprudence, had “headed up the Eighth Air Force Operations Analysis Section (OAS)” during World War II as part of an effort to introduce OR into U.S. Air Force tactics. Nicholas Katzenbach, who served as Attorney General during President Lyndon Johnson’s administration, headed the Office of Legal Counsel in the Kennedy administration, and taught law at Yale and then Chicago, also had an OR background and would serve as chair of the report of the 1967 President’s Commission.

Although it would be possible to dig deeper into these personal and institutional genealogies, the influence of systems analysis on criminal law and procedure was probably more indirect: Systems analysis was in the air in the 1960s and it was having a direct influence on criminology and the study of the “criminal justice system.” At exactly

the same time, there began to be a distinct style of judicial decision-making that rested on a systems analytic approach. This style of reasoning would take two distinct forms.

a. The Internal Approach: Models of the Criminal Justice System

In one form, the judicial decision-maker considers criminal law and procedure adjudication to be part of the “criminal justice system” and attempts to maximize the objectives of the system. Several of the landmark Warren Court opinions in criminal procedure reflect this internal systems analytic approach. The decision in *Miranda v. Arizona*\(^79\) is an interesting illustration. Chief Justice Warren’s opinion for the Court integrates a systems analysis, not as to the narrow legal question at issue—namely, whether the Fifth Amendment applies to custodial interrogation at the police precinct—but as to the remedy, once the legal issue has been resolved. In other words, once Chief Justice Warren has made the strictly legal decision at the heart of *Miranda*—namely, once he decides to extend the Fifth Amendment right against self-incrimination from the courtroom into the police custodial setting\(^80\)—he then turns, effectively, to systems analytic reasoning to determine the remedy. Though he does not, in fact, collect *all* possible “promising alternatives,” he does evaluate and endorse, on effectiveness grounds, the specific framework of *Miranda* warnings—and then encourages Congress to do the rest:

> It is impossible for us to foresee the potential alternatives for protecting the privilege which might be devised by Congress or the States in the exercise of their creative rule-making capacities... We encourage Congress and the States to continue their laudable search for increasingly effective ways of protecting the rights of the individual while promoting efficient enforcement of our criminal laws. However, unless we are shown other procedures which are at least as effective in apprising accused persons of their right of silence and in assuring a continuous opportunity to exercise it, the following safeguards must be observed.\(^81\)

Right here, Chief Justice Warren embeds a partial systems analysis within his remedial discussion. His discussion sounds in line with systems analysis: it sets out a clear objective, and then evaluates different options, keeping the functionality of the system at the heart of the discussion:

> Our aim is to assure that the individual’s right to choose between silence and speech remains unfettered throughout the interrogation process. A once-stated warning, delivered by those who will conduct the interrogation, cannot itself suffice to that end among those who most require knowledge of their rights. A


\(^81\) *Miranda*, 384 U.S. at 467 (1966).
mere warning given by the interrogators is not alone sufficient to accomplish that end.

Chief Justice Warren then evaluates different promising alternatives as if he is putting them through a model, trying to decipher their individual attributes, in order to compare and rank them:

The presence of counsel at the interrogation may serve several significant subsidiary functions as well. If the accused decides to talk to his interrogators, the assistance of counsel can mitigate the dangers of untrustworthiness. With a lawyer present the likelihood that the police will practice coercion is reduced, and if coercion is nevertheless exercised the lawyer can testify to it in court. The presence of a lawyer can also help to guarantee that the accused gives a fully accurate statement to the police and that the statement is rightly reported by the prosecution at trial.\(^{82}\)

Notice the systems functionality discourse: Warren’s analysis is aimed at ensuring that the system functions properly and effectively—and promises to leave it in place unless and until Congress would provide for, essentially, an equal or higher ranking “alternative.” In the process, Warren is unquestionably activist in setting out the necessary pre-interrogation procedures, going so far as to create, out of whole cloth, a Fifth Amendment right to counsel as opposed to the Sixth Amendment right to counsel (and a right to the appointment of Fifth Amendment counsel if indigent).

The subsequent *Dickerson* litigation, several decades later, would turn precisely on whether Congress’s response in 1968—18 U.S.C. § 3501—was more effective than the *Miranda* warnings.\(^{83}\) This is, essentially, a systems analysis type of question: to resolve it, we need to load both the *Miranda* warnings and the 18 U.S.C. § 3501 procedures into Quade’s model and see whether the latter exceed the level of protection afforded by the former. Of this, Warren was clear: “unless other fully effective means are adopted to notify the person of his right of silence and to assure that the exercise of the right will be scrupulously honored, the following measures are required.”\(^{84}\)

Note that the systems analytic material, in the *Miranda* decision, does not address the legal issue at hand—namely the extension of the Fifth Amendment right to police custody—a legal question that is resolved through a far more extensive, capacious, and wide-ranging discussion of policing and democracy in the modern era, and that ranges from Lord Devlin’s writings and English procedure since 1912, to India, Ceylon and Scotland, to democratic theory. But it is present at the remedies stage. In that sense, it


\(^{84}\) *Miranda*, 384 U.S. at 479 (1966)
could possibly be thought of more in line with Operations Research than with Systems Analysis—an important difference that is worth keeping in mind with regard to the proper scope of cost-benefit analysis.

It is interesting to note that Justice Harlan’s dissent in *Miranda* also has a systems analytic ring to it.\(^85\) (Recall that Harlan had led the Eighth Air Force Operations Analysis Section during World War II). Harlan focuses on a detailed comparison of the different alternatives along policy grounds: “Viewed as a choice based on pure policy, these new rules prove to be a highly debatable, if not one-sided, appraisal of the competing interests, imposed over widespread objection, at the very time when judicial restraint is most called for by the circumstances.”\(^86\) Harlan’s Due Process jurisprudence is, in fact, guided by a systemic approach: as he writes, the Due Process Clause cases “show that there exists a workable and effective means of dealing with confessions in a judicial manner” and they reveal “the baseline from which the Court now departs and so serve to measure the actual as opposed to the professed distance it travels.”\(^87\) Harlan challenges the majority in *Miranda* not only on legal, but on policy grounds, in what sounds very much like systems discourse.\(^88\)

More recent canonical Supreme Court decisions in the criminal law and procedure area reveal perhaps even more systems analytic reasoning on the core constitutional issues at stake. Justice Powell’s opinion for the Court in *McCleskey v. Kemp* (1987) is a good illustration.\(^89\) Justice Powell adopts a systems perspective when he analyzes the role of discretion (prosecutorial, judicial, jury, and other) in the functioning of the criminal justice system—as a counterweight to the legal challenge involving racial discrimination. The opinion is written in a way that includes the judiciary, the jury, the attorneys, etc., as part of the system, and in this sense, represents an instance of the internal style of systems analytic decision-making. For Justice Powell, the legal claim itself is a challenge addressed to the very functioning of the criminal justice system:

McCleskey challenges decisions at the heart of the State’s criminal justice system. “[O]ne of society’s most basic tasks is that of protecting the lives of its citizens and one of the most basic ways in which it achieves the task is through criminal laws against murder.” *Gregg v. Georgia* (1976) (WHITE, J., concurring). Implementation of these laws necessarily requires discretionary judgments. Because discretion is essential to the criminal justice process, we would demand

\(^85\) [talk more with Kent Greenawalt about this]


\(^88\) See *Miranda*, 384 U.S. at 517 (1966) (HARLAN, J., dissenting) (“What the Court largely ignores is that its rules impair, if they will not eventually serve wholly to frustrate, an instrument of law enforcement that has long and quite reasonably been thought worth the price paid for it. There can be little doubt that the Court’s new code would markedly decrease the number of confessions... To suggest or provide counsel for the suspect simply invites the end of the interrogation... How much harm this decision will inflict on law enforcement cannot fairly be predicted with accuracy”).

exceptionally clear proof before we would infer that the discretion has been abused.90

Notice how the system’s needs become necessities and how the functioning of the criminal justice system naturally heightens the legal burden imposed on the petitioner McCleskey. The result is that the system’s “needs” are privileged. In rejecting McCleskey’s challenge, Powell emphasizes that “McCleskey’s argument that the Constitution condemns the discretion allowed decisionmakers in the Georgia capital sentencing system is antithetical to the fundamental role of discretion in our criminal justice system.”91

The analysis is framed in terms of system requirements and system functionality, and so, Powell concludes: “Where the discretion that is fundamental to our criminal process is involved, we decline to assume that what is unexplained is invidious. In light of the safeguards designed to minimize racial bias in the process, the fundamental value of jury trial in our criminal justice system, and the benefits that discretion provides to criminal defendants, we hold that the Baldus study does not demonstrate a constitutionally significant risk of racial bias affecting the Georgia capital sentencing process.”92 From this particular systems analytic perspective, the risk of harm associated with racial prejudice does not undermine the value of discretion to the overall system: “Apparent disparities in sentencing are an inevitable part of our criminal justice system,”93 Powell observes. Powell’s opinion in McCleskey is really an idealtype of a decision that takes a systems analytic approach to the criminal justice system. Ultimately, the question ends up revolving centrally around the system’s need for discretion.

The Supreme Court’s decisions regarding the principle of finality in the habeas corpus context is another good example. The argument for foreclosing consideration of certain issues past a certain point in time (for instance, once the petitioner has entered collateral review) rests predominantly on the argument that there are certain things the criminal justice system needs in order to function properly—and one of those is finality. Justice O’Connor’s opinion in Teague v. Lane, for instance, can serve as an illustration.94 The question there was whether a habeas petitioner is entitled to the benefit of a new legal rule (in that case, whether the Sixth Amendment fair cross section requirement would apply to a petit jury) if the rule is announced after the petitioner has exhausted his direct appeals and while the petitioner is in collateral review. Justice O’Connor, for the Court, adopted Justice Harlan’s retroactivity standard, which barred the retroactive effect of new rules to cases pending in collateral review (with two narrow exceptions).

Justice O’Connor’s reasoning tracks perfectly the systems analytic approach. Justice O’Connor begins as follows:

90 McCleskey, 481 U.S. at 297 (1987).
Application of constitutional rules not in existence at the time a conviction became final seriously undermines the principle of finality which is essential to the operation of our criminal justice system. Without finality, the criminal law is deprived of much of its deterrent effect.95

Justice O’Connor then reviews the cost-effectiveness of the alternative policy and finds that it is prohibitive:

The “costs imposed upon the State[s] by retroactive application of new rules of constitutional law on habeas corpus ... generally far outweigh the benefits of this application.” Stumes (Powell, J., concurring in judgment). In many ways the application of new rules to cases on collateral review may be more intrusive than the enjoining of criminal prosecutions, cf. Younger v. Harris, for it continually forces the States to marshal resources in order to keep in prison defendants whose trials and appeals conformed to then-existing constitutional standards. … We find these criticisms to be persuasive, and we now adopt Justice Harlan’s view of retroactivity for cases on collateral review.96

This systems analytic approach, interestingly, has also been used in recent scholarship to defend the principle of finality in cases of purported actual innocence. William Baude, for instance, argues that if “courts must allow every prisoner to perpetually pursue claims of innocence, it might push an already overburdened judicial system to the brink.”97 Such a right to not be executed if innocent would render the criminal justice system dysfunctional. Perfect accuracy is not the systems objective, Baude emphasizes: “perfect accuracy is not the goal of the criminal justice system.”98 Notice how the neutral objectives of the system drive the analysis.99

Most capital habeas litigation reflects this. For instance, in Doyle Lee Hamm’s case, presently under review on petition for certiorari at the United States Supreme Court, a central issue is whether the federal courts can review the validity of a prior felony conviction from 1978 that was used as an aggravating circumstance to enhance Hamm’s sentence to death in 1987.100 As a pretty straightforward matter, the prior felony conviction is facially invalid: the plea hearing from 1978 is unconstitutional, on its face, because the circuit judge in Tennessee in 1978 did not inform Hamm of the constitutional rights that he was waiving by pleading guilty, in clear violation of Boykin v. Alabama.101 This problem has slowed the case down to a crawl, and Hamm has been on death row for 27 years in part because of this festering sore—and yet, not a single judge to date has

95 Teague v. Lane, 489 U.S. at 309 (1989).
96 Teague v. Lane, 489 U.S. at 310 (1989).
100 Hamm v. Commissioner, No. 15-8753 (U.S. 2016).
addressed the merits of the argument or read the short, 2,500-word transcript of the plea hearing on its merits, because of the federal system’s interest in finality: the case is a perfect illustration of the situation where the reviewing judges (at the state and federal, trial and appellate levels) have taken a systems analytic approach focused on the purported integrity or functionality of the system itself in order to avoid consideration of the claims on the merits. What the systems analytic approach obviates is a full consideration of the other values regarding the criminal sanction that circulate in society.\footnote{Cases involving the practice of plea bargaining also often tend to rely on this systems analytic style of reasoning. A good illustration is Justice Kennedy’s opinion in Missouri v. Frye (2012), finding defense counsel ineffective for failing to present a defendant with a written plea offer before it expired. The language there is heavy on system needs: “The reality is that plea bargains have become so central to the administration of the criminal justice system that defense counsel have responsibilities in the plea bargain process, responsibilities that must be met to render the adequate assistance of counsel that the Sixth Amendment requires in the criminal process at critical stages,” Kennedy writes. “Because ours ‘is for the most part a system of pleas, not a system of trials,’ it is insufficient simply to point to the guarantee of a fair trial as a backstop that inoculates any errors in the pretrial process…. In today’s criminal justice system, therefore, the negotiation of a plea bargain, rather than the unfolding of a trial, is almost always the critical point for a defendant.” Missouri v. Frye, 132 S.Ct. 1399, 1407 (2012). Many other areas of habeas corpus litigation produce an internal systems analysis. Justice Thomas, writing for the Court in Ryan v. Gonzales (2013) and ruling that there is no right to competence during federal habeas proceedings, states: “Because federal habeas is “a ‘guard against extreme malfunctions in the state criminal justice systems,’ not a substitute for ordinary error correction through appeal,” the types of errors redressable under § 2254(d) should be apparent from the record. Harrington v. Richter (2011) (quoting Jackson v. Virginia (1979) (Stevens, J., concurring in judgment)).” Ryan v. Gonzales, 133 S.Ct. 696, 708 (2013). Other important cases include Stone v. Powell, 428 U.S. 465 (1976) (precluding habeas review of Fourth Amendment claims on the grounds of the need for “accuracy” in the system); and Strickland v. Washington, 466 U.S. 668 (1984) (Court’s discussion of the fear of opening floodgates of litigation that would undermine the system).}

\[b. \textit{The External Approach: Deference to the Criminal Justice System}\]

In another manifestation, the courts view themselves as outside the criminal justice system and instead resolve cases by deferring to the expertise of core actors within the system. A recent illustration would be Florence v. Board of Chosen Freeholders (2011) regarding the constitutionality of strip searches incident to jail detention for minor arrests. Justice Kennedy’s opinion for the majority, upholding a policy of prophylactic strip searches, essentially defers to the system’s experts.

Justice Kennedy’s opinion in Florence opens on a particularly strong systems analytic tone. The first two sentences of the opinion read: “Correctional officials have a legitimate interest, indeed a responsibility, to ensure that jails are not made less secure by reason of what new detainees may carry on their bodies. Facility personnel, other inmates, and the new detainee himself or herself may be in danger if these threats are introduced into the jail population.”\footnote{Florence v. Board of Chosen Freeholders, 132 S.Ct. 1510, 1513 (2012).} Kennedy’s opinion emphasizes the closed-nature
of the jail system, and in rejecting the argument for constitutional limits on strip searches, Justice Kennedy writes that any such limits would vitiate the objectives of the system: “The laborious administration of prisons would become less effective, and likely less fair and evenhanded.”

Justice Kennedy’s decision is guided by a systems analytic approach:

“The difficulties of operating a detention center must not be underestimated by the courts.... Maintaining safety and order at these institutions requires the expertise of correctional officials, who must have substantial discretion to devise reasonable solutions to the problems they face.”

Justice Kennedy marshals and quantifies the risks to the jail system, and then defers to the systems experts: “In addressing this type of constitutional claim courts must defer to the judgment of correctional officials unless the record contains substantial evidence showing their policies are an unnecessary or unjustified response to problems of jail security.”

Justice Kennedy’s decision in Maryland v. King (2013), upholding the use of DNA evidence against a person charged with sexual assault where the DNA sample had been taken as a matter of routine booking on another arrest, provides another illustration. Justice Kennedy opens his legal analysis with the following systems analytics:

the utility of DNA identification in the criminal justice system is already undisputed. Since the first use of forensic DNA analysis to catch a rapist and murderer in England in 1986, law enforcement, the defense bar, and the courts have acknowledged DNA testing’s "unparalleled ability both to exonerate the wrongly convicted and to identify the guilty. It has the potential to significantly improve both the criminal justice system and police investigative practices."

Once this systems view is established, it then does a lot of work. Faced with the Fourth Amendment issue in the case, Justice Kennedy finds that the governmental interest served by the Maryland DNA Collection Act is a core function of the criminal justice system—namely, “the need for law enforcement officers in a safe and accurate way to process and identify the persons and possessions they must take into custody.”

It is because of the system’s needs that Kennedy then upholds the DNA sampling. As he writes, the “context of arrest gives rise to significant state interests in identifying

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107 Florence, 132 S.Ct. at 1513-14. Note that the policy contradicted the best practices of the Federal Bureau of Prisons, the U. S. Marshals Service, the U.S. Immigration and Customs Service, and the U.S. Bureau of Indian Affairs—agencies that all require reasonable suspicion before strip searching minor offenders. Query whether the systems analysis was thorough here...
respondent not only so that the proper name can be attached to his charges but also so that the criminal justice system can make informed decisions concerning pretrial custody.”

It is also interesting to note that Justice Scalia’s outraged dissent in King essentially dismantles the system functionality analysis of the DNA sampling for identification. Justice Scalia takes apart the systems reasoning of the majority decision.

There are many other doctrinal areas where the courts defer to the outside experts. This is especially the case, for instance, in the context of military criminal justice where there has traditionally been greater deference to the needs of the military system and military objectives.\footnote{Maryland v. King, 133 S.Ct. at 1980 (2013) (emphasis added).}

In all of these cases, it is precisely the systems analytic approach that affords this style of judicial decision-making its neutrality and objectivity. Just as Schlesinger would claim that systems analysis is objective and eliminates moral or normative considerations, judicial reasoning that rests on this approach also claims objectivity and purports to avoid subjective normative judgments. On this view, a particular practice—such as, for instance, jury discretion or stop-and-frisk policies—is viewed as either efficient and necessary to the proper functioning of the criminal justice system or not, but in either case the determination is presented as an objective fact about the practice that does not require normative or moral evaluation. The needs of the system do not lend themselves to subjective assessments or evaluation: the systems analytic approach in adjudication is about reality, a proponent might say, not about morality.

\subsection*{A Foil}

These are examples or, more accurately, idealtypes of two forms of contemporary systems analytic reasoning—the internal and external. They can be found alongside other styles of judicial decision-making. In any particular judicial opinion that relies on systems analytics, they are not necessarily the only reason or style of reasoning used; they may accompany other forms of argumentation; and they are not always decisive.

In closing, to sharpen the idealtype, it may be useful to offer a foil, an example of its opposite. Here we could look to Judge Shira Scheindlin’s opinion in the New York City stop-and-frisk litigation for a contrasting idealtype. At the very beginning of her opinion in \textit{Floyd v. City of New York}, Judge Scheindlin writes:

\begin{quote}
I emphasize at the outset, as I have throughout the litigation, that this case is not about the effectiveness of stop and frisk in deterring or combating crime. This Court’s mandate is solely to judge the \textit{constitutionality} of police behavior, \textit{not} its effectiveness as a law enforcement tool. Many police practices may be useful for fighting crime—preventive detention or coerced confessions, for example—but because they are unconstitutional they cannot be used, no matter how effective.
\end{quote}

\footnote{See e.g., Eugene R. Fidell, “Justice John Paul Stevens and Judicial Deference in Military Matters,” 43 \textit{U.C. Davis L. Rev.} 999 (2010).}
“The enshrinement of constitutional rights necessarily takes certain policy choices off the table.”

From the outset, Judge Scheindlin sets aside any consideration of the effectiveness or necessity of stop-and-frisk to the criminal justice system. This is not to argue that Judge Scheindlin’s ultimate resolution of the constitutional questions in *Floyd* is automatically correct just because she avoids systems analytic reasoning. We would need a much longer discussion on the merits to decide that question. The only point here is that systems analytics are effectively off the table and the notion of a “criminal justice system” has been bracketed. I will come back to this point for further elaboration because Judge Scheindlin’s opinion helps identify four very different approaches to decision-making.

C. THE PROBLEM WITH THESE TWO STYLES OF JUDICIAL DECISION-MAKING

The earlier critical perspective on systems analysis can inform our appreciation of these two styles of judicial decision-making in the field of criminal law and criminal procedure—along the same dimensions.

In essence, the judicial adoption of a systems analytic approach distorts the legal analysis by converting a particular practice into an objective necessity. It cloaks the judicial decision-making in an aura of neutrality and gives the impression that the legal determination is scientific and objective, rather than moral or normative. In the process, the judicial decision imposes, by means of the practices or policy at issue, a particular balance of values and ideals. By achieving this under the guise of a systems analytic approach, the decision-makers mask the value choices that they are imposing.

To take a concrete case, in *McCleskey*, discussed earlier, Justice Powell treats discretion as a necessary element for the proper functioning of the criminal justice system. Although the Court has not engaged *sensu stricto* in systems analysis—the Court has not identified or compared all the promising alternatives—it is ranking the discretionary practices in question as satisfying the system requirements, as satisfying the “criterion” of the model. In doing so, it is treating “the criminal justice system” as (1) having certain objective needs; (2) needs that can be determined neutrally, without recourse to moral or normative argumentation; (3) by means of an analysis that is not political in nature, but modeled on science. In *McCleskey*, the Court never admits that it is imposing particular social values or engaging in an analysis that involves political choices. In fact, the Court specifically severs the political dimension of the question by suggesting that McCleskey should address his argument to the political branches, not judicial decision-makers: “McCleskey’s arguments are best presented to the legislative bodies,” Justice Powell writes.

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The clear implication is that the systems analytic justification has avoided political or moral considerations. In Schlesinger’s words, it has dealt with reality, not with morality—though we know that is not true. In the same way that Robert Cover taught us to unveil the way in which the formality of law can serve as a crutch to justify judicial decisions that one would never willingly choose, the discourse of “system’s needs” must be exposed as pure pretense. The “system” itself is a construct, its scope and borders entirely fabricated, and its “requirements” pure discretion. The reasoning serves merely to mask the political choices that are being made—the value choices that we should be making deliberately and deliberatively.

Notice, importantly, that the systems analysis in McCleskey does not revolve predominantly around crime reduction. Justice Powell has not adopted Packer’s crime control model. The practices in question are not being measured along a criminological dimension. Rather, the question is whether the practices are necessary to the smooth functioning of the system. The objective is the functionality of the system—which essentially represents, for the Court, an objective or neutral stance. Having a functioning “criminal justice system” is, for the Court, an obvious and natural priority that does not seem to trigger an evaluation of social values or ideals. But what the technical examination of systems analysis reveals is that it is: the systems framework, the selection of a model, the evaluation along a criterion can shift the balance of values in society. And it does so precisely because all the different possible practices are not fungible substitutes that simply promote the system’s objectives or functionality. Practices and policies need to be evaluated in terms of how they are going to distribute and redistribute, or distort the balance of values that we share as a society. Those effects should not occur blindly or by the inadvertent effect of systems analysis.

In other words, judicial decisions that rest on systems analytic justification tend to take for granted the smooth functioning of the criminal justice system as an overarching objective, thereby insulating the legal analysis from deeper critical inquiry. The approach starts, at the outset, by assuming a consensus surrounding the objective of the system—for instance, promoting the functionality of the criminal justice system, or improving crime control, etc. The consequence is that there is little consideration of the larger question how the objectives of the “criminal justice system” relate to other social processes and values. Systems analytic approaches hinder a full debate over the larger consequences to society. The fact is, though, that taking for granted the objective of a smooth functioning system of jails, of capital punishment, or of mass incarceration in this country today is itself a position that requires justification.

In addition, the other critiques apply as well. First, it is unlikely that judicial decision-makers have the necessary training to fully or properly engage the merits of the

113 Dan Kahan makes a similar point with regard to deterrence arguments which are often deployed in order to avoid reaching moral arguments. See Dan M. Kahan, “The Secret Ambition of Deterrence,” 113 Harvard L. Rev. 413-500 (1999).
systems analysis, and so may well engage in satisficing. This would be true, of course, for most people other than trained economists—this is not meant to impugn lawyers or judges. It’s simply a fact that legal education today still does not require or generally include quantitative training.

Second, judicial decision-making that rests on systems analytic approaches tends to select on the more quantifiable objectives and variables, such as crime control, management efficiency, or system functionality, at the expense of higher-order and softer social values, thus privileging the more measurable and instrumental factors. Here too, in the context of the “criminal justice system,” those factors that can be measured more easily—crime related variables, arrest rates or convictions—will get priority over more qualitative or soft variables, such as racial equality. This is partially why, for instance, Packer’s due process model is a watered down version of systems analysis or may not even qualify. It is because those values of legality and fair notice are particularly difficult to quantify, producing a hybrid model that has very little “scientific” traction. It’s too soft to model. This is particularly problematic when we notice, with Malcolm Gladwell, that heterogenous rankings that aspire to be comprehensive are particularly amenable to distortion.\footnote{See, e.g., Carol Steiker, “Lessons From Two Failures: Sentencing For Cocaine And Child Pornography Under The Federal Sentencing Guidelines in the United States,” 76(1) \textit{Law & Contemporary Problems} 27-52 (2013) (discussing the quantification bias and errors in federal sentencing); Daniel Richman, “Federal White Collar Sentencing in the United States: A Work In Progress,” 76(1) \textit{Law & Contemporary Problems} 53-73 (2013) (discussing the quantification of loss amount in white collar sentencing).}

The \textit{Florence} decision is a good illustration. Justice Kennedy is able to and does quantify some of the security risks: “This record has concrete examples,” he writes. “Officers at the Atlantic County Correctional Facility, for example, discovered that a man arrested for driving under the influence had ‘2 dime bags of weed, 1 pack of rolling papers, 20 matches, and 5 sleeping pills’ taped under his scrotum.”\footnote{Malcolm Gladwell, “The Order of Things: What college rankings really tell us,” \textit{The New Yorker}, February 14, 2011.} The Justices debate a recent study of 75,000 new inmates over a five year period that found 16 instances where a full body search revealed contraband.\footnote{\textit{Florence}, 132 S.Ct. at 1520-21 (2012).} By contrast, the liberty interests are far less tangible, and as a result, do not weigh equally in the systems analysis. Strip searches often include delousing showers, having to lift your genitals, and being forced to squat-and-cough while someone is peering up your rectum or vagina: those liberty interests are less easily quantified than the raw number of successful searches, even when they are as low as 16/75,000. \textit{Florence} is precisely a case where the more measurable, quantifiable, and instrumental factors associated with the harder social systems—here, the jail

\footnote{As Justice Breyer explains, “The record further showed that 13 of these 16 pieces of contraband would have been detected in a patdown or a search of shoes and outer-clothing. In the three instances in which contraband was found on the detainee’s body or in a body cavity, there was a drug or felony history that would have justified a strip search on individualized reasonable suspicion,” Breyer’s dissent at page 8.}
system—serve to tilt the analysis in a particular direction. The hard edge of systems analysis, as noted earlier, favors hard systems.

Returning to Judge Schindlin’s opinion for a moment, it may be useful to map out the different possible ways of resolving the legal question:

1. Schindlin’s approach: disregard empirical evidence of efficacy of policy;
2. Other extreme: assume that the policy is perfectly effective;
3. Middle ground: allow judgment about effectiveness to weigh in analysis of constitutional values; take testimony from experts (Fagan, etc.) and then make a factual determination about the cost-benefit that is used in weighing the burden on constitutional rights; or
4. The criminal justice system trump card: rely on the system “needs” to decide the constitutional issue, i.e. either the system needs to have these stops-and-frisks that should limit constitutional rights, or not.

In essence, it is the fourth way of resolving a legal dispute that is most problematic. One can easily remain agnostic as to the first three approaches, even though the second approach would seem the most appropriate and respectful of the different responsibilities and expertise of the different actors. In this regard, it may also be appropriate to draw a distinction between evaluating the effectiveness of a policy in the context of the legal decision and in the context of the remedies only (as in Miranda, possibly). In any event, though, the greatest problem with systems thought is when it generates outcomes based on an implicit teleology of the system—which is captured by the fourth approach above. It is when it serves as a trump that silences a proper weighing of values that it is most problematic.119

D. THE PROBLEM IN CRIMINAL JUSTICE MORE BROADLY

These problems do not only plague judicial decision-making. They also pose the same problems to criminal justice studies and other systems analytic approaches more broadly. The problems can be illustrated well in the original Liechenstein study from 1971 discussed earlier.120

Based on the close analysis of the different alternatives, the Liechenstein report found that the most efficient technique was police manning. Policing trumped education or recreation in terms of efficiency.121 The systems analysis had value effects. And the

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121 The study ultimately suggested that even the most effective security measures—extensive surveillance, increased policing, and posting of armed guards at each building—were too expensive (p. 24), and as a result, did not specifically endorse any of the security measures analyzed. Ironically, the NYC RAND recommended instead more research money for … RAND. Ibid., p. 25 (“[T]he heuristic methodology that
City ultimately implemented very similar policy solutions, focused precisely on increased policing and manpower. After a 63-year-old woman in a Lower East Side project was killed, Simeon Golar, chairman of the New York City Housing Authority, instituted a “100-man mobile task force” consisting of 40 housing policemen and the hiring of 60 new policemen.122 There followed a $500,000 initiative to hire armed and unarmed guards for the city’s housing projects, as well as a $1 million allocation for security and surveillance equipment.123 The increased police manning was also accompanied by stricter judicial sentencing. There was a perceived sense in the media and among politicians that lax judicial practices had contributed to the crime epidemic.124 These combined policy interventions would fuel increased incarceration in New York State that would contribute, starting in 1973, to what has come to be known today as mass incarceration.125

The NYC RAND Institute’s systems analytic approach favored the police and punishment-oriented solutions that were inherently more tangible, measureable, and quantifiable—these were the type of policy levers associated with metrics that were easier to quantify, to collect, to code, and to regress. This is, after all, natural; it is far easier to quantitatively study criminal justice metrics (such as arrests, searches, convictions, or police force) than it is to study the long-term consequences of education, poverty-relief, or neighborhood trust. But it produces a fallacy. By taking for granted the construction of the social problem, by choosing a narrow, quantifiable objective, by focusing on more measurable outcomes, and by costing-out “fungible” policies, the systems analytic approach shapes our value system without ever having explicitly engaged the debate.

we have presented here is further testimony to the paucity of formalized design procedures for translating security goals into detailed system requirements. The present crime situation has created an undeniable demand for quantitative models which can account for behavioral and sociological phenomena which can adequately predict the impact of security measures on society, and which can clarify our presently fuzzy notions of what security really means.”) Nevertheless, the City implemented the policies that topped Liechtenstein’s study.

125 This was reflected well when, in 1971, New York City Police Commissioner Patrick V. Murphy made public statements that courts “must accept the giant share of the blame” for the rise in city crime, arguing that “the courts let too many criminals go free and gave others sentences that were too light. He said the whole judicial system was lax, unjust, inefficient and ‘in bankruptcy.’” Eric Pace, “Murphy Indicts the Courts for Rise in City’s Crime,” The New York Times, December 21st, 1971. Murphy made news a little over a week later when he reorganized the police department to delegate the investigation of murders and robberies to “specialized squads.” Pace, Eric, “Murphy Revising Duties for 25,000,” The New York Times, December 30th, 1971. Criticisms of the court system were coupled with calls for tougher punishment. Judges were perceived as letting too many individuals get away with light sentences. Deputy Inspector William R. Bracy, at a Harlem task force meeting, complained that “My hands are tied by the court system. Many cases go out of the window because of the policy of judges in their ivory towers.” Rudy Johnson, “Police Problems Heard in Harlem,” The New York Times, January 18th, 1973.
124 NYSDOCS data; see also http://assembly.state.ny.us/Reports/WAM/Perspectives/199803/
E. A CODA ON MASS INCARCERATION

As already noted, the problem in the area of criminal justice is much larger than the narrow issue of judicial decision-making based on a systems analytic approach. The problem goes far deeper, and entails far more troubling social outcomes.

Punishment practices more generally, today, are often operationalized through a systems analytic approach: we tend to approach these matters from the perspective of a “criminal justice system,” with its objectives and needs (e.g. crime reduction, population management, etc.), and then pursue policies that most efficiently advance those objectives. In the process, we ignore many other important dimensions.

Mass incarceration—or more appropriately, the hyper-incarceration of inner-city, minority young men—is a tragic example of this. To be sure, it is the product of a complex interaction of micro- and macro-level factors including national and local politics, sentencing reforms, racial discrimination, perceptions of crime, and special interest lobbying, over the course of forty years. But systems analysis facilitated the phenomenon, especially at the level of ideas and justification.

The theory of “selective incapacitation”—which would morph into mass incarceration—was originally theorized by the RAND Corporation and developed precisely as a systems “fix” to the excessive cost of the prison system. A few years after the New York City RAND Institute closed its doors, in the early 1980s, RAND established the Habitual Offender Project. That project would focus on the strategy of “selective incapacitation” as a new and promising, cost-effective measure to combat crime.

The idea of selective incapacitation was premised on the empirical observation that a limited number of offenders tend to commit a disproportionally large percentage of offences. If true, and if those individuals could be identified, then in theory it would be efficient to focus on those high-rate offenders and imprison them for longer terms, rather than incarcerate low-rate offenders. The RAND project originated in response to studies of California prisons that revealed, surprisingly, no real differences in prison sentences as between low and high rate offenders. The idea behind the RAND project was to efficiently reshuffle inmate sentencing: By locking up high-rate offenders for longer periods, a state could both reduce its crime rate and simultaneously decrease its prison population. The policy promised budgetary savings and reduced crime.

Peter Greenwood, with Allan Abrahamse, issued a RAND report in 1982 that set forth the most fully articulated plan for implementing the strategy of selective incapacitation.

incapacitation. Titled “Selective Incapacitation,” the report began as follows: “The American system of criminal justice is now at a crossroad. Deprived of rehabilitation as an organizing theme, pressed by a fearful and dissatisfied public to provide greater protection from violent crimes, saddled with dangerously overcrowded and decrepit prisons, and facing the prospect of severely limited resources to carry out its functions, the justice system is now searching for new ways to control crime.” The report studied the feasibility of one such new way: predicting future dangerousness in order to impose lengthier sentences on habitual offenders. The study then tried to estimate the cost-effectiveness of selecting on dangerousness.

The researchers based their prediction research on self-report surveys from 2,100 male prison and jail inmates from California, Michigan and Texas in 1977. They focused on robbery and burglary offenses, excluding more serious crimes such as murder or rape (given that low-base-rate crimes are so much more difficult to predict) and developed a seven factor test to identify high-rate offenders (focusing primarily on prior criminal record, history of drug abuse, and employment history). They assigned each offender a score from zero through seven: a positive response on any one of these seven factors resulted in one point on the offender’s score. The resulting score was used to distinguish between low, medium or high rate offenders. When the researchers tested their predictions, they found that their test identified low- and medium-rate offenders with greater ability than high-rate offenders: 91 to 92 percent of those scoring 0 or 1—the lowest possible scores—turned out to be low- or medium-rate offenders; by contrast, only 50 percent of those scoring 5, 6 or 7 turned out to be high-rate burglars or robbers. Despite the poor results, Greenwood concluded the study on an up-beat note: “Increasing the accuracy with which we can identify high-rate offenders or increasing the selectivity of sentencing policies can lead to a decrease in crime, a decrease in the prison population, or both. Selective incapacitation is a way of increasing the amount of crime prevented by a given level of incarceration.” Even though Greenwood found that predicting future dangerousness was inexact—and five years later would revise the report and issue it with a slightly different title: “Selective incapacitation revisited: why the high-rate offenders are hard to predict”—Greenwood nevertheless painted an optimistic picture from what were not very cost-efficient conclusions:

Among California robbers, we found that a selective incapacitation strategy that reduced terms for low- and medium-rate robbers while increasing terms for high-rate robbers could achieve a 15 percent reduction in the robbery rate with only 95

percent of the current incarcerated population level for robbery. An unselective attempt to increase incapacitation effects by increasing terms for all robbers equally requires a 25 percent increase in population to bring about the same 15 percent reduction in crime. Among burglars, the best selective policy required a 7 percent increase in prison population to bring about a 15 percent reduction in crime.

In Texas, we found that additional incapacitation effects would be much more expensive. For robbers it would require a 30 percent increase in incarceration level to achieve a 10 percent reduction in crime. For burglars, a 15 percent increase in incarceration would be required to achieve a 10 percent reduction in crime. This higher cost is due to the low offense rate among Texas inmates.\footnote{Greenwood et al., \textit{Selective incapacitation}, 1982, p. xix.}

A close reading of these conclusions reveals that the crime reduction benefits required—in three out of four cases—\textit{increased prison populations}. In effect, the idea of \textit{selective} incapacitation had already morphed into the theory of mass incapacitation. Nevertheless, the Greenwood report had high impact and contributed importantly to the rise and theoretical prominence of incapacitation theory, which undergirded a massive increase in prison populations in the United States.\footnote{See Bernard E. Harcourt, \textit{Against prediction : profiling, policing, and punishing in an actuarial age}. Chicago: University of Chicago Press, 2007, p. 88-92.} The report was inducted into the operations research cannon of criminal justice—as least, according to Blumstein. In the group of OR missionaries, Peter Greenwood featured prominently.\footnote{Blumstein, 2007, p. 22; for a review of OR contributions to the criminal justice system, see Maltz 1994.}

Greenwood’s study, though, resembled more systems analysis than operations research—which was precisely the problem. It focused on a narrow objective and then evaluated one particular policy alternative that clearly had a distinct political valence, \textit{without addressing the politics}. It is precisely these kinds of systems analysis approaches that are dangerous, because, in narrowing in on a consensus objective, they set aside an open and frank debate about our values and ideals. The analysis miserably failed to consider all of the negative consequences that the practice entailed—and this blindness has continued to plague the topic of mass incarceration. To take but one: the toll on citizenship. There is practically no consideration, today, for what mass incarceration does to the civic engagement of the more than 2.2 million persons held behind bars or to the more than 7 million persons under correctional supervision. Amy Lerman and Vesla Weaver have begun to document some of the more measurable effects of incarceration on public citizenship. They have shown how contact with the correctional system reduces participation in democratic politics and carries with it a “substantial civic penalty”: it produces a large, negative effect on “turning out to vote, involvement in civic groups, and

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135 Blumstein, 2007, p. 22; for a review of OR contributions to the criminal justice system, see Maltz 1994.
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trusting the government,” taking into account the possibility of selection bias. But even here, the studies only consider the more tangible effects, and one can only wonder about the much broader impact of such a massive prison system on the democratic citizenship of large segments of our communities.

This is not to suggest that systems analysis caused mass incarceration—nor to suggest that there are no evidence-based systems analytic strategies that could help reduce mass incarceration today. The point, instead, is that systems analytic approaches do not take a sufficiently holistic approach to society and tend—I emphasize, tend—to focus the analyst too narrowly on systems’ objectives. So, for instance, today, in the context of decarceration, too many of the outcome-based systems analytic programs focus on the release of inmates with low propensities for “dangerousness,” without examining how the prediction of future dangerousness is coded for race and how these solutions skew even further the racial imbalance in corrections. Similarly, the evidence-based systems analytic strategies focus on the reduction of recidivism, when in fact, it is extremely hard to realistically affect recidivism. Instead of focusing so intensively on reducing recidivism—the system’s primary focus—it may well be better, rather, to focus on whether these programs reduce the very high likelihood that a reentering convict overdoses or dies. The statistics here are frightening. But those, of course, are not viewed as system needs, and so they do not rank high on the outcome metrics. Could we get it right one day and do systems analysis better? Anything is possible, of course, but the honest answer is: only if we can manage higher-level welfare analysis and do not remain stuck within any particular system, especially the “criminal justice system.”

IV. THE IMPLICATIONS FOR PUBLIC POLICY

The systems analytic approach also significantly influenced the broader field of public policy and, in some circles today, still dominates the logic of public policy analysis. What was once technical systems analysis in the 1960s has become, for many today, the canonical approach to public policy. This raises the question, then, whether the systems fallacy is also at play in the broader domain of public policy. This question, naturally, would deserve a full-length article by itself; but in this Part and in the space that remains, I will begin to address this crucial extension of the systems fallacy.

A. THE INFLUENCE OF SYSTEMS ANALYSIS ON THE STUDY OF PUBLIC POLICY

1960s systems analysis heavily influenced the contemporary study of public policy. This is evident if one listens carefully to the self-description of the field by current-day public policy advocates. Here is Edward Rubin, for instance, describing the field: “The components of an optimal public policymaking process are well known and

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generally agreed upon”\textsuperscript{137}: they include, first, selecting a problem, second, finding the range of alternative policies, third, assessing each one, and fourth, ranking them—or, in Rubin’s own words:

First, the decision maker should define the problem to be solved. The next step is to generate a range of possible alternatives that might potentially resolve the problem. Each alternative is then assessed for its potential effectiveness on the basis of the available information. Then the decision maker chooses the most promising alternative; the more information and analysis that can be brought to bear on the decision, the more likely it will be that the most effective alternative will be selected. Once the choice is made, it must be implemented…\textsuperscript{138}

This is, as you will immediately notice, a more informal but exact articulation of the RAND model. And it is generally considered the “optimal” public policymaking process, according to leading public policy figures, including Eugene Bardach, Thomas Birkland, John Friedman, Lewis Zekhauser, and Deborah Stone.\textsuperscript{139} As Rubin emphasizes, it is “the decision making sequence that is widely recognized in our society as the most promising way to make public policy.”\textsuperscript{140}

Stone and Zekhauser set forth the sequence as follows in their canonical text on public policy analysis, \textit{A Primer for Policy Analysis}:\textsuperscript{141}

1. \textit{Establishing the Context}. What is the underlying problem that must be dealt with? What specific objectives are to be pursued in confronting this problem?

2. \textit{Laying Out the Alternatives}. What are the alternative courses of action? What are the possibilities for gathering further information?

3. \textit{Predicting the Consequences}. What are the consequences of each of the alternative actions? What techniques are relevant for predicting these consequences? If outcomes are uncertain, what is the estimated likelihood of each?

4. \textit{Valuing the Outcomes}. By what criteria should we measure success in pursuing each objective? Recognizing that inevitably some alternatives will be superior with respect to certain objectives and inferior with respect to others,


\textsuperscript{139} See Rubin, 2013, p. 38 n. 151.

\textsuperscript{140} Rubin, 2013, p. 40.

how should different combinations of valued objectives be compared with one another?

5. Making a Choice. Drawing all aspects of the analysis together, what is the preferred course of action?[\textsuperscript{142}]

Underlying this approach and its generalization, there is an idea that in practically all domains there is a policy space within which it is possible to use this policy method to achieve better results, to be more effective, to get it right—or, in Rubin’s words, to “do a better job in that inevitable social engineering in which we engage in all the time.”[\textsuperscript{143}]

What the policy approach does is to try to magnify the policy space in order to incrementally improve decision-making—in the very same way in which systems analysis tried to extend its reach from the narrow confines of military operations research to the entire administrative state. As Rubin writes: “the more information and analysis that can be brought to bear on the decision, the more likely it will be that the most effective alternative will be selected.”[\textsuperscript{144}]

a. The Problem with Expansive Public Policy

Clearly, systems analytic approaches have shaped the contemporary study of public policy and have the greatest influence on what I would call “expansive” or “imperialist” public policy—namely, public policy approaches that seek to maximize the policy space by adopting the most classical approach that begins by selecting a large set of fungible promising alternatives. It is, however, in this context that the very same problem—the systems fallacy—will again surface and present difficulties. Here too, the systems analytic approach inverts the relationship between the policy method and political values: it imposes political values under the guise of mere method. This is precisely the problem demonstrated in Part II.B above. The critique applies with full force and in its most pristine way to these types of “expansive” public policy approaches that perfectly mirror systems analysis.

B. RECONSTRUCTED COST-BENEFIT ANALYSIS

As Clifford Geertz intimated in his seminal essay, “Thick Description: Toward an Interpretive Theory of Culture” (1973), most ideas begin as large systems and are then incrementally reduced to size.[\textsuperscript{145}] Today, a number of legal scholars have proposed, in various ways, more limited versions of cost-benefit to address the many criticisms, especially the concerns that have been leveled against traditional forms of cost-benefit analysis. Over the past decades, there have been several intelligent proposals to refound and reconstruct cost-benefit analysis along more pragmatic and flexible, and less

[\textsuperscript{142} Stockey and Zeckhauser, 1978, pp. 5-6.
[\textsuperscript{143} Rubin comments at Columbia Law School Legal Theory Workshop, September 30, 2013.
[\textsuperscript{144} Rubin, p. 38.
[\textsuperscript{145} Clifford Geertz, “Thick Description: Toward an Interpretive Theory of Culture,” in The Interpretation of Cultures (1973).
imperialistic lines: to save the valuable part of cost-benefit as a tool to assess programs and policies, while eliminating the unnecessary accoutrements, by crafting a humbler, second-best method to guide decision-making.

Cass Sunstein has taken, for many years now, a more limited, chastened, or what might be called “pragmatic” approach to cost-benefit analysis, both in theory and in practice. Sunstein’s more pragmatic approach is reflected, by no mere coincidence, in the Obama administration’s Executive Order 13563, which suggests, for example, that agencies “may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.” Both in his official functions and in his writings, Cass Sunstein has helped soften the edges of traditional cost-benefit analysis, emphasizing a greater recognition of the limits of quantification, of the difficulties of monetary measures and of translating everything into dollar equivalents—all the while, though, being a strong proponent of cost-benefit analysis, which is reflected for instance in the recent NSA report that he co-authored.

In a somewhat similar vein, Matthew Adler and Eric Posner, in their book *New Foundations of Cost–Benefit Analysis*, have proposed a more limited, pragmatic approach to cost-benefit. They suggest that we should think of the method not as an ideal, first-order technique that provides unassailable answers, but rather as a second-best device for making decisions, one that is most suited to our current epistemological and political conditions. The method, they argue, should be thought of as just that: a decision-making method. And as such, they argue, it is nothing more than a “rough and ready proxy” for the kind of welfare analysis that we would ideally want to engage in, if we lived in a perfect world, but that is merely sufficient in the real world to achieve the tasks at hand. It should be viewed as a kind of “weak welfarism” in which “overall well-being is one of a possible plurality of fundamental moral considerations.” In presenting the method in this way, Adler and Posner recognize that there are difficulties with quantification and cost-benefit, but argue that any problems with the method do not cause sufficiently significant distortions to warrant concern. CBA, they argue “should be seen as a comparative ‘best fit,’ not a perfect procedure.”

These more pragmatic approaches have also introduced certain deontological limits to quantification. A good illustration of this is in the recent report, discussed

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150 Adler and Posner, “New foundations of cost-benefit analysis: A reply to Sinden, Kysar, and Driesen,” at p. 77.
earlier, by the commission appointed by President Obama to review the government’s policies of domestic and international surveillance, following the Edward Snowden disclosures regarding the NSA, and to recommend policy reforms. Cass Sunstein, who was one of the five members of the commission, left a strong imprint on the report, one that can be felt especially with regard to the recommendation that the executive branch engage in cost-benefit analysis. One of the core principles that the commission recommended in its report specifically states that “The government should base its decisions on a careful analysis of consequences, including both benefits and costs (to the extent feasible).”\(^{151}\) Under this header, the report notes:

> In many areas of public policy, officials are increasingly insistent on the need for careful analysis of the consequences of their decisions, and on the importance of relying not on intuitions and anecdotes, but on evidence and data. Before they are undertaken, surveillance decisions should depend (to the extent feasible) on a careful assessment of the anticipated consequences, including the full range of relevant risks. Such decisions should also be subject to continuing scrutiny, including retrospective analysis, to ensure that any errors are corrected.”\(^ {152} \)

The report also recommends, as Recommendation 46 of its report: “We recommend the use of cost-benefit analysis and risk-management approaches, both prospective and retrospective, to orient judgments about personnel security and network security measures.”\(^ {153}\)

But what is particularly interesting to note here is that the recommendation regarding the use of cost-benefit analysis is strictly limited by the strict adherence to certain deontological principles. So, for instance, the report states up front that, regardless of the cost-effectiveness of certain policies,

some safeguards are not subject to balancing at all. In a free society, public officials should never engage in surveillance in order to punish their political enemies; to restrict freedom of speech or religion; to suppress legitimate criticism and dissent; to help their preferred companies or industries; to provide domestic companies with an unfair competitive advantage; or to benefit or burden members of groups defined in terms of religion, ethnicity, race, and gender.\(^ {154}\)

Notice that the cost-benefit method proposed, then, expressly takes some factors off the table. It draws limits, deontological limits, on the scope of the method itself—limits that would be entirely antithetical to a full-blown, robust welfare calculus.

\(^{151}\) Report at p. 16.
\(^{152}\) Report at p. 16; see also Report at pages 50-52. The report also recommends that “For big data and data-mining programs directed at communications, the US Government should develop Privacy and Civil Liberties Impact Assessments to ensure that such efforts are statistically reliable, cost-effective, and protective of privacy and civil liberties.” Report at p. 22.
\(^{153}\) Report at p. 42.
\(^{154}\) Report at p. 16.
In addition, central to many of these reconstructive projects is the idea of reiterative or retrospective evaluations as a way to properly update information over time. This is a key component of the sophisticated pragmatic approaches to cost-benefit—which is evident again in the Obama commission report, in passages which emphasize that an essential component of the Obama administration executive order on cost-benefit is “retrospective analysis” of policy implementations: all analyses, the report states, “should also be subject to continuing scrutiny, including retrospective analysis, to ensure that any errors are corrected.”

These three components—a more limited decision-making technique, with certain deontological limits, that is updated through retrospective analysis—constitute a new, more chastened version of cost-benefit analysis. Some scholars, such as Amy Sinden, refer to this reconstructed version as “cost-benefit lite.”

a. The Return of the Systems Fallacy

Some critics of the new reconstructed cost-benefit approaches argue that the earlier criticisms of traditional cost-benefit analysis still apply to the reconstructive projects and should thus make us skeptical of them. As some of the leading critics—Douglas Kysar, Amy Sinden, and David Driesen—remark, regarding potential criticisms of the new approaches:

Does this sound familiar? These are exactly the complaints about CBA as a decision procedure that many of us have been voicing for years. The problem is that, while their defense of overall welfare as a morally relevant criterion and their description of CBA as an imperfect proxy for overall welfare are thoroughly, painstakingly, and convincingly argued, Adler and Posner have failed to demonstrate that CBA as a decision procedure does not suffer from all the same shortcomings they associate with direct implementation: inaccuracy, vulnerability to manipulation, and inordinate expense.

Although I sympathize with these arguments, I would take a different position. I would argue, instead, from an internal perspective, that the notion of a mere second-best decision making tool is misleading: if one actually believes that the kind of quantitative analysis that is called for by the reconstructive project is actually doable, if one believes that those types of measurements and metrics are sufficiently reliable to decide, effectively, life and death questions, then one has to engage in the higher-level welfare

155 Obama commission report, at p. 16.
158 Sinden, Kysar, and Driesen, p. 58.
analysis. One has to move up to the more encompassing level of analysis that takes general welfare into account. Anything short of that will distort outcomes.

This is precisely the point I demonstrated in Part II.B.b above. As I show there, the partial use of cost-effectiveness likely will distort overall welfare. An illustration may be helpful: suppose that mass incarceration was cost-effective in the sense that it reduced violent crime at a reasonable cost by an amount, say, of 15% over forty years. Suppose in fact that it was the most effective measure of all the measures studied and compared to affect the crime rate. Suppose, however, that the investment itself—more than $50 billion per year over the course of the past forty years—if it had been invested instead in cancer research, would have resulted in finding a cure for cancer. The result of partial or limited cost-benefit analysis—of cost-benefit analyses limited to the criminal justice system—is that we would be left, today, with our current, remarkably low levels of violent crime, which would have occurred naturally (recall, on these assumptions they would have fallen 85% on their own because of demographic and other national level factors, as in Canada) but there would be no cure for cancer. That is clearly a net loss to society. But it is the direct consequence of having conducted a limited cost-benefit analysis, rather than an overall welfare calculus. If we turn to quantification, it has to be at the very highest level—it has to be about general social welfare.

Adler and Posner’s reconstructive project, I would argue, makes precisely the wrong move: They argue that we should think of cost-benefit as smaller than general welfare maximizing, but as a good enough proxy for government business. This notion of “second-best” is a red-herring: If you believe that you can do the metrics, then you need to be ambitious and do welfare analysis, otherwise you get distorted results.

C. THE PROPER PLACE OF QUANTIFICATION

As I emphasized in the Introduction, though, this surely does not mean that we should be unsystematic or, in any way, opposed to systematicity and rigor in our evaluation of public policies. The systems fallacy is a problem with the teleology of systems thought. It is not an attack on systematicity or rigor. To the contrary, understanding the systems fallacy requires rigor, and the analysis in this article helps to define more clearly the proper approach and the place of quantification.

Identifying the systems fallacy focuses our attention on the choice of scope issues that are necessarily implicated by the analysis of laws, regulations, or public policies. It militates strongly in favor of avoiding as much as possible or limiting reliance on methods that construct metaphorical systems and bounded sets of fungible public policies, given that so much normative work is hidden by the choice of scope itself. It militates in favor of being constantly vigilant about the social and political values that are included in the analysis and those that are hidden, ignored, or discounted. In effect, it pushes us toward a more reflexive approach to analysis: an approach that constantly asks us to reexamine how we have set up and constructed the boundaries of the analysis, and how that construction may hide particular tilts in the analysis, privilege particular values,
or affect the outcome of the analysis. This is an approach that constantly reassesses whether any particular values are being discounted or privileged, whether any interests are being ignored, whether any factors are being hidden.

Law and policy analysts turned to systems analytic methods in large part because total welfare analysis was viewed as too unwieldy for policy and judicial decision makers. But the turn to systems analysis produced predictable distortions centered on the scope of the figurative system. In order to improve the decision-making process, then, the way forward must circumvent, as much as possible, these choice of scope issues. It need not, though, eliminate all metrics or uses of benchmarks to assess individual policies or regulations. Evaluating the effectiveness of programs, of course, remains important. If programs are not contributing to a stated objective or are counter-effective, that is important information to have. For example, if broken-windows policing, stop-and-frisk policies, or gun-oriented policing are not reducing serious crime, it is important to know in order to decide whether to engage in those enforcement practices. It is important to remain cognizant of efficacy questions, without letting those concerns trump the balancing of values.

There are, for example, promising uses of benchmarking that have been advocated by scholars such as Christopher Ansell as part of a pragmatic, evolutionary learning method to public policy. Drawing on the pragmatic insights of John Dewey, and inspired by the democratic experimentalism of scholars such as Charles Sabel, William Simon, and Michael Dorf, Ansell develops in his book, on Pragmatist Democracy: Evolutionary Learning as Public Philosophy (Oxford 2011), an approach to public policy that includes some use of metric, carefully defined, and retrospective analysis to evaluate participatory projects. These approaches stay clear of the systems fallacy by focusing the measured analysis on a specific policy within a single value dimension.

If metrics are going to be made part of the analysis, then, their inclusion should be limited to an individualized analysis along a single value dimension. Metrics should always focus on a single program, not on a system or a set of promising alternatives. And their use must acknowledge the importance of staying within a single dimension of social value. If any research is done on a comparative basis, it should be done purely for research and not for implementation. Moreover, the alternatives policies that may be compared have to be in the same register: whether, for instance, hot-spots policing works better than broken-window policing—that would be a fine question to research. Whether to do 911-style policing or beat policing—that, too, is okay. But whether to


160 Although, even here we need to be careful. Even within seemingly similar police operations, for instance, systems analytic evaluations may privilege those strategies that involve more easily quantifiable variables, such as arrests versus community relations.
invest in the COPS program or in Head Start—that has to be off the table, because it is going to skew our balance of values.

To summarize, any use of quantification should be focused on a single program, policy or regulation, and not a figurative system or set of promising alternatives; concentrated along a single value domain; always open to retrospective analysis and criticism, recognizing the inevitable problems of scope that often creep back into the analysis; and always attentive to the choice of scope issues and to whether values are being hidden or ignored. The moment cost-benefit extends beyond a single dimension of value and tackles a set of policies rather than just one, the analysis dangerously inverts the relationship between policy and politics. It is also important to delegate any quantitative work to trained methodologists in a field such as applied economics, rather than to lawyers or judges if they do not have quantitative training. Most importantly, though, it must be accompanied by constant reflexive analysis about choice of scope questions and the possibility that particular values are being ignored in the analysis.

CONCLUSION

Extending the method of Operations Research beyond weapons systems and into broader public policy and judicial decision-making contexts has been treacherous and “radical,”161 to borrow Edward Quade’s term. Radical, precisely for the reasons that Quade and his RAND colleagues suggested: the approach takes no position on the relative worth of very different kinds of practices that promote very different kinds of social values. Quade’s pregnant remark that “education, antipoverty measures, police protection, and slum clearance may all be alternatives in combating juvenile delinquency”162 reveals the nub of the problem. The simplicity of the statement exposes the central fault: the systems analytic approach ingeniously displaces larger debate over the values that we hold as a society.

These methods are an approach that seduces by offering the hope of avoiding the quagmire of partisanship or, in Schlesinger’s words, “morality,” and by focusing our attention on narrow objectives that no one could possibly object to—reducing crime or juvenile delinquency, for instance. They cunningly propose a disarmingly common sense, neutral, and objective approach. Rather than get caught up in endless debates, we need simply agree on more basic, measurable objectives (with an appreciation of resource constraint), evaluate the different alternative ways of achieving those narrow objectives, and then choose the most efficient alternative. But the systems analytic methods mask rather than avoid value judgments. They do so by privileging and rendering natural certain systems interests, while ignoring the consideration of other social values. They are

at their worst when they stop conversation: when they serve to stop the legal discussion short and prevent countervailing values from ever getting named or weighed in the analysis.

What the genealogy of contemporary reconstructed cost-benefit methods reveals, most poignantly, is that the systems fallacy of earlier systems thought often creeps back into these new types of analyses, even when they are reconstructed. The systems fallacy helps identify the Achilles heel of these ventures. In most cases, systems thought and its current rehabilitated forms are either too large or too small: too large in the sense that they are often not properly confined by decision-makers to single policy assessments and as a result distort the outcomes by imposing values and crowding out full debate and value assessment; or too small, in the sense that any partial equilibrium analysis will distort a proper, full-blown welfare analysis. Their pretense to comprehensiveness, neutrality, and objectivity masks the inescapable value-laden prior choice of which policies to pursue, which object to evaluate, which program to study. These problems are clearest in the context of systems analysis, but they plague as well contemporary forms of reconstructed cost-benefit analysis.