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THE COSTS OF CRIME

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primary resources which are more valuable to it for the purpose of making steel than they would be to other purchasers who would use them differently. In such a case, the market mechanism allocates an "efficient" amount of each primary resource to the production of steel, and the plant, facing a market for its own output which determines the value of the primary resources to it, produces and sells an "efficient" amount of steel.

But there may be primary resources for which no markets exist. Suppose the production of steel necessarily entails filling the air around the plant with thick smoke. The plant's neighbors must breathe this smoke, which imposes a real cost upon them in the form of damage to their lungs and respiratory systems and which to this extent makes their good health a primary resource essential to the production of steel. Where the law initially awards ownership of this primary resource ("the good health of the plant's neighbors") to those whose lungs are damaged, and where free bargaining between the plant and its neighbors can be relied upon to reveal accurately the relative values of this resource to the parties involved, the market mechanism will effectively allocate "good health" just as it did the other primary inputs to steel production. Thus, the plant might compensate those of its employees who live near the plant by adjusting the wage rate to a mutually acceptable value which accounts for the costs imposed by the smoke. But as we shall argue in detail in the analogous case of criminal activity, such "internalization" of costs through the market mechanism may not be possible. Where the number of cost bearers is very great, and each bears a different, individualized cost as a result of breathing smoke, the practical difficulties involved in organizing these individually efficient market exchanges are likely to be insuperable. Without an alternative institutional structure designed to force the plant to consider the full resource costs of steel production given the market's failure to do so, the damages suffered by the plant's neighbors, their contribution to the production of steel, will remain "external costs." In a sense, the plant, while paying in full for

its other primary resources, will have "stolen" the good health of its neighbors, and it will produce an inefficiently large output of steel (which it sells at an inefficiently low price) as a result of its free use of a costly resource.

It is important to note that this posing of the externality problem does not in general contemplate the unconditional deterrence of cost-imposing activity. Given that the generation of smoke is a necessary concomitant of steel production, the costs imposed by the pollution can be totally eliminated only by shutting down the steel plant and reducing its output to zero. But if the value of the plant's output as reflected in the market for steel is greater than the value to their initial owners of all the primary resources used in the production of that output, including the good health of the plant's neighbors, a net social cost is incurred in closing the plant. Ceasing steel production would avoid the expenditure of any of the primary resources, but the community would also be denied the steel which, by hypothesis, it values even more highly than these resource costs. A systemically efficient allocation, one which directed all resources to their most valuable use, would require the community's tolerance of an "efficient" level of aggregate pollution cost; where the plant is able to pay the full resource cost of its neighbors' good health and still earn a profit from the sale of its steel, efficient allocation demands that it be allowed (or encouraged) to do so.

Concern with systemic efficiency in this sense leads one to ask how this efficient level of aggregate cost imposition might be achieved in cases where the market solution is unavailable. For many years, economists have argued that, in principle, efficient allocation could be organized despite the failure of the market mechanism by having the government assess the sum total of the pollution costs borne by the plant's neighbors and imposing this social cost upon the steel plant in the form of a tax. This institutional arrangement induces efficient outputs of both steel and smoke by forcing the plant to pay the full costs of all the primary resources used in the production of steel, a result which generally obtains whether or not the tax revenues

the identities of those involved, is generally impacted in individuals who have no opportunity or incentive to reveal the extent of the external effects upon them. But systems of criminal justice (as well as tort liability) can be seen as imperfect but operationally market-like structures which encompass mechanisms to extract this information in a form which will allow the identification and completion of efficient transactions on a case-by-case basis. Our concerns here are the properties of these institutional structures and the variations in form which result from differences in the nature of the external effects which give rise to them. The specifics of organization in the legal process, we argue, can be directly related to the human characteristics and capacities of individual decision-makers and the problems they face in acquiring necessary information in various exchange environments.

The institutional approach thus entails a basic shift in emphasis from the systemic efficiency properties of abstract allocational mechanisms to the act of exchange itself in real environments characterized by the imperfection or unavailability of essential information. Moreover, the great inherent difficulty of gathering sufficient cost information for efficient central planning in the criminal process requires reconsideration of fundamental analytical postulates. The initial postulation of a centrally administered objective of efficient resource allocation in the aggregate appears, in this light, to be a highly tenuous empirical proposition. In place of this dubious systemic teleology, we assume an individual human propensity toward beneficial exchange at many levels of behavior, including those within the purview of the criminal process. Given conditions of perfect information, individuals seeking to complete efficient criminal transactions in markets will, as Adam Smith suggested, efficiently allocate resources to criminal activity in the aggregate (just as to other uses) despite the absence of centralized direction toward that end. Where information is difficult or impossible for individuals to obtain, markets and other institutional forms can be seen as alternative and necessarily imperfect modes of organizing these exchanges, and the informational problems which confront human transactors at the margin become the key to understanding the legal institutions which have evolved in response to them.[2] A developmental perspective emerges; the evolution of observed legal institutions can be rationalized in terms of their relative efficacy in facilitating individually efficient criminal transactions given the practical obstacles to market organization and the particular quality of the costs associated with crime.

Focusing on markets which fail rather than on those which work well naturally draws attention to external effects which are very difficult to quantify and unlikely to manifest themselves as disturbances in market values. But to say that such effects are hard to measure is not to say that they do not exist. In the context of crime, it is clear that real costs of this kind are generated in the form of widespread social outrage and moral opprobrium by various types of illegal behavior. The magnitude of these costs, moreover, appears quite variable and highly sensitive to the specific details of each criminal act. The identities of victim and offender and the particular circumstances which surround a given offense are, in practice, principal determinants of the "gravity" or "seriousness" of the offense and thus of the punishment to be imposed upon the offender. Here, we deem these effects "moral costs"[3] and argue that the continuing effort to assign values to them in individual cases and to internalize them by imposing roughly equivalent "taxes" upon offenders has played a major role in shaping existing organizational forms in the criminal process. The difficulty of this endeavor is the motivating theme of the analysis. In the sections which follow, we do not propose a means by which an independent observer might measure or predict the moral costs associated with a given criminal offense. Rather, we offer a new approach, an analysis of the way in which the institutions of the criminal process themselves attempt to reckon these costs and the effects of changes in the availability of information on the organizational form of these institutions.

direct victims.[6] In either case, however, some conceptual object of exchange must be defined if the problems of organizing transactions in these external effects are to be understood. Following Calabresi and Melamed (1972), we define an "entitlement" in the context of crimes and torts as a collectively granted right either to impose costs in a given way, or, contrarily, to be free of like costs imposed by the acts of others. Entitlements may be protected by "property rule," which permits transfer of the entitlement only if its buyer and seller are able to negotiate a mutually acceptable price, or by "liability rule," in which case an individual may acquire another's entitlement whenever he is willing to pay an objectively determined value for it.

Now the principal problem facing any institutional arrangement seeking to facilitate efficient transactions in external effects is the acquisition and dispersion of cost information sufficient for potential offenders to distinguish efficient from inefficient cost imposition ex ante at the margin. In general, the market alternative is characterized by entitlements placed in private individuals and protected by property rule, and under competitive conditions, the advantages of a decentralized price system as a means of extracting this information are well known (Hayek, 1945). Coase (1960) has shown that if entitlement transfer is sufficiently costless, free exchange will ensure an efficient level of cost-imposing activity regardless of the initial placement of entitlements; in this case, the latter question is one of distributional equity alone. But the individualized nature of the costs imposed by crimes and torts generally precludes this result. Since these costs vary with the particulars of the offense, a "small numbers" problem is created; every exchange situation is a bilateral monopoly in which the absence of equilibrating market forces provides opportunities for all parties to conceal their preferences in bargaining. In the criminal case, moreover, the large number of dispersed moral cost bearers suggests high coordination and information-gathering costs even where preferences are truthfully revealed. While these costly transactions are obviated by

assigning entitlements initially to those who value them most highly, the problem of making this determination ex ante in the absence of market valuation remains unsolved.

The failure of markets to extract this cost information in either case requires the development of alternative institutional structures designed to evaluate the costs imposed by various activities and thus to specify punishment prices sufficient to encourage only the efficient transfer of civil or criminal entitlements. This is the role of the legal process, and its "objectification" of costs transforms the protection of entitlements from property rule to liability rule and thus introduces an inevitable possibility of error in the valuation of costs. But while in both contexts the state provides a mechanism of price exaction which mediates between cost imposer and cost bearer by liability rule, the widely dispersed moral costs of crime pose informational problems in establishing the individualized price of entitlements not encountered in the civil setting. The qualitative distinction between crimes and torts, moreover, motivates striking variations in the organizational form of the Anglo-American legal process and the initial placement of entitlements in the two cases. On the civil side, entitlements are privately placed, with individual cost bearers retaining the right to be compensated directly by offenders for those costs they can demonstrate objectively in court. The economic character of the costs involved and their relatively narrow incidence enable the civil process to rely upon this arrangement as a means of generating dependable information as to the extent of cost imposed by tortious activity. Cost specification is facilitated by the possibility of resort to market values, and the small number of direct victims ensures that the full extent of cost imposed can be ascertained with a minimum of litigation. Where all the costs of the offender's activity can be accounted for in this way, the achievement of an efficient level of cost imposition is impeded only by the costs inherent in organizing the cause of action and bringing suit.

In general, however, no such right to direct compensation by cost imposers exists for victims of crime. Instead, criminal

This rich interrelationship bears closer scrutiny. Consider two situations in which every member of a large group of persons has been consensually exposed to a probability of .005 that he will be killed within a certain period. In the first case, the risk is created by the construction of a needed bridge, a dangerous job which claims the lives of workers with statistical regularity; consent is obtained through adjustment in the wage rate. The second risk is created by a perverse individual who pays 200 persons to take part voluntarily in a lottery in which the "winner" will be put to death. While the indirect economic and moral costs imposed by these activities may plausibly be perceived as roughly equal, the substantial indirect economic benefits associated with the bridge project are clearly absent from the lottery. Assuming market exchange to be infeasible, a legislative assessment that the bridge project's benefits exceed its costs suggests the initial placement of cost-imposing entitlements in the construction firm. In this way, a host of efficient but costly transactions between the firm and those who bear the largely moral costs of the risk creation is obviated. Similarly, the net social cost associated with the lottery suggests that it be made illegal by placing the relevant entitlements in the state. Both these results are in fact consistent with American law regarding homicide (Harvard Law Review, 1968).

But the presumption of illegality in cases of net social cost may be overcome by costs involved in the process of price exaction itself. The identification, apprehension, conviction, and punishment of offenders clearly entail substantial economic cost, and moral costs may result as well whenever price exaction procedures are perceived by the citizenry to be "unfair" or "improper." These moral costs are incurred, for instance, when rights of a defendant embodied in the Constitution or widely shared communal values are endangered or when inadequate safeguards exist to protect against false arrest or conviction. Where the sum of these costs exceeds the net social cost of the activity, efficiency requires either that the activity be made legal or that laws against it be left unenforced.

Examples of this phenomenon are seen in the sporadic enforcement of traffic laws, petty misdemeanors, and marijuana laws, and one interesting institutional response to it has been the withholding of income taxes from wages.

The informational difficulties involved in these initial decisions are apparent, and similar problems inhere in the fixing of punishment prices for activities designed as criminal. While a penalty scheme which equated punishment price and costs imposed in each case would clearly facilitate efficient transfers of entitlements at the margin, the information necessary for such an undertaking is obviously beyond legislative reach. The most common American response has been legislative proscription of broadly defined offenses accompanied by variable punishment prices statutorily bounded above and below. Concurrently, responsibility for the case-by-case specification of costs and penalties ex post passes to the judicial mechanism with an implicit mandate to "individualize" the application of criminal sanctions in the least costly way possible. Through budgetary constraints on its officers and the monitoring of the moral costs of various procedures by appellate courts, the judicial process itself develops fact-finding procedures and modes of conviction (such as plea bargaining) which elicit the requisite information at relatively low cost (Adelstein, 1978).

The key to implementation of this mandate is the pervasive discretion vested in judicial officers to modify legislative standards where they believe circumstances warrant. Police officers may focus their efforts on certain types of activities to the exclusion of others or enforce the law selectively within offense categories, while prosecutors may frame charges as they see fit or elect not to pursue a given case at all.[8] At trial, the jury may refuse to convict even where the facts show a clear violation of the law and, of course, the trial judge has wide latitude in fixing sentence upon conviction. This discretion, moreover, plays an important informational role in legal dynamics, for judicial action consistently at variance with legislative standards is a clear signal to legislators that their assessments of cost in various situations may be in error.

along the continuum in this direction, the "organizational failure" of the legal process becomes ever more pronounced and its institutions less able to perform the function of encouraging only efficient transfers of entitlements.

Two distinct organizational arrangements which remove much of the sentencing discretion granted judicial officers can be seen as institutional responses to this informational paradox, each best suited to a very different kind of exchange environment. The first, legislative drafting of a schedule of uniform, mandatory penalties for various offense categories, is a form of systemic planning which sharply reduces the economic cost of fixing punishment prices but which entails a substantial risk of inaccurate cost specification in individual cases.

An analysis by Diamond (1973) of the general problem of uniform corrective pricing in the presence of external effects illuminates the informational aspects of this strategy. Where individualized pricing is not possible, Diamond shows that aggregate efficiency can also be achieved by exacting a uniform punishment price from all offenders which represents a weighted average of the costs imposed by each offender's activity, the weights being the individual deterrent effects of increments in punishment. This result suggests that the problem of gathering information sufficient for the ex ante specification of these uniform punishment prices is a most formidable one. First, legislators must be able to predict the economic and moral cost which would be imposed by each potential offender in a given offense category; in contrast, the two-stage procedure requires only the ex ante articulation of these costs in the single case at bar. Further, the legislature must estimate the marginal deterrent effect of increased punishment upon every potential offender, information not required at all for individualized sentencing.

But where this information *is* available to the legislators, uniform penalty schedules and the general withdrawal of discretion from judicial officers may promote efficient levels of criminal activity at substantially less economic cost than the two-stage approach. In practice, exchange environments for

which this institutional structure is best suited might be characterized in two ways. Initially, the social cost, particularly the moral cost, imposed by each offense within a given category must be roughly equal and within the scope of ex ante estimation. These costs must thus be relatively insensitive to the peculiar circumstances of the offense and the identities of the direct parties to it. Secondly, criminal punishment must have a deterrent effect upon potential offenders which is roughly equal for every individual within easily defined classes of offenders. Generally, both these criteria seem more accurately to describe crimes against property (such as larceny and burglary) and "white collar" crimes (embezzlement or fraud) than crimes against the person, such as assault, rape, or homicide. Offenders in the former cases are usually motivated by pecuniary gain and are often "professional" criminals, more likely to weigh rationally the risks of the crime. At the same time, the individual characteristics of members of this group seem less likely to be significant determinants of the moral cost associated with their acts, perhaps justifying the assumption of equal social cost for statutorily identical offenses.

But even in these cases, judicial officers often strongly resist legislative attempts to limit their charging and sentencing discretion in this way. Where mandatory penalties are attached to crimes of general definition, the judicial mechanism adapts and continues the effort toward individualization; the usual result is an increase in plea bargaining as prosecutors reformulate charges against specific defendants to avoid systemic sentencing mandates (Newman, 1966: 53-56, 112-114). Moreover, crimes against the person, particularly violent crimes, are more often the product of passion and circumstance, elements which suggest wide variance from case to case and thus appear to call for individualized treatment at the judicial stage. An alternative response to the informational paradox, legislative establishment of clearly defined sentencing standards to be applied ex post by the judicial process to individual cases, addresses these problems by retaining more of the discretion traditionally (and perhaps unavoidably)

procedural safeguards afforded the defendent by the criminal process. See Prosser and Wade (1971) and sources cited therein.

7. Note that this solution fails to deal with the often large economic costs visited upon direct victims. The perceived inequity associated with this failure has prompted many jurisdictions to institute administrative arrrangements designed to ameliorate these costs. Generally, direct victims are given the opportunity to establish the objective economic cost they have borne, and those claims approved by a compensation board are than paid by the state. In this way, the state acts as insurer of these costs and, to the extent that this encourages potential direct victims not to undertake those private precautions to avoid the costs of crime which they would otherwise, an element of "moral hazard" is created. An interesting contrast is observed in the French criminal process, which allows direct victims to become third parties in criminal litigation itself at their own expense, entitled to introduce evidence independently of the public prosecutor on the issues of both guilt and damages. Should the defendant be convicted, he may face both a criminal punishment and an award of compensatory damages to the direct victim. See, generally, Vouin (1970).

8. Compare the "legality principle" of European systems, which compels the prosecutor to pursue all cases which come to its attention.

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In the volume from which this is taken, the next chapter is a very strong critique of this essay by Mario Rizzo!