TOWARDS A RECONCILIATION OF POSITIVISM
AND NATURALISM: A CYBERNETIC APPROACH
TO A PROBLEM OF JURISPRUDENCE*

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Professor D'Amato argues that the disparity between the
natural law and positivist schools reflects a lack of systematic
treatment of issues. To dissolve this disparity, he proposes the
use of recently developed models in the field of Cybernetics to
elaborate the interacting functions of courts and legislatures. He
concludes that the positivist position seems to be only one special,
limiting case of the natural law approach, and that it is a theory
that constricts the feedback essential in making law work.

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Appendix

“Somewhere between the specific that has no meaning and the
general that has no content there must be, for each purpose
and at each level of abstraction, an optimum degree of gener-
ality.”—Kenneth Boulding

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I. The "Legal System"

Jurisprudence has traditionally focused upon the nature of law and legal institutions, both out of a concern to understand better the legal system in which we are immersed, and to explore the nature and quality of our obligation (if any) to obey the law and respect the procedures of that system. However, despite centuries of philosophizing and an increased level of debate in recent years between the positivist and the natural-law schools of jurisprudence, the impression that is often unfortunately left upon the reader is that of a battle over words and definitions. Partly this impression is due to a lack of systematic treatment of the issues that seem to divide the two competing schools. Additionally, the natural-law and positivist schools seem so far apart that the hope of any synthesis between them has seemed nearly impossible. Both of these drawbacks with the current jurisprudential debate, however, might be substantially lessened by the use of recently developed models in the science of communication and control known as "cybernetics."1 By using these tools we might be able to construct models from which the ultimate questions of moral obligation and fidelity to law might be explored. Yet clarification is not the same thing as simplification; as this essay shall attempt to show later, the nature of the legal system may be more complex and subtle than has hitherto been acknowledged, and there may be more room in the future than ever in the past to examine the implications for society and government of the machinery of our dynamic legal institutions. The science of jurisprudence might just possibly be in its infancy.

To be sure, the use of cybernetic modelling to help us be more precise about legal systems does not in itself guarantee precision. A "model" is just a pictorial theory, and classical jurisprudence is full of theories. But a model may help in emphasizing dynamic relationships in the concept of system, whereas verbal theories might have inherent shortcomings when dealing with relationships. Throughout most of Western thought the concern of philosophers has been with the study of entities in isolation, and the language that we use reflects this entity bias. The Aristotelian deductive tradition, as Korzybski has demonstrated,2 has infused Western languages with words that are the names of "things" or, in some special cases, with relationships treated as entities (such as continuity, contiguity, and causality). Only in the nineteenth century did Hegel break with this tradition in formulating what Stafford Beer calls Hegel's Axiom of Internal Relations—that the relations by which terms are related are an integral part of the terms they relate.3 Hegel opened up for Western man (Oriental philosophers, particularly Buddhists, had been aware of this for centuries) a new way of looking at "things"; not as "things" that either exist or do not exist, but as things that are defined in terms of how they relate to everything else. Einstein's studies of relativity have underscored the Hegelian insight; Heisenberg's

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1 See Wiener, Cybernetics 1948).
2 Korzybski, Science and Sanity 86-98 (1933).
uncertainty principle in quantum mechanics has taught students of science to question whether the smallest atomic particles can meaningfully be said to “exist” at any given time or place; and recently public awareness of ecology has popularized systems thinking as to concepts such as prey-predator relationships, cycles, interdependence, and holistic views of man in nature. Cybernetics pre-eminently focuses upon relationships, and thus this new science has had phenomenal growth across disciplines in the past few decades.4

The term “system” in cybernetic theory refers to a well-defined collection of things that are connected together. If we speak of a system, we are saying in effect that a change in any part of the system necessarily effects a change in all the other parts (“subsystems”) of the system. In our legal system, for example, a change in what the legislature does (i.e., a new statute) necessarily changes how courts will react to relevant cases. The term “legal system” is itself quite common in legal writing, and our intuitive feelings about what it means will be helpful in the discussion that follows. One jurisprudential use of the term “legal system,” that of Hans Kelsen and his followers, refers more to deductive relationships, as in a mathematical set, than to real legal systems as that term appears in this essay, and hence the Kelsenian approach will not be examined here. In the present essay, the idea of a legal system is an inductive theory based upon generalizations from many empirical observations (including the reader’s, who is therefore free to object at any stage). Obviously, the study of general systems in cybernetic theory would not have made much headway if it were but another abstract construct. Rather, systems thinking has helped illuminate many separate scientific disciplines because it reflects commonalities that are induced from specific observations. In the same sense, the notion of “legal system” that can be most helpful is that which attempts to describe the most important recurring features of authoritative legal institutions in today’s world.

The importance of relationships within a legal system might briefly be illustrated by an intuitive example. A man with no legal training or experience is appointed to the position of judge. He dons his black robe, ascends the bench, hears the clerk call the session to order, and soon the novice judge is listening to arguments of counsel and making rulings for one side or the other. We ask: Will the legal system break down because this judge is totally ignorant of the law? Sometimes legal educators would so like to think. However, in fact we must concede that the system will go on, and the new judge might not necessarily be worse than his colleagues. The reason for this, as a little reflection will show, is that the crucial fact is not what a judge knows in his mind, but what a “judge” is in relation to everything else. A “judge” is someone who is recognized as having an authoritative “role” to play in a legal argumentation situation that is itself highly structured.5 When counsel start to

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argue before the judge, the “case” is already forged and tempered out of much complex material. The lawyers have couched the case in legal terms, carefully excising all or most all of the complex and human aspects of the fact situation as it arose in the real world. The lawyers have taken away non-decisional factors, thus presenting the judge with a “yes” or “no” answer or series of answers. Additionally, of course, the judge is subject to reversal (correction of error) by a higher court or by a majority of his colleagues if he has been appointed to the highest court to begin with. Also, if we can look ahead somewhat, the novice judge will begin to “learn” something about the situation into which he has been thrust. If he does not learn “the law” he will at least learn to be cautious, to be consistent, to be conservative, for all of these traits will make his job easier. They make his job easier because counsel will not argue vehemently or raise their voices too much if the judge acts like a judge. Also, the judge will become skeptical of his jurisdiction, since the system dictates that his work load will be lightened if he can get rid of cases that do not come within his assigned jurisdiction. Additionally, when the judge is confused, he can send cases back for further argument, or require supplemental briefs to be filed on particular points, or ask his clerk, or even order counsel to get together and agree on some kind of order that the judge will sign. In short, the new judge will fit into the system because it is a system. If this were not so, there would be a need to “control” the new judge. A second judge would be needed to watch over him. However, no such isomorphic control is needed. In cybernetic theory generally, control is established not from outside but by the system itself. This is of course the best, smoothest, and most efficient kind of control, and we see it in all kinds of organizations in addition to the legal system.\(^6\)

The preceding example of course assumes that there is a legal system, and was chosen simply to show that one component part of a system is best defined in terms of its relation to the system as a whole. However, now let us move to the question of the nature of the legal system as a whole. We can examine two basic concepts that have appeared in jurisprudential theory: positivism and naturalism. “Positivism” herein does not include every theory under that label.

II. The Positivist Model

The first extremely rudimentary model of a legal system by a positivist was that of Thomas Hobbes in the \textit{Leviathan}:

\begin{center}
\begin{tikzpicture}
    
    
    \node [shape=rectangle, inner sep=0, minimum height=2.5cm, minimum width=2cm] (social) {SOCIAL CONTRACT};
    
    \node [shape=rectangle, right of=social, inner sep=0, minimum height=2.5cm, minimum width=2cm] (levi) {LEVIATHAN};
    
    \node [shape=rectangle, right of=levi, inner sep=0, minimum height=2.5cm, minimum width=2cm] (citizen) {CITIZEN};
    
    \draw [->] (social) -- (levi);
    \draw [->] (levi) -- (citizen);
    
\end{tikzpicture}
\end{center}

\(^6\) See Beer, Cybernetics and Management 28 (1959). Cf. Skinner, Walden Two (1948), which ends with Frazier claiming total control of the society, although he is lying on a hill bothering or coercing nobody, because he designed the society in such a way that its members would want to regulate their affairs exactly as Frazier had planned.
The social contract is a fictitious once-only agreement among all citizens that a government or Leviathan would be set up with absolute power over all citizens. On a day-to-day basis, the only Hobbesian legal system was therefore:

In this model, the law issues from the government to the citizen; there is no recourse, no "feedback." Hobbes deliberately set up a one-way street because he distrusted citizens; only a Leviathan would enact laws that would preserve the public safety and security. The citizen's alternative, as Hobbes argued, was anarchy. The Leviathan, in Hobbes' theory, could be a parliament or a dictator; either one fitted his model. Also, as far as courts were concerned, Hobbes discussed laws and the judicial system but never bothered to connect courts to his model of the machinery of government.

Over a hundred years later, Jeremy Bentham added to the Hobbesian model the judicial subsystem and a provision for citizen feedback. While Hobbes believed in a strong legislature in order to avoid anarchy and civil war, Bentham believed in a strong legislature because he hated the common law. Their shared preference for legislation is a hallmark of what has come to be known as "positivism." John Austin, a disciple of Bentham's, emphasized the parliamentary role by calling the legislature "sovereign" and labelling its enactments "commands."

Before depicting the Benthamite model, let us consider more particularly what Bentham was trying to do. Writing at about the time of the American Constitution, Bentham was animated by a sense of outrage against common-law judges (and their Equity counterparts so well depicted later by Dickens in *Bleak House*) for their bias in favor of the gentry and against the mass of people and their endless technicalities and legal fictions which served to siphon money from litigants into the pockets of lawyers who made cases drag on to no apparent clear result. The judges of Bentham's day also managed to construe Acts of Parliament so as to favor the landed gentry, and to invent, often out of whole cloth, all kinds of exceptions that again worked to the detriment of the public interest which Bentham defined in terms of the greatest good for the greatest number. Bentham castigated "judge-made law" and referred to common-law decisions as "acts of autocratico-judicial power." He wrote that judges derived principles of common law willy-nilly from decisions indifferently reported from books without a name, decisions badly reported upon the face of it but taken from printed books of high authority, ancient treatises quoting cases which when examined stand for the opposite principle, maxims, pleadings, the dictates of utility in the abstract, statutes, and other sources. The cure for

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8 *Id.* at 191-92.
all this, Bentham shrewdly realized, was a lot more legislation that would fill in all the gaps in the law and correct all the bad judge-made law. Thus Bentham spent his life as a moral reformer, and the codes and codification procedures he advocated made an impact all over the world (notably in Latin America). As far as the legal system was concerned, Bentham recognized the essential role of courts in applying the law, but stressed the role of the legislature in creating the law. The common law was something implicitly accepted by the legislature until changed by the latter; Austin added that the common law has authority only so long as it is tolerated by the sovereign. The Bentham-Austin model might be depicted as follows:

![Diagram](image)

This is a model of a closed system; a change in any of the subsystems (legislature, court, or citizen) will have an effect, indicated in the direction of the arrows, on the other subsystems. Although this is a model of real-world processes, each subsystem could equally well represent a computer wired to the other computers as shown. Thinking of a subsystem as a computer will help later in analyzing the behavior of the system as a whole.

The legislature in this model is in the “starter” position; the citizen-computer is on the receiving end. In Bentham’s scheme of things, periodic election of legislators was a critical aspect of his view of law; this is depicted in the model by the feedback effect a citizen has on the law by virtue of his ability to elect legislators. Without citizen feedback of this sort, the system would tend to become unstable if not dysfunctional; the classic tyrannical forms of government could ensue. Bentham realized (as Hobbes did not) that periodic election of legislators would tend to guarantee that legislators, in striving to keep their jobs, would pass laws satisfying major citizen demands. The entire system would therefore achieve stability with the election process acting as a kind of servo-mechanism for keeping the legislature within non-system-disrupting bounds. Perhaps even more important to Bentham’s own scheme of things was his realization that legislators would soon find it within their own self-interest (particularly if they read Bentham’s books on utilitarian lawmaking) to enact laws that would do the greatest good for the greatest number. Thus the content of laws could be changed from the

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9 See Machiavelli, The Discourses, chap. II.
unrepresentative and biased judge-made law to utilitarian legislature-enacted law.

However, where does the model itself refer to "law"? The directional lines on the model (or the electronic connections between computers) do not specify what it is that they are transmitting. To begin with, let us assume that what is being transmitted is information. This assumption, in fact, is crucial to cybernetic theory, and without it any model of this sort would not make much sense. Without at present specifying what kind of "information" it is, we should note that the legislature-computer is transmitting a "message" to the court which receives it and processes it, and the court in turn issues a "message" to the citizen-litigant. Then, in the periodic election process, the citizen-litigant gets his chance to issue a message to the legislature. We might call the first message a statute, the second a decision, and the third a vote. Thus the model appears to be a good representation of the real-world legal system. Moreover, the model certainly is not cluttered with the problem of distinguishing law from morality, an issue which preoccupies twentieth-century jurisprudence. Indeed, Bentham and Austin took pains to distinguish law from morality inasmuch as they identified judge-made law with a certain kind of moralizing and obtuse moral self-justification on the part of common-law courts. In the positivist model one clearly sees that the legislature, in the starter position, can issue any messages it chooses. Hence there is no necessary connection between enactments and morality, no matter how one might define the latter. To be sure a legislature might not want to pass a bill that offended the morality of the public for fear of being voted out of office at the next election, but this would be a prudent calculation and not a necessary connection.

The positivist model has had a great appeal to lawyers and students of the law, and in England and the United States it probably represents the prevailing general view of the legal system. It has the virtues of simplicity and clarity, whereas the naturalist model (to be depicted later) is harder to understand. Yet Bentham's model tends to hide problems that, when examined, raise basic doubts about the model itself and whether it represents meaningfully the real world legal system. The most fundamental of these problems is the question of the role of the court-computer. What is its function? What did Bentham want, and did he achieve what he wanted?

A. The Problem of the Court's Role

Bentham and positivists since Bentham have tried to minimize the court's role in the legal system because of its unrepresentative character and (perhaps) its conservative bias. In a sense, a pure positivist might possibly wish that there were no court at all, and in so wishing he would be harking back to Hobbes' simplistic model, the forerunner of positivism. However, such a wish, if it exists, could never find fruition in the real world. Even if a nation were to abolish courts, nevertheless a "court" in functional terms would have to exist within the legal system. A "court" in this necessary sense means a body that will apply the law (whatever that means) to facts that have already occurred. A "legis-
lature,” in contrast, invents law for facts that have not yet occurred. These are of course general statements of function; exceptions can be found, such as the broad-based judicial injunction which looks very much like a statute, or the bill of attainder which looks like a legislative judicial decision. Hobbes of course knew about this basic division of function, but he simply was not concerned with courts in his Leviathan, and therefore his model is concededly incomplete. Bentham, and particularly Austin, could not leave courts out of the picture, as much as Bentham might have liked to) and so they attempted instead to come to grips with the legislative-judicial dichotomy in their theories.

Given the necessity of accounting for the role of courts, a positivist's next best wish would probably be to reduce the court to a mechanical fact-finding and law-applying role. Bentham wrestled with the problem of how to do away with judicial “creativity.” However, he never came up with an answer. He could find no way, theoretically, of wiping out any chance of judicial creativity. No mechanism presented itself that would ensure that a judge would simply “apply” statutory law to a given fact situation. Even if Bentham were given a free hand in writing a new constitution for a new state, he could think of no way to make sure that a court would only apply law instead of creating some of it in the process of “applying” it.

Instead, Bentham resorted (effectively) to polemics. He castigated the dead hand of the common law. He drafted reform bills and codes. He constituted himself as a one-man pressure group to get reform legislation passed in England. He also had great effect in other countries, through his writings, in the progressive codifications of much of the civil law at the end of the nineteenth century. There was also associated with positivism a movement for the election of judges, so that judges, like legislators, would be more responsive to popular wishes; here the success was only partial, especially since most countries did not adopt periodic election of judges (and periodicity, as we have seen, was crucial to Bentham's conception of keeping legislators in line). Probably the greatest effect on the law due to the writings of Bentham and Austin was the gradual adoption of the positivist viewpoint by judges themselves. If a judge himself believes that the legislature is the fount of law, then he will probably attempt to reduce his own “creativity”. However, this, as is true of all of Bentham's urgings, does not amount to a necessary or inherent part of the legal system. Positivism, in this sense, is simply a theory of how the law should be interpreted by judges.

However, if Bentham did not eliminate judicial creativity, positivist theory particularly as examined by Austin did face up to the question of what a court does when it processes information from the legislature. Does the court simply apply the law? Does it add in a dose of its own notion of what the law should be? What does “apply” the law mean? Let us approach these questions from the vantage point of cybernetics.

“Information” in cybernetic theory is defined as a message that we had not expected to hear, a message that is “new” to us, that somehow
teaches us something. In contrast, a highly predictable message has little or no "information" value. The idea is roughly the same as "news"; it is news when man bites dog but not when the reverse happens. In the positivist model of a legal system, the legislature-computer is designed to initiate information flow. Hence it is the most creative, least predictable, or in computer-programming terminology the most "random", of the message-generators within the system. In contrast, Bentham wanted the court-computer to be highly predictable, to simply apply the legislative message to the facts as found. The less information added by the court, the better. Bentham did not want the court to transform the legislative message, and hence in the extreme the court's role would be as follows:

Here the court-computer is indicated in dotted lines; the message travels through it untransformed. However, desirable though this model might be to Bentham, it systemically reduces to the Hobbesian model. The court is "named" but it has no function. In some ideal world having no disputes about the meaning or application of legislative enactments, such a model would apply. Yet, as soon as we attempt to deal with human nature as it really is, we find that no such model could ever apply in practice. One man, finding that he is disadvantaged compared to another man, could "create" a "dispute" with the latter, citing a statute that he argues would resolve the dispute in his favor and cause the second man to pay him a sum of money. Unless there is some body that will determine authoritatively the facts of the situation and then apply existing law to those facts (resulting, in this hypothetical case, in a decision for the defendant), physical violence might break out. The potential for a war of all against all is inherent in any society where there is an unequal distribution of wealth; and of course any society will have an unequal distribution of wealth even if everyone were to start equally due to the fact that some people will work and save, others will work and spend, and others will not work. In sum, the Hobbesian

\[12\] A computer arguably can itself generate randomness—e.g., "noise," or a list of random numbers derived from taking, for example, the 3rd, 5th, and 7th digits after the decimal point of the square roots of the prime numbers. To argue that the institutions of court and legislature can also be depicted as computers is not therefore invalidated by the widespread notion that a computer's output, unlike that of a human being, is deterministic.
\[13\] For a more extended discussion see D'Amato, The Concept of Custom in International Law 176-77 (1971).
model can never apply in practice due to the need for some institution to settle disputes or to discourage disputes that would otherwise arise in the absence of such an institution. Thus any realistic model must have within it a "court" (the name is of course unimportant; it could be an arbitrator, a tribal chief, a panel of distinguished citizens, etc.), and the court's decision must in some degree be creative and unpredictable. The "court" must issue "messages" that have "information value" apart from the entire body of existing law—whether statutory, codified, common law, or all three.

B. Austin's Explanation

Austin faced up to the problem of judicial creativity that was never analyzed in Bentham's writings. Frankly recognizing that courts must contribute an informational input into the legal system, Austin called such judicial creativity "legislation":

I by no means disapprove of what Mr. Bentham has chosen to call by the disrespectful, and therefore, as I conceive, injudicious, name of judge-made law . . . I cannot understand how any person who has considered the subject can suppose that society could possibly have gone on if judges had not legislated, or that there is any danger whatever in allowing them that power which they have in fact exercised, to make up for the negligence or the incapacity of the avowed legislator.\(^\text{14}\)

Many historians of jurisprudence have wondered why Bentham and Austin had so little personally to do with each other although they were both positivists and both towering figures in jurisprudence in nineteenth century England. The above passage probably tells more than any number of diaries, personal reminiscences, and observations of friends. Yes, Austin was a positivist and a disciple of Bentham, but from Bentham's perspective Austin missed the entire point of Bentham's jurisprudence. Bentham attempted to reduce the role of courts which he considered unrepresentative institutions. In contrast to the practicality of Bentham, Austin was an extreme ivory-tower type, concerned verbally with utilitarianism and interested in the theories of law, but blind to the problem of how to effectuate utilitarianism in the real world. The heart of Bentham's theory was that the election process will ensure law-making by legislators that conforms to the principle of the greatest good for the greatest number of voters. Austin missed this entire point in arguing that judges could make laws just as well as legislators.

Nevertheless, Austin could defend his theory simply in terms of its explanatory power. He, in fact, did grapple with the problem of judicial creativity, and concluded that when judges are creative they are simply legislating. To be sure, it is retrospective legislation, since the judge's legislation applies to the past facts of the litigants' case as well as to future cases. However, it is legislation all the same. Positivists since Austin have continued with this theme, claiming for it a realism that

finally illuminates the hitherto murky and confused theories that attempt to show that judges “find” the law and never “make” it.\textsuperscript{15}

The temptation exists to conclude that it doesn’t matter what we call the creative component in the judicial subsystem, and that calling it “legislation” is probably as good a label as any other. But the problem is deeper than the matter of labels. If a judge in fact “legislates”, then to that extent he is not being a “judge” but is assuming the role of a “legislator,” as these terms have been used above. A “legislator” is free to invent law; he does not have to make the law he invents be consistent with prior law. A “judge” on the other hand is called upon to apply existing law to past disputes. This distinction formed the entire rationale for Bentham’s positivism. He wanted “legislators” to pass new utilitarian statutes, and by “legislator” he meant a person who is subject to periodic elections and can be called to account by the public for the legislation that he sponsored. Bentham would not have wanted to delegate part of this legislative function to judges; or, if he were forced to do so, he would have wanted the judges to stand for periodic elections, become associated with the new laws they announced, and for all intents and purposes sit as members of the legislature.

Nevertheless, a positivist of Austinian persuasion could ask: what happens when there is no law for a judge to “apply” and yet he must render a decision in a controversy? In those situations, does he not “legislate”? Is not a court, in this view, a lesser legislature, legislating only in those areas where the Legislature Proper has not passed a statute? Such a model might be:

\begin{center}
\includegraphics[width=0.5\textwidth]{diagram.png}
\end{center}

In this model, the same “court” has two different functions: to act as a conduit for the legislative message, or to invent messages where the legislature has not spoken. We will later consider the questions of who determines which role the court is playing at any given time, and by what methods would such a determination be made. But for the present, assuming that the distinction is operable, let us consider whether it is indeed realistic to say that a court—at times—“legislates.”

Sir Frederick Pollock in 1906 viewed the matter this way:

\begin{quote}
No intelligent lawyer would at this day pretend that the decisions of the Courts do not add to and alter the law. The Courts themselves, in the course of the reasons given for those
\end{quote}

\textsuperscript{15} E.g., Hart, The Concept of Law 121-50 (1961).
decisions, constantly and freely use language admitting that they do. Certainly they do not claim legislative power; nor do they exercise it. For a legislator is not bound to conform to the known existing rules or principles of law; statutes may not only amend but reverse the rule, or they may introduce absolutely novel principles and remedies, like the Workmen's Compensation Act. Still less, if possible, is he bound to respect previous legislation. But English judges are bound to give their decisions in conformity with the settled general principles of English law, with any express legislation applicable to the matter in hand, and with the authority of their predecessors and their own former decisions. At the same time they are bound to find a decision for every case, however novel it may be; and that decision will be authority for other like cases in future; therefore it is part of their duty to lay down new rules if required. Perhaps this is really the first and greatest rule of our customary law: that, failing a specific rule already ascertained and fitting the case in hand, the King's judges must find and apply the most reasonable rule they can, so that it be not inconsistent with any established principle.16

Pollock, therefore, admits the fact of judicial creativity, but denies either that judges recognize it as "legislation" or that it can reasonably be termed "legislation". In the context of Pollock's argument, let us examine the matter from the standpoint of the litigant.

A litigant basically represents to a court that he participated in certain actions in the past under a belief that those actions were legal under existing law at the time. How would the litigant feel if the court were to say, "It's too hard for us to figure out what the law was at the time, but we think that in the future it would be best to have a rule that would make actions such as yours illegal, and therefore we hereby announce such a rule, and moreover we apply it to your case and thus decide your case against you." The litigant clearly would feel that justice was not done for him, that the court was usurping a legislative function and usurping it in the worst possible way—by making its legislation retroactive, and that if he had gone before a different judge or a different court the outcome probably would have been different since free-wheeling legislation of this type could result in wildly different preferences by different judges. This feeling would of course be underscored if the litigant was a defendant in a criminal case and the result of the court's law-making was that he would be put in jail. Normally we do not think of the positivist notion of judicial legislation applying in criminal cases since all or nearly all of the world's national legal systems do not countenance such a procedure; yet the fact that they do not is strong evidence that in the vast category of the legal system known as "criminal law" there is no room for the theory that a judge can freely legislate in areas not covered by the Legislature Proper. And the criminal case simply is a more dramatic version of what a losing party would feel in a civil case if the court acted as a legislature. Put simply, the

16 Maine, Ancient Law 46 (Pollock 1st ed. 1906) (Note D).
reasonable expectations of the parties to any judicial proceeding include an image of the decider as a person who will not spring a legal surprise or be totally unpredictable in his decision, but rather will strive to apply the law as it was when the facts of the case arose.

As was stated earlier, Bentham had a strong distrust of the "sources" used by the judges in "finding" the law in difficult cases, and perhaps subsequent positivists have argued for the "legislative" interpretation because they share Bentham's cynicism as to the quality or reliability of all these "sources." But in fact judges look to sources that are cited by the parties to the case. The litigants themselves cite these various "sources" of law in an attempt to show what the law actually was at the time the facts arose. Even more importantly, lawyers tend to "act out" their assumption that prior law existed by the extensive use of analogies in legal reasoning. An "analogy" is something that can stretch very far; it can truly make law appear as a seamless web. Theoretically it is possible to say that any prior case is analogous to the case at hand, the only question being how close or how far is the analogy. An analogy can be extremely far-fetched, but then the lawyer on the other side will cite a less far-fetched analogy, and so on, until relatively close analogies can be cited for any fact situation. In theory there is no such thing as Pollock's quoted "case of first impression"; rather, a case seems more or less new depending on the closeness of the prior cases and legal rules that are analogized to it. A judge, in a basic sense, is engaged in the art of comparing the closeness of analogies. In this sense, too, it is unrealistic to call the judicial art "legislating," for a true legislator is not at all concerned with analogies to prior rules or cases. In sum, if Austin changed Bentham's priorities by championing judge-made law so long as it was labelled "legislation," a closer look at this analytic contribution to positivism should convince us that it is really not an explanation at all of what a court does. Rather, through the time of John Austin, the role of the court in positivist theory remained unexplained.

C. Gray’s Judicial Model

One possible way to resolve the question of how a court transforms the legislature's output is to go to the extreme and argue that only the court makes law. John Chipman Gray, who is generally included in the positivist tradition, quoted in his 1908 lectures Bishop Hoadly's remark: "Nay, whoever hath an absolute authority to interpret any written or spoken law, it is He who is truly the Law Giver to all intents and purposes, and not the Person who first wrote and spoke them." Gray argued that a statute is a source of the law, like lots of other sources a judge might consult before deciding a case, and though there are "undoubtedly" limits upon a court's power of interpretation, "these limits

are almost as undefined as those which govern [courts] in their dealing with the other sources\textsuperscript{10}. Gray’s model is therefore:

\begin{center}
\begin{tikzpicture}
  \node[draw,rectangle] (court) at (0,0) {COURT};
  \node[draw,rectangle] (litigant) at (2,0) {LITIGANT};
  \draw[->] (court) -- (litigant);
\end{tikzpicture}
\end{center}

The legislature is not shown in this model because it has no necessary impact upon the court; in Gray’s view, the legislature of course influences the court, but so do many other influences (such as those supplied by the ultra-realists in American positivist jurisprudence in the 1930’s, influences like what-the-judge-had-for-breakfast). Gray’s model is very much like Hobbes’; Gray substitutes the court for the Leviathan-legislature.

One criticism made of Hobbes’ model cannot be made of Gray’s. A legislature-to-litigant legal system is inherently incomplete due to the need for a law-applying body. But a court-to-litigant legal system is possible in the real world. In medieval times, before the advent of strong legislatures and theories of legislation in the writings of theorists such as Jean Bodin and Hobbes, communities existed with judges who simply purported to find and apply existing law. In any event, the medieval period is over and all or nearly all legal systems in the world today have “legislatures” which are free to enact prospective rules.

Thus the significant question is, does Gray’s model account for the role of legislatures? Let us suppose that the legislature in a state changes the maximum vehicle speed on highways from 70 m.p.h. to 60 m.p.h. Can it realistically be said that this is not a “law” until a driver gets arrested for driving in excess of 60 m.p.h. and he is convicted by a court? If that were so, then Gray would appear simply to be departing from the accepted definition of “law”. To make the example even stronger, suppose someone gets arrested for driving 68 m.p.h. and he is acquitted even though the judge found as a matter of fact that he was driving 68 m.p.h. and had no legal excuse or privilege. Under Gray’s theory this would automatically make the now existing “real” law a 68 m.p.h. maximum instead of 60. But in the real world the judge’s decision would hardly have that effect. The highway signs would still read “Speed Limit 60” and motorists would still be arrested for travelling in excess of 60 m.p.h. and other judges would probably convict them. Even if a motorist knew of the 68 m.p.h. “precedent”, would he be safe in assuming that he could travel at that speed himself? Would his lawyer advise him that he can safely count on the decision and not the statute?

A moment’s thought about these questions indicates that what Gray really was saying is that the law for the motorist who was acquitted when he drove 68 m.p.h. is certainly the “law” for him, whereas everyone else is not quite as certain as that motorist as to what the law really is. Or to put the matter differently, judge-made law is truly law for the litigant before the court. But the “law” for the litigant, expressed in

\textsuperscript{10} Id. at § 275.
terms of a concrete judicial decision addressed to him, is then a somewhat different kind of "law" from the law that guides our prospective actions. Future-oriented rules are inherently uncertain. No one can predict with complete assurance what a court will do, no matter how clear the statute seems. But it would be absurd to deny to future-oriented rules the title "law", since those rules shape most of the behavior in a society. The number of actual litigants in court cases is only a fraction of the citizenry, and numerous statutes operate on a day-to-day basis without ever being contested.

Gray's model, then, must be rejected as incomplete. His theory over the years has certainly not attracted any notable adherents. Yet it is an interesting theory, both as an example of an extreme logical position, and as a reminder that the difficulty of explaining the court's role in the positivist model led at least one positivist to try for an "explanation" that would scuttle completely the legislature which was the raison d'être behind positivism as launched by Bentham.

D. Hart's Explanation

Gray's theory was of course no solution at all to the positivist problem of preserving intact the legislative message without interference by a court. The question, after Gray, could be formulated as follows: is there any way for any part or any portion of the legislative message to get through to the citizen-litigant without the possibility of judicial interference? Framing the problem this narrowly certainly departs from Bentham's preferences, yet in terms of analytical positivism there is a crucial difference between having at least a portion of the legislative message getting through untransformed and Gray's position which would give a court supreme transformation power. Recently H.L.A. Hart has attempted to vindicate the analytical positivist position by a theory of core and penumbra which might be modelled as follows:

![Diagram](image)

The three lines of communication shown as outputs from the legislature represent, in this diagram, one message; the outer lines indicate what Hart calls the "penumbra" of the statute and the inner line the "core."

The court merely transmits the "core" without alteration. But the court does transform the penumbral parts of the message. Each statute, according to Hart, has a core and a penumbra, and thus his theory is a general one. In line with his positivist predecessors, Hart considers the court's ability to transform the penumbral part of the message as authorized.

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20 Hart, op. cit. supra n. 17, at 607-08.
by delegation from the legislature. In other words, when a legislature passes a statute, it is saying to the court: transmit the core portion of this message intact, but you are hereby delegated to “legislate” or otherwise be creative (i.e., add information) with respect to the penumbral portion of this message.

Hart indicates what he means by core and penumbra with an example: a statute that forbids you to take a vehicle into the public park. The “core” of this statute, Hart says, plainly includes an automobile, and therefore a court has no choice but to apply the statute in such a way as to forbid the taking of an automobile into the public park. But the term “vehicle” might cast a wider net than simply encompassing the automobile. This Hart calls the area of the “penumbra.” The penumbra might include bicycles, roller skates, toy automobiles that are battery propelled, or airplanes. Do any of these come within the term “vehicle” in the statute? All these mechanisms have some features in common with automobiles and some entirely different features (such as the airplane’s ability to travel above the ground). The penumbra of uncertainty, Hart continues, surrounds all legal rules, whether about “vehicles” or in relation to the multidimensional generalities of a constitution. A penumbral situation is characterized by the fact that a judge cannot (in Hart’s view) make a logical deduction from the statute. Thus the judge must legislate within the area of the penumbra. Indeed, the legislature (we assume) knows this, and is perfectly happy to have the judge legislate within the penumbra so long as the core of the statute is preserved to effectuate the legislature’s immediate intent. Clearly the legislature can refine the statute later with the judicial interpretation of the penumbra (e.g., “No Vehicles, No Bicycles Allowed In This Park”). This ability of the legislature to add a new “core” to any statute should go a long way to appeasing Bentham’s position that the legislature is supreme. The only question is whether Hart is right about the “core” of the legislative message.

In analyzing Hart’s theory, we might begin by simplifying his model. Clearly Hart is indicating that any legislative enactment has two parts: a core and a penumbra. The “core” aspect can be treated as one message, a message to the court to transmit the legislative message without adding any more information to it. The “penumbral” aspect can be treated as a second message, a message to the court that this legislative signal can be made less predictable by the addition of the judicially inspired information. The diagram then would look like this:

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21 Id. at 607. See also Hart, op. cit. supra n. 15, at 125.
In this modified model the upper or "core" signal is transmitted without change through the court; hence the court operates in name only, which is indicated in dotted lines. The lower signal is transmitted into the court which transforms it and applies it to the citizen. In this lower half of the diagram the court is a "black box" (a term applying to a subsystem whose internal wiring is unspecified), capable of acting "creatively" upon the message. In this latter role, the court according to Hart is explicitly acting legislatively; it is in fact a mini-legislature filling in the "penumbral" part of the statute. Thus the diagram further simplifies to:

But now we note that this model is perilously close to the Austinian version of the legal system (supra p. 181). It is thus subject to all the critical difficulties adduced with respect to Austin's model. The only difference is that Hart's model includes a connection from legislature to court (the vertical downward-pointing line); Austin's theory does not make explicit the need for such a connection, although certainly a legislature-court hookup would not be incompatible with Austin's theory. But whether the connection exists is not of great significance since the actual court (and not the dotted-line court that exists only in "name") is a black-box subsystem in any event. As such, its internal procedures are unspecified, and hence the "penumbral" part of Hart's model throws no new light on the positivist's difficulty in assuring legislative supremacy. We are left only with the "core" part of the diagram. The positivist theory is vindicated only if a court does act in name only in transmitting without alteration the "core" portions of all legislative enactments.

To analyze the question whether a court transmits without alteration the core portion of a statute, let us begin by conceding that a "core" of a statute is defined as a message that is transmitted without alteration by a court. For it would be unfruitful to argue that Hart's own use of the term "core" is wrong. Rather, let us stipulate that the "core" message, whatever that is, is not transformed by the court. If the court thus acts in "name" only, that is no drawback to the theory; perhaps courts do act in name only insofar as the core of a statute is concerned.

The one question that we can ask that is operational and not simply definitional is: who controls the decision as to which part of a statute
is the core and which part is the penumbra? In Hart's theory the answer is clear: the legislature controls this decision. Of course Hart would concede that the court "makes" the actual division into core and penumbra, but only out of necessity of the fact that the court is hearing the case and the legislature has long since passed on to other business. But Hart is saying essentially that the court has no choice in making the division between core and penumbra. For the choice has already been made by the legislature when it chose the words for a given statute. Thus by saying that no vehicles may be taken into the park, the legislature has decided that automobiles at least come within the core of the statute, and the court has authority only to apply this statute to automobiles. Similarly, as to helicopters, the legislature has decided that that case comes within the penumbra, and thus the court has legislative discretion whether or not to apply the statute to helicopters.

E. Fuller's Criticism of Hart

Hart's position could be assailed if a hypothetical case could be invented that is completely unresolvable as to whether it falls within the core or penumbra. Lon L. Fuller has come up with such a case and yet the importance of his argument has not been generally recognized, perhaps because his hypothetical case seems unique if not outrageous! Before considering it, we might consider an analogous instance in the history of mathematics. In 1874 Georg Cantor pondered the meaning of an infinite set of objects. He wondered if there was any infinite set so vast that its members could not be counted. Counting, of course, involves an infinite set of numbers, for there is always a number higher than any number that you can name. Cantor called the denumerably infinite set of whole numbers aleph-null (\(\aleph_0\)). Then he asked whether there was another infinity that was infinitely higher than \(\aleph_0\); in short, could there be any collection so vast it could not be counted? Remarkably, Cantor succeeded in proving that there are infinite sets that are not denumerable. He found one such set, the set of all real numbers (composed of all whole numbers, all fractions, and all the irrational numbers), and labelled this number C. The procedure by which Cantor arrived at C for the set of all real numbers was to assume that there was a list of all the real numbers, and then prove that there was at least one real number that was not on the list. In other words, in an infinite and infinitely denumerated list of real numbers, if Cantor could show that at least one real number was not on the list, then the assumption was incorrect—there could not be a list of real numbers and hence all the real numbers could not be counted, were not denumerable, and thus constituted a higher infinity than \(\aleph_0\). Cantor did this by assuming that a listing of all the real numbers was made. Then by changing the first digit of the first number on the list (such as by changing 1 to 4), changing the second digit of the second number on the list (e.g., 2 to 7), changing the third digit of the third number on the list, and so on infinitely, a number could be constructed which was not on the list. The newly constructed number would differ from every number on the list at least in one digit; it would differ, for example, from the 247th number on
the list because its own 247th digit would be different from that of the
247th number on the list. Today Cantor's one-to-one-correspondence
method and his theory of sets seems obvious and is taught as part of
the "new math" in elementary schools, but in 1874 the procedure was
revolutionary.

As Cantor found a number not included on the infinite list of num-
bbers, Fuller found a case unspecifiable in terms of core or penumbra
under Hartian premises:

What if some local patriots wanted to mount on a pedestal in
the park a truck used in World War II, while other citizens,
regarding the proposed memorial as an eyesore, support their
stand by the "no vehicle" rule? Does this truck, in perfect
working order, fall within the core or the penumbra?22

There is clearly no a priori answer to this question; hence the court must
exercise an inherent discretion to decide between core and penumbra,
and therefore the legislature cannot be said to have controlled this
decision by its statute. But the trouble is that Fuller's hypothetical may
seem far-fetched, and commentators so far appear to be slow in recog-
nizing its significance. Yet if Cantor's construction of a single non-
denumerated number implied an infinity of such numbers, so too Fuller's
example leads to an indefinite number of other such indeterminable
tests of core and penumbra. For instance:

(1) A truck carrying gravel used to repair a portion of the grounds
within a park.

(2) An automobile used because an ambulance was unavailable, to
go into the park to pick up a stretcher bearing a child who has fallen
out of a tree and needs immediate transportation to a hospital.

(3) An automobile commandeered by a policeman to chase a murder
suspect who has run into the park.

Present imagination and future reality can add indefinitely to this
list; our park can begin to resemble an automobile junkyard without
even considering penumbral cases of Sherman tanks, flying saucers that
land within the park, hydrofoils, motorized play-pens, or visitors from
outer space who have wheels instead of legs for their personal loco-
motion. The significance of Fuller's opening-wedge hypothetical is that
it refutes Hart's attempt to salvage the Benthamite legislative-supremacy
model of positivism. There now appears to be no way to have a "court"
(again in the sense of a body that determines the legal consequences of
past behavior) without giving the court the power to interpret the entire
content of legislative messages. The core-penumbra distinction, as Fuller
has shown, is not a tool that will enable the legislature-computer to
control the decisions of the court-computer. Rather, the court's behavior
seems inherently unspecifiable even though, obviously, it is subject to
great influence by the legislature.

22 Fuller, "Positivism and Fidelity to Law—A Reply to Professor Hart," 71 Harv.
L. Rev. 630, 663 (1958).
Interestingly, Fuller does not appear to have seen the great potential difference between his hypothetical and Harts’ theory in the article in which Fuller presented the hypothetical case. For Fuller goes on in part to suggest that greater attention by the court to the legislative purpose behind the statute is what is needed to cure the deficiencies in Hart’s theory. But to the extent that the legislative purpose can be thought to be ascertainable substantively, a positivist might accept Fuller’s proposed cure simply by expanding in the statute or its preamble the substance of the legislature’s purpose. A statute might read: “Interpret our command that no vehicles be allowed into the park so as to prevent the public from using any motorized vehicle that runs on more than one axle for convenience in getting into the park.” In addition, the statute could spell out verbatim everything that Fuller says about how a court should interpret the legislature’s purpose! A positivist might then argue that this verbatim incorporation of Fuller’s theory of interpretation has a “core” meaning consonant with the meaning that Fuller attributes to it, and hence Fuller’s theory could be subsumed within the positivist model.

However, in a later work Fuller clarifies his position and makes it evident that the purpose of the legislature is not itself the determining factor in judicial interpretation of legislation. Instead, he argues:

The troublesome cases are in reality resolved not in advance by the legislator, but at the point of application. This means that in applying the statute the judge or police sergeant must be guided not simply by its words but also by some conception of what is fit and proper to come into a park; conceptions of this sort are implicit in the practices and attitudes of the society of which he is a member.

Perhaps another way to put this is that any purpose a legislature might have in enacting a statute could be said to have two components which we might loosely label substantive and procedural. The substantive component would include the real-world picture that the legislature had in mind, consisting in Hart’s example of an automobile or a truck attempting to disturb the peace of a public park, or similar images. Perhaps with great elaboration and attention to draftsmanship, a statute could achieve a marked degree of clarity and function as a good set of directions to a court. However, the procedural component of the legislature’s purpose cannot ever be specified, since it consists of a command to the court that might loosely be translated as “behave like a court.” In other words, part of the legislature’s purpose consists of a knowledge that later on in time a court, or a policeman, will have to interpret the statute in light of changed conditions or new events unforeseeable by the legislature or unanticipated privileges and exceptions that the legislature might or might not agree with. Yet the legislature enacts the statute with this procedural purpose in mind because the legislature is familiar with what courts do and how courts behave. In brief, the subsystem we call the

23 Id. at 663-69.
legislature is familiar with the subsystem we call the court, recognizes its indispensability, and operates under a set a reasonable expectations that the court will continue to behave as a court does “at the point of application.” If this broader view of “purpose” is taken, then Fuller has shown that a court necessarily acts on its own to some extent as a generator of information. Thus, Hart’s model does not ultimately explain the role of the court, and a new non-positivist model is needed.

F. Is Legislative Control Impossible?

The positivist model of a legal system considers, in cybernetic terms, the communication relationship between court and legislature to be homomorphic. The notion of “homomorphism” is that of a many-to-one mapping. A legislature passes a single statute using the word “vehicle” with the intent that this word will apply in the future to hundreds of thousands of automobiles. Many cases, in other words, are controlled by one statute. It is analogous to an invading horde that must travel through a narrow pass that is defended by a single soldier with a machinegun. But as we have seen, the legislature-judicial homomorphism does not apply in the real world, for the real world is a variety generator of far more complexity than words in statutes could ever encompass. For example, what would a statute look like that attempted to legislate all the penumbral meanings of the word “vehicle”? The list would be quite long, and would have to be updated with each new technology. Or suppose that a legislature wants to specify all possible Fuller-type exceptions to the “core” meaning. Suppose it adds to the statute an exception for vehicles to be erected as memorials and an exception for automobiles used as ambulances. Even so, real-world variety will outstrip the statute: would the exception still hold for the second memorial, and the third, and the fourth, until the park is completely filled with memorial statues, or is there an implicit limitation upon the number of such exceptions within the statute? What if the public begins to claim that their automobiles are used as ambulances to deliver or to pick up aged or infirm people who want to sit in the park? Can any statute however often it is revised spell out the exact line between cases where a car is used as an ambulance and those cases where the disability isn’t serious enough to justify an ambulance? In the real world, a court or a policeman at the point of application handles such cases by making a human judgment as to whether, all facts taken into consideration, the situation falls on one side of a line or the other. However, it appears impossible to specify in advance, using the relatively ambiguous medium of “language,” where the line is to be drawn for all time.

The same result can be reached by using Ashby’s Law of Requisite Variety, a cornerstone of cybernetic theory.25 The only way to control a situation, Ashby shows, is for the controller to have as much variety as the controlled. From the viewpoint of a legislature, the future of the real world has infinite variety and therefore can never be controlled in the

25 Ashby, An Introduction to Cybernetics 207 (1956) (“only variety can destroy variety”).
legislative present by means of a finite number of statutory words. However, if we have a body that makes decisions relating to past actions, such a body will have the requisite variety to decide the cases so long as they are decided one at a time. This body, a “court,” is thus a better analogy to the machinegunner guarding the pass. The past is something that has been uniquely determined; the future consists of an infinite set of possibilities. The only way a legislature could completely control a court is to turn itself into a court. However, even if that happened (vindicating Hobbes!), we could still speak of the combined body as at times functioning as a legislature (when making prospective rules) and at times functioning as a court (when deciding retrospectively), even if some of these instances overlap. For all the reasons previously given, this functional division would remain unexplained by positivist theory.

III. The Naturalist Model

Let us for the moment call a model that differs from the positivist model in various ways that attempt to take account of the preceding criticisms a “naturalist” model of the legal system. Primarily, the naturalist model abandons the attempt to make the legislature dominant over the court. The two simply have different functions; neither one is more important than the other. If you ask a child what makes an automobile run, he might reply “the motor”; another child might reply, “gasoline.” Each answer is as “valid” as the other; the functions are simply different. In the same way, a naturalist would view the legislative subsystem and the judicial subsystem as necessary but different components of the legal system. Secondly, and by way of extension, a naturalist model would also include the executive and the administrative subsystems (if they in fact exist in any particular national legal system) within the legal system. Of course, the litigant is also included, as was the case with positivism. The temptation must be resisted, however, to include willy-nilly other organizations and associations such as corporations, labor unions, churches, and so forth. These latter combinations are not part of the official legal system, even though for many purposes it is useful to think of their internal rules as “law” or something very close to “law.”26 We should not confuse the official legal system with other systems of rule-making for the useful reason, adduced by leading positivist thinkers primarily, that jurisprudence should tell us among other things what “counts” as a “law” in the legal system in the sense that it can or may be authoritatively enforced. To be sure, the notion of enforcement or sanctions is complex and, in limiting cases, unsatisfactory. Yet for present purposes the model we use for “the” legal system can be thought of as including only those communications among authoritative bodies that are susceptible, in theory at least, to enforcement by the monopoly power of the state, whether the enforcement is in terms of rewards and/or penalties.

Third, the notion of “feedback” plays a different role in the naturalist model. Under the positivist system, as we have seen, feedback was reserved for the citizen-litigant’s reply to the legislature on election day.

The citizen, as recipient of the legislature’s enactments applied through the courts, has the chance to change the personnel of the legislature if he is dissatisfied with the laws; in turn, the legislators, knowing this, will strive to satisfy the citizenry by passing laws that provide for the greatest good for the greatest number. However, the positivist model does not provide for a direct feedback from citizen to court. Such an omission would be unimportant if the court were merely a conduit for statutes, but as we have seen, positivist theory has not been able to reduce courts to a non-creative role. Thus, in the naturalist model, direct feedback is necessary to be shown from litigant to court.

The question then arises: what kind of feedback is it? Under the naturalist model, the citizen of course does not elect the judges of a court (remember that both the positivist and the naturalist models apply to the same real legal system). Rather, citizen feedback to the court in the naturalist model takes the form of information about the citizen: his personality, his needs, his abilities, his expectations, even his sense of justice or morality. The court in getting feedback this information is in a better position to apply the law to the citizen-litigant. In addition, after the judgment, the court will get as feedback from the litigant information as to compliance. If the litigant has not complied, the court of course can order further measures to ensure compliance, such as a contempt citation. Also, noncompliance as feedback will have an effect upon the court’s own judgmental processes. The court may become less willing, in the next case or in the next stage of the present case if any, to issue the same kind of order, since a court naturally and systematically does not like noncompliance. We have seen historically that great public resistance to laws tends to get the laws changed (prohibition in the United States, various anti-marijuana laws in many countries today); the same is certainly true of courts within a legal system, and in fact courts have tended to find that they do not have “jurisdiction” over certain kinds of disputes where they may feel there will be noncompliance (e.g., “political questions” in the United States).

The following naturalist model therefore incorporates litigant-to-court feedback. It also includes the positivist litigant-to-legislature feedback (which may consist not only of “votes” in an election, but also other information about the litigant that the legislature takes into account before passing laws). Finally, it includes court-to-court feedback, an element that tends to get overlooked in positivist theory. Whenever a court issues an opinion, the opinion becomes relevant for other courts (certainly for other courts in the same legal system, and often for other courts not in the same legal system, such as citations in American judicial opinions of the decisions of English courts). When one court issues an opinion, a second court tends to respect it; the second court’s opinion, in turn, may further modify the law in the eyes of the first court when it is presented with a similar case in the future. The naturalist model, therefore, depicts a great many courts acting in parallel; a court in New York is influenced by a court in California and vice versa, and the influence might even be stronger than that of the legislature upon the court (e.g., a federal statute is interpreted one way by a federal court in California, and in turn the California interpretation influences the
New York federal court in a subsequent case to adopt the California reading of the statute and not necessarily what the statute seemed to mean prior to the California decision). Under positivist theory, of course, any court simply interprets the statute so as to give effect to legislative intent, and other judicial decisions are irrelevant. However, under the naturalist theory, other judicial decisions are relevant, not only for providing research tested in the crucible of litigation as to the legislative intent, but also because such decisions were authoritative and thus are presently entitled to a certain amount of weight qua decisions.

A primitive “black box” naturalist model of the legal system might look as follows:

![Diagram](image)

The various subsystems surrounding the black box are connected to the black box by input and output communication lines. The legislature-computer and the litigant-computer are on the left side of the box. This has no substantive significance, but serves to remind us that these subsystems tend to initiate legal action (of course, plaintiffs and not defendants as far as the litigant-computer is concerned), whereas courts, on the right hand side of the box, tend to be passive. The subsystems of executive and administrative agency are included here for completeness; we can dispense with these subsystems in the subsequent discussion. The diagram could show many courts; two are shown simply to keep the model from being cumbersome.

Let us now consider what the internal wiring of the black box might be. In order to keep the diagram as simple as possible, only two courts are shown, and the executive and agency subsystems are omitted. However, the model is generalizable (see Appendix). It might be called an “output-output” model, as contrasted with the “output-input” positivist model where the output from one subsystem exclusively constituted the input for another subsystem. Only in very recent cybernetic theory have output-output models been the subject of preliminary consideration.27

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27 The author is indebted to Professor Paul Smoker, University of Lancaster, England, for help in constructing the model in the text and in the Appendix. For a path-breaking technical discussion of systemic linkages, see Mesarovic, The Control of Multivariable Systems (1960).
This naturalist model might remind the reader of Barry Commoner's observation about the natural world: everything is connected to everything else.\textsuperscript{28} Of course, this is not literally true of the legal-system model, since it omits many non-authoritative institutions as well as omitting areas of social concern that are not legal (e.g., science, the arts). However, within the naturalist legal model, all subsystems are connected to each other both by output-input and output-output communication lines. Let us briefly examine what some of these connections represent.

Taking first the legislature, we see that it may get feedback from itself (a previously enacted statute will affect the form of wording and some of the considerations going into the content of any subsequent statute—note how legislative enactments over time get more complex and sophisticated), from the courts (judicial decisions construing statutes), and from litigants (both through the electoral process and by way of communication of litigant compliance with legislation). Second, a litigant gets feedback from the legislature (statutes) and from the courts (decisions). Third, the court gets feedback from other courts (other judicial decisions), from litigants (initiation of cases and compliance with decisions), and from the legislature (statutes, both substantive and jurisdictional).

Next, we can expect that where there is feedback, there is anticipation of avoiding negative feedback. A legislature, for instance, will tend to avoid passing legislation that will be misconstrued by or avoided by a court. More than that, legislatures increasingly adjust to the way courts construe their legislation. For example, a legislative committee drafting a proposed bill may be divided on whether or not to include a certain sentence or paragraph in the draft. Agreement may be reached on a highly ambiguous version of the idea, so that the proponents at least

\textsuperscript{28} Commoner, The Closing Circle (1971).
get some "statutory language" that they want and the opponents, while not getting rid of the sentence entirely, have at least rendered it ambiguous. Next, both sides may try to get included in the legislative history their own versions of what the language means, either by making speeches to that effect in committee or including memoranda of their own into the record. When the bill comes to the floor of the legislature, similar speeches might be made on both sides of the matter, speeches designed to affect subsequent judicial interpretation more than to affect the present debate on whether the legislature should pass the bill. Later, when a court is called upon to interpret the legislation, the court will find it extremely difficult to determine what the "intent" of the legislature was on the substance of the bill as opposed to the "intent" of both sides to pad the legislative history in their own favor. Adding to the complexity would be the problem presented by a legislative proponent of the bill who argued strenuously for the original clear meaning of the sentence but eventually voted against the bill because the sentence had been rendered ambiguous; is his conception of the interpretation of the sentence part of the legislative history or has he excluded himself because of his eventual negative vote? A mirror-image of the same problem is presented by one who wanted the sentence deleted but voted for the bill because it contained the ambiguous version. These difficulties arise in large part because of anticipatory feedback: legislators know that courts will later "construe" their enactments according to a later-determined version of their "intent," and hence, a premium is placed upon shaping the unfolding legislative history to reveal a particular legislator's version of what he wants the entire legislative "intent" to appear to be. From the later viewpoint of the court, a complex problem in statutory construction is indeed presented, but at least the naturalist model indicates the structure upon which such problems may be predicated. In contrast, the positivist model with or without notions of "core" and "penumbra" can hardly be helpful in such convoluted situations.28a

A judge's anticipation of feedback is no less complex in any given case; rather, courts or legal scholars rarely take the trouble to articulate all the anticipated factors. Any complete listing for any given judicial decision would have to include, among many possible anticipatory feedbacks, the following:

1. Whether the parties will perceive the decision as "fair" in the sense that neither will strenuously object or commit a violent act of rejection;

2. Whether the decision will be reversed on appeal;

28a A recent attempt to go beyond the positivist notions of "core" and "penumbra" in interpreting statutes but keeping the interpretation still roughly positivistic is Dworkin, "Hard Cases," 88 Harv. L. Rev. 1057 (1975). Dworkin argues that we should have recourse to the kinds of institutions that enact the legislation and their basic purposes (which he claims constitute a kind of "rights" as opposed to policy). Even so, Dworkin's supplement to positivism does not deal with the sort of example in the text where the institutional arrangement itself allows for legislative trade-offs that result in deliberate ambiguity coupled with a premium placed upon padding the legislative record.
(3) Whether the decision will strike other courts, or other judges in
the same circuit, as an unjust lead from precedent or a trouble-
making decision in other respects;

(4) Whether the decision will tend to stave off future litigation;

(5) Whether the decision is sufficiently clear so that it will not in-
volve protracted hearings after it is handed down;

(6) Whether the legislature might get so incensed about the decision
as to restrict the future jurisdiction of the court or cut back on the
judge’s salary or take other punitive steps.\footnote{An important recent article lists additional factors. See Greenawalt, “Discretion and Judicial Decision: The Elusive Quest for the Fetters that Bind Judges”, 75 Colum. L. Rev. 359, 388-398 (1975).}

Similar instances of anticipatory feedback occur at the litigant’s level. An obvious example is the way that a lawyer tailors his client’s brief to appeal to the court’s perceptions of its own role as perceived in turn by the lawyer. I argued a case recently in the United States Court of Appeals for the Seventh Circuit that illustrated for me this problem of anticipated feedback.\footnote{United States v. Baranski, 484 F.2d 556 (7th Cir., Aug. 29, 1973) (Civ. No. 72-1345).} I argued that the statute under which my clients were convicted was unconstitutional on its face. In its questions, however, the court made it plain to me it was extremely uneasy about reversing the conviction because the case, involving the pouring of blood on Selective Service files, had some notoriety in the press, and the court obviously did not want the public to think that people who destroyed government property should get off scot free. I recall thinking that to me this was no different from any criminal case where a conviction was reversed due to unconstitutionality of a statute or of police procedures, but the court obviously was more concerned about letting my clients go free for a constitutional reason than it would be in an ordinary (murder?) criminal case. The dilemma was resolved in the court’s opinion, which started by saying that the defendants’ invasion of a draft office and the destruction of its records are intolerable and inexcusable in a civilized society, but their right of constitutional protection are the same as every other individual’s and therefore their conviction under an unconstitutional statute cannot stand. Thus the court resolved its dilemma by placing its precatory language at the outset of its opinion. Parenthetically, the right of the court to issue an opinion probably made the result come out as it did. If the case happened to come up in a legal system where an appellate court simply affirms or reverses with no written opinion and no oral indication of reason, I think that the result might very well have been the opposite.

A. The Relation of the Positivist Model to the Naturalist Model

Before looking more closely at what the naturalist model of the legal system purports to describe, let us consider its relation to the previously discussed positivist model. The relation of the two models is not as
antithetical as recent jurisprudential theory might lead us to believe. In a review of one of Fuller’s books, Hart recently said “our starting points and interest in jurisprudence are so different” that he and Fuller “are fated never to understand each other’s works.” There seems to be considerable sentiment among scholars that positivism and “natural law” are two totally different ways of looking at reality. Yet insofar as the two models presented in this essay are concerned, positivism appears to be simply a special case of, or a limiting example of, the naturalist model. By omitting several of the lines and one of the subsystems in the previous diagram, the naturalist model reduces to:

![Diagram]

Clearly this is the same diagram as the positivist model except for the placement of the subsystems (a placement that has no substantive significance). The internal wiring represents one of the paths that are possible under the naturalist model. In short, the positivist model is one possible arrangement of the naturalist model. In this sense, positivism is a reductionist position within naturalism.

The relationship suggested by the diagrams appears to be in accordance with a verbal analysis of the two jurisprudential systems. At any given point in time, a legislature might pass a statute that seems very clear and uncontroversial in its application to a given case. For example, someone is arrested for driving a car in excess of the legislatively imposed speed limit; he admits that he was speeding, but pleads not guilty; and a court finds him guilty. Or, we could leave the judicial subsystem out of it (as Bentham would have preferred) and simply take the numerous cases where drivers do not exceed the speed limit. Here their behavior is shaped directly by statute, and there is no question of its applicability. In these cases, the positivist internal wiring works without a hitch. (Of course, someone might be speeding under a claim of

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privilege or for other justifiable reasons, and then we would be thrown back upon the naturalist model.)

Clearly whenever the legal system works in such a direct manner, we can say that the positivist conception applies as to those cases. It may very well be that the positivist internal wiring of the legal system applies in the vast majority of cases: all those where the law is complied with, which must occur in an immeasurable number of times and places even in a single day. However, important as all these cases are, when we study how laws are made and modified we tend to focus on the cases that are exceptional because they either test the system or contribute to a change in the system. We focus on cases where reasonable people disagree as to the proper outcome, and where legislatures and courts strive to maximize systemic stability by issuing statutes and decisions that reduce as much as possible the friction resulting from these “gray area” controversies. Thus, although positivist theory can account for the vast majority of cases which happen to be uncontroversial, naturalist theory concerns itself with the more contested controversies. Most importantly of all, as Fuller has shown in his refutation of Hart’s “core” theory, the naturalist model must be used in making the decision whether a given case falls into the uncontroversial (and hence positivistic) category or whether an argument exists that can move it into some other part of the internal wiring of the naturalist model.

B. Control of Real-World Variety

This last point illustrates a further fundamental characteristic of the naturalist model—that it is a self-controlled system for coping with real-world variety. For it is the naturalist legal system itself that decides what internal wiring a given case will follow. If the case is a simple highway speed-limit situation, the internal wiring might be nothing more than legislature to citizen, with feedback at the next election. But it is the system itself that decides that such a case is simple. Thus, a litigant, as part of the system, decides not to contest his arrest for speeding; his decision reflects the system’s way of assigning the legislature-to-litigant path to his case. Or, a litigant contests it, but the court simply finds him guilty; again, the wiring is kept simple. On the other hand, the litigant, or the court sua sponte, might raise the question of a privilege for exceeding the speed limit. Then other internal wiring comes into play: considerations of legislative intent, the decisions of other courts, the potential feedback from policemen assigned to apply the speed-limit law to other citizens who might claim a similar privilege, and so forth. But it is the system as a whole that makes the decision as to the internal wiring for any given case, and thus we can say that the naturalist system controls real-world variety (i.e., cases and litigants) through internally decided-upon procedures.

In contrast, positivist theory since Hobbes, Bentham and Austin has gone to considerable pains to specify systemic procedures in advance. From a positivist standpoint, all the procedures and all the necessary substantive law should be spelled out so that the legal system simply follows these verbal commands in coping with real-world variety. This
insistence by positivist theory has richly enhanced our jurisprudential heritage. Clarity in draftsmanship, civil codes, codified procedural rules, and explicit constitutions are part of the beneficial effects of this insistence on a priori specification. On the other hand, some of positivism's by-products may have been harmful. Certain recent constitutions appear to be so complex that they are universally misunderstood and hence are manipulated by those in power; the constitution of the Republic of Korea is an example. Secondly, civil codes in many countries have become overly cumbersome, and the quality of the law in these countries seems to have fallen behind society's progress (as contrasted with the historical instance when the codes were introduced—at that time they were usually quite progressive). Third, as Fuller points out, there seems to be in many civil-code countries a subtle deterioration in legal study and legal reasoning, as if the civil code is used to call a halt to thinking; certainly, a code tends to discourage (though certainly not eliminate) the comparison of judicial precedents.\footnote{31} Fourth, the positivist belief that a legal system can be specified tends to encourage changing the specifications to suit the prevailing political philosophy. The instructive Hart-Fuller debate on the Nazi legal regime\footnote{32} provides an insight into a positivist-thinking political philosophy that underwent considerable modification of legal procedures to suit Hitler's mood.

Whatever the benefits or shortcomings of positivism's desire to specify systemic procedures, we must note once again that theoretically such a priori specification is impossible. Real-world variety outstrips the ability of language to contain it. Constitutions that are positivist-inspired tend to become bulkier; more "organic laws" are continually passed in order to take account of past variety and congeal it systemically for the future; statutory exceptions are passed upon exceptions. At some point the system snaps (i.e., revolution), or a reform movement succeeds in wiping out most of the previous laws and constitutional articles and substituting a simpler system (which in turn, then, grows like Topsy). With increasing literacy and education of the public in all nations, positivist patch-jobs on complex constitutions and statutes are doomed to increasing frustration.

This is not to say that the positivist approach is undesirable. Indeed, it might be extremely desirable to fashion a legal system that is completely specified; everyone should know where he stands, and the capacity for "surprise" would be reduced. But desirability is not the same as possibility. The desire is unrealistic. The infinitely various cases that may arise before a court, to take one subsystemic example, require that the court itself be the judge of its own jurisdiction. There is simply not enough time or resources in the world to control externally all the judgments that courts must make concerning their own jurisdiction. As a result, if we are to understand the legal system that we in fact have, we must forego the desire to specify all its parameters in advance. Instead of chasing that illusory goal, our understanding of the legal system might be enhanced by studying the character and behavior of the sub-systems so that we might predict how they will tend to control them-

\footnote{31} Fuller, Anatomy of the Law 166-67 (1968).
\footnote{32} Ops. cit. supra nn. 17, 22.
selves. Here again the example of a court might be the best illustration. A Justice of the Peace court is set up. One could hardly devise a statute that would take into account, for all time in the future, all the cases that the Justice of the Peace should handle and all the ones he should reject. No matter how carefully his jurisdictional mandate is specified, there will be cases that reasonably might or might not fall within his jurisdiction. Thus, instead of attempting to specify his jurisdiction exactly, legislatures will tend to establish his court on a rougher basis, leaving it to him (plus the courts of appeal above him) to work out jurisdiction over time. The reason that a legislature can delegate self-defining jurisdiction to the Justice the Peace is that, as part of a system, the Justice will tend to behave in a manner consistent with the rough functional allocation of powers given to him. His general behavior is predictable because he is, after all, part of the legal system and is aware of his role within the system. Thus no great risk is taken by the legislature in defining his jurisdiction in rough terms, and by the same token, lawyers may predict with reasonable accuracy what kinds of cases fall within the jurisdiction of the Justice of the Peace. This latter predictability tends to reinforce, via feedback, the system’s overall allocation of jurisdiction to the Justice of the Peace. If for example we knew of a local justice of the peace who would rule that an anti-trust action between Telex and I.B.M. would fall within his jurisdiction, nevertheless lawyers for Telex or I.B.M. would probably never think of filing a billion dollar lawsuit in the home-office of a rural J.P. Generally, courts behave as lawyers and legislatures expect them to behave, and their behavior reinforces the validity of the expectations of their behavior—even with respect to self-regulated jurisdictional decisions.

Putting the nature of the positivist and naturalist legal systems on an even higher level of generalization, we might say that under positivism a “legal system” can be defined as an attempt to control entities which are deemed to be lacking in self-control. Thus a positivist view of a legal system is something that we invent (by specification) to control people who would, absent the legal system, be unable to control themselves. Hobbes, for instance, believed that the Leviathan was needed to control people who otherwise would be in a natural state of war against each other. Under this view of a legal system, the purpose of positivism is to specify a system to account for total control, to make certain that the control devices are operative, and to promote as an ultimate aim the security of society.

In contrast, naturalist theory would not call for any a priori designation of entities that must be controlled or the installation of machinery to effectuate control. The Hobbesian anarchic state of nature has no counterpart in naturalist theory (despite, we might say Rousseau’s attempt); instead, naturalism views the question of the nature of man apart from a legal system as a purely theoretical question which is impossible to answer. Naturalism considers society and legal system (however rudimentary it might be or appear to be in certain cases) as inseparable. Accepting the legal system as given, naturalism recognizes that it has an inherent prerogative which is control, and goes on to study how the control is effectuated.
Under naturalist theory, a society’s legal system controls itself. In cybernetic terms, a legal system would have to be classified as a “big” system whose components proliferate variety. This real-world variety, which cannot be handled by a smaller control system (as in the positivist model), can only be regulated by the system itself (or what Stafford Beer calls the system’s “identical permutation”). Such a conclusion follows from Ashby’s law of requisite variety, mentioned previously. The system cannot be controlled from outside (e.g., by constantly amending the constitution) but rather is so organized that each person working within it—legislators, judges, clerks, lawyers, litigants, policemen, bureaucrats—does of his own accord what is necessary for the success of the system. If Benthamite positivism resulted in underlining the importance of the skill of legislative craftsmanship, naturalism dictates that our control of the legal system is a function of how well we understand it. Such understanding is not only a matter of knowing laws and legal arguments, but is also an interdisciplinary task of understanding the systemic constraints upon actors and institutions within the system.

IV. Conclusion

I have attempted in this paper to reconcile, using cybernetic modelling, two competing schools of jurisprudence that have appeared to some observers to be irreconcilable. My proposed solution, however, does not leave them on an equal footing. The positivist position would seem to be only one special, limiting case of natural law approach. Positivism is a theory that constricts, almost to the vanishing point, the feedback that I have argued is an essential element in making law work. Of course, “feedback” is a most elusive concept to pin down, and in the biological and social sciences it has only come to be accepted as a major organizing principle as cybernetic tools were developed to account for it. Like other paradigms in the history of science, “feedback” became noticed and accepted only when a language was invented to describe it.

A closer attention to the dynamics of the natural-law description of legal systems may lead to important new insights into legal phenomena. Some of the fascinating questions that lie ahead are: to what extent are we, as citizens, “creators” of law? Are civil registers engaged in a process of substantive law-creation by their acts of civil resistance and disobedience? Is the law that they are creating applicable to them in the very case in which they are creating it? Does law “work” because it has an in-built process of correction and modification? Should a judge, then, accept an argument that a party’s own resistance to a rule should count in determining the content of the rule? What do we mean by “resistance”? Can it include, for example, hiring an expensive attorney who will argue the case with great thoroughness and at length? Some of these are normative and some of these are empirical questions. They may have a fundamental impact upon legal reasoning and analysis. We are only beginning to sense that they are real questions which have been inherent in legal systems all along.

Appendix*

The naturalist model of the legal system given in the text can be generalized as follows:

This is the same diagram as given in the text with the replacement of symbols for institutions and with the addition of forward controllers (P) and backward controllers (C). These controllers, in a computer linkage, could regulate the intensity of the information transmitted; they are not necessary for the theory of the model as presented in the text.

Based on this diagram, the equations relating X's and Y's are as follows:

\[ Y_1 = P_{11} X_1 + P_{12} X_2 \]
\[ Y_2 = P_{21} X_1 + P_{22} X_2 \]

Or as a general result:

\[ Y_i = P_{i1} X_1 + P_{ij} X_j \]

Of course, with the addition of more institutions (X's and Y's) the diagram would become extremely complicated, but the general formulae would remain the same.

*This Appendix is intended as a supplement to the text and states a more general case.