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CRIMINAL PROCEDURE

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Abstract

This chapter discusses the economic interpretation of pre-trial settlement and in particular of the 'plea-bargain', a procedural instrument aiming at the conservation of enforcement resources and providing a screening device *vis-à-vis* the guilt of possible wrongdoers. In this respect, the paper suggests an institutional comparison with continental legal systems and an analysis of those procedural instruments employed there. Apart from the economic interpretation of pre-trial settlement, the paper presents a more encompassing institutional approach to the criminal procedure covering, inter alia, an economically based interpretation of judicial behavior, evidence, appeals, and also of procedural issues of justice.

JEL classification: K40, K42

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1. Introduction

Criminal procedure is generally understood as that body of law governing the legal treatment of a criminal deed from the offence until an unappealable decision (acquittal or conviction). The thus defined rules describe the process, by which the guilt of a possible wrongdoer may be legitimately established and a criminal sanction attributed. These rules encompass, inter alia, the determination of factual evidence (the facts of the case in the light of a possible responsibility of a wrongdoer), the proper interpretation of the substantive law applicable to this case, and the sentencing decision, which is the determination of the sanction fitting both the crime and the criminal in the light of requirements of deterrence. Since criminal proceedings concern the attribution of a sanction to an alleged wrongdoer, the lawmaker has to cope with two types of errors; namely type one errors, that is to convict the innocent, and type two errors, that is to acquit the guilty. Most of the legal rules concerning due process, evidence, and appeal can be interpreted in the light of this dichotomy, regularly being based in favor of an avoidance of unwarranted convictions.

Boundaries between the 'criminal procedure' and adjacent areas of the criminal law are amorphous: in many legal systems it is substantive, not procedural law that both assigns the right of prosecution, to either the attorney general and/or the infringed individual, and defines requirements of proof. More generally, substantive law defines the elements constituting the crime and thereby what is to be proven (regularly: beyond reasonable doubt) in the criminal proceedings. By her deliberate definition of the crime, the lawmaker, therefore, enjoys considerable discretion in enlarging or reducing the impact and relevance of procedural rules. In this light, one may characterize the Anglo-American law as being more concerned with procedural guaranties than with substantive ones; the latter playing a key role within the continental system (where the principle of *nulla poena sine lege* is of paramount importance).

Whereas the criminal procedure, almost by definition, presupposes an institutionalized process, by which the responsibility of the alleged wrongdoer is established, many ancient legal systems have lacked the concept both of a public enforcement of criminal deeds and of a regular formalized procedure to be followed when sanctioning. Due to the then existing 'technological' infeasibility of properly determining factual truth (the guilt of a wrongdoer), procedural aspects did not reach beyond a few elementary rules: whereas originally many offences were defined such that hardly any determination of factual truth was required ('*Die Tat tötet den Mann*' = 'the deed kills the man'), subsequent - still ancient - procedures followed, in their rules on evidence, the so-called '*gebundene Beweiswürdigung*' ('fixed rules determining evidence'). Further, (criminal) law was originally enforced primarily or even solely by private individuals. Only in subsequent times, criminal procedure turned to an inquisitorial orientation. The type of criminal procedure now predominantly employed is the result of a relatively short history only, commencing with enlightenment and subsequent refinements during the nineteenth century.

2. The Economic Approach to the Criminal Procedure

The law and economics contributions to the analysis of criminal procedure are highly economic in spirit being predominantly written by economists, not lawyers. Most of the literature focuses on the enforcement decisions taken by the prosecuting authority and, in close relation therewith, on the economics of the plea bargaining system prevailing in the US. These contributions apply standard economic maximization exercises to procedural issues, but are less concerned with an evaluation and comparison of existing and possible alternative procedural rules in their potential to accomplish certain policy goals. This lack of a genuinely institutional concern for procedural issues beyond plea bargaining is characteristic for both American and European

contributions with the notable exception of Tullock (1980) who provides a systematic economic treatment of the criminal procedure, covering the investigative part of the procedure, rules of evidence, expertise, and appeal.

Issues also covered in this volume that relate to this chapter are: Civil Procedure: General (7000), Judicial Administration (7100), Settlement (7400), Evidence (7900), the economics of crime and punishment (8000-8600), and the production of legal rules and precedent (9000-9200).

The overview presented in this article covers the focus of the pertinent literature. Therefore, major attention will be attributed to the economics of the plea bargaining system in the US (Section 3). Other issues, among those the role of judges and juries, evidence and appeal, are dealt with in the subsequent part (Section 4) of the chapter.

3. The Law and Economics of the Plea Bargaining System

The economic literature's interest with the criminal procedure is inspired by the basic empirical fact that most criminal cases are not decided in a trial but either dismissed in an early stage or ended by pre-trial settlement. Within this first part of the investigative process, regularly being of inquisitorial nature (see Tullock, 1980, p. 137), a government official (the prosecutor) decides on the pursuit of the case in the light of its 'strength' (primarily in terms of the evidence available) so that the defendant has little opportunity to influence outcomes by investment in defense resources. Prosecutorial decisions and possible pretrial settlements are, however, done 'in the shadow of current court practices' and are, hence, the consequence of (relatively accurate) predictions on the side of the prosecutor as to how courts would decide the case.

General

The plea bargain is the most prominent form of pre-trial settlement: The accused agrees to plead guilty for (a) certain crime(s) in exchange for a penalty that is considerably lower than that to be expected after trial (normally this reduction already stems from the fact that the accused pleads guilty only for a minor offence or for one single offence out of many more charged; say manslaughter instead of murder). The basic institutional feature behind the plea bargaining system is the prosecutor's unlimited legal discretion to acquit a case, to settle it or to bring it to trial (see Landes, 1971; Adelstein, 1978a, 1978b, 1979, 1981b). Whereas the prosecutor is legally unconstrained in his enforcement choices, he is controlled by means of the budget assigned to him. The pertinent literature, therefore, views the prosecutor's decision to enforce the law in a particular case as a maximization activity subject to constraints, namely as one of economizing on resources while aiming, at least in the light

of the classic articles, at the maximum degree of overall deterrence. Whereas the mainstream legal interpretation considers the plea bargain as a necessary evil in an overburdened system of criminal law enforcement, prominent law and economics scholars (Landes, 1971; Adelstein, 1981b, and Easterbrook, 1983) suggest an interpretation of the plea bargain as an institutional device congenial for the task of merging the criminal law's ultimate goal, namely that of being a 'pricing device' for crimes, with the scarcity constraint expressed in the limited prosecutorial budget. Since the plea bargain, in any case, requires the consent of the accused, it can, moreover, be conceived as a voluntary transaction, whereby both sides improve their position *vis-à-vis* the status quo; insofar standard settlement theory, as developed in civil procedure, is applicable. If one perceives the criminal procedure as a market system, see Easterbrook (1983), the plea bargain provides a contractual settlement, whereby the parties agree on the price of the offence. Since, moreover, the probability of a conviction in trial depends on the observable strength of the case and not on factual, but unperceivable innocence, even an innocent defendant may rationally accept such bargain, if she is unlikely to prevail in trial.

The law and economics literature does not only analyze the working properties of the plea bargaining system and the influence of certain factors (for example, severity of the crime) on the likelihood of a bargained settlement, but has also suggested to interpret the plea bargaining system as a screening device that allows for a separation of guilty and innocent individuals. Further, the economic contributions are also concerned with a normative evaluation of the plea bargain and with an assessment of possible avenues of its institutional reform.

Details

Most economic contributions interpret the criminal sanction as the 'punishment price' for the criminal act, reflecting the full social cost imposed by these acts. Following this standard economic approach, the optimal price for the offence is defined as the equivalent to the entire harm generated by the offence (see Landes, 1971; Adelstein, 1981b). Both sides, prosecutor and defendant, therefore, orient themselves in their procedural strategies on expected sentences as the (current) prices for the respective crime. Operating under a resource constraint regarding the enforcement and pursuit of criminal cases, they maximize their utility subject to these constraints that exist in terms of their resources (endowments) available. Whereas either side can influence the probability of conviction by resources invested into the case, the plea bargain allows both sides to economize on these resources: The defendant, on the one hand, needs to invest resources for his defense; ultimately, he will expend resources up to the point where marginal benefits equal marginal costs. The prosecutor, on her turn, seeks to maximize the expected number of convictions

weighted by their respective sentences, again subject to her budget constraint, in particular Landes (1971) and Easterbrook (1983). The prosecutor, therefore, allocates resources to those cases where outcomes in terms of sentences are more responsive to changes in resources invested and to those where the overall sentence is greater. Provided for the said budget constraint, the prosecutor will dismiss 'weak' cases and try to settle cases by plea bargains in order to free resources that he could then shift to cases that are more promising in terms of expected sentences. On this basis, both sides can improve their situation in relation to their expected trial outcome by the settlement of the criminal case outside of courts. Such a settlement is feasible if a certain penalty acceptable to the defendant exceeds the prosecutor's minimum offer; within this broad bargaining range, the relative strength of the parties will decide upon the negotiated sentence.

Consequences

The just described general framework, in which the plea bargain is primarily seen as a conservation of resource problem, allows for some concrete conclusions with respect to the influence on a bargained outcome of the probability of conviction in trial, the severity of the crime, each side's resources and their productivity, the costs of trial and settlement, and ultimately the attitudes toward risk (see Landes, 1971). First, the higher the stakes (expected penalties) in the criminal case, the less important are the costs of trial, that is, as stakes become higher, *ceteris paribus*, settlements become more difficult. A settlement is, therefore, more probable, the smaller is the sentence in case of a conviction at trial and the more substantial trial costs are *vis-à-vis* those at a settlement. Second, under the assumption that both prosecutor and defendant hold identical views on the expected outcome of a trial, only risklovers would opt for trial (this result is further increased if the defendant's estimates of the probability of conviction exceed the prosecutor's). Third, the more expensive a trial is, the more attractive becomes the plea bargain (that is, the more resources a settlement saves, the more likely is its occurrence). An increase in the defendant's wealth (see Landes, 1971; see also Kobayashi and Lott, 1996), would also increase resources spent on her defense, reducing thus the probability of conviction, so that, regarding plea bargains, a lower negotiated sentence would be predicted; in the special case of risk neutrality the wealthy defendant's choice will depend on whether she expects the penalty to be a jail sentence (then: greater investments) or a money fine (then: smaller investments). Regarding the impact of the bail system, those defendants detained during trial are burdened with increased costs of defense so that they face a higher conviction probability in trial and a longer sentence in a settlement, respectively. The thus increased opportunity costs of trial would also lead to an increased settlement rate of detained defendants.

Empirical Results

Apart from its theoretical analysis, the Landes paper has sparked a series of empirical research both on an individual and the aggregated level, whose results, albeit in the overall consistent with the above mentioned theoretical claims, are not fully conclusive. Landes' own work (see Landes, 1971), showed that a reduction in the differential between trial costs and settlement costs would yield a higher number of trials. The assumption that higher resource costs of a trial would generate more plea bargains (the propensity to stand trial is higher for defendants released on bail) was only weakly confirmed. Subsequent work by Rhodes (1976), devoting attention to the aggregated level, found that both higher penalty offers in the bargaining process and higher defense resource expenditures increase the likelihood of a trial. Similar research by Weimer (1978) confirmed these results. Focusing on the duration of the prosecutorial pursuit of a case, Forst and Brosi (1977) confirmed the (quite apparent) claim that the 'strength of the case' in terms of the evidence against the defendant determines the prosecutor's attitude towards trial (but did not confirm the authors' - theoretically inconclusive - claim that prosecutors would direct their resources towards the prosecution of defendants with extensive arrest records). Elder (1989) could show that those factors that reduce the parties' disagreement on the estimated outcome, increase settlement (in particular, estimates on the 'strength of the case'). Further, increases in the stakes of the case enhance the likelihood of trial. In contrast, personal characteristics (sex, drug abuse, and so on, except for race) do not significantly affect the settlement decision. Elder's study, moreover, could not confirm the influence of bail and of a publicly provided defense counsel on the likelihood of trial.

Plea Bargaining as a Screening Device

An influential economic interpretation of the plea bargaining system beyond that of economizing on resources has been advanced by Grossmann and Katz (1983). The authors propose to view the plea bargaining process as a screening device that separates between innocent and guilty defendants (their further suggestion to view the plea bargain as an insurance device that reduces the scope of errors which would cause greater harm when regular trials are conducted is not deepened here): under the assumption of asymmetric information with respect to actual guilt (the accused is assumed to be systematically better informed than the prosecutor), the plea bargaining system generates a process of self selection of the truly guilty.

In the world of this model, all defendants are initially assumed equally risk averse irrespective of their factual guilt. Prosecutors are unable to identify beforehand actual guilt, but may estimate the percentage of actual guilty individuals among the accused. In such a world, the optimal plea bargain will always induce the truly guilty to accept the prosecutor's offer: Defendants self

select such that only the innocent will choose trial whereas guilty defendants reveal their guilt by acceptance of the plea offer. Results change, however, if defendants exhibit different degrees of risk aversion: risk-averse innocent defendants may still improve their position by accepting the plea offer in comparison to a regular trial so that for them the possibility of pre-trial settlement is still attractive. Since these highly risk-averse innocent defendants would not exhibit any behavioral difference to a less risk-averse guilty defendant, both types of defendants would accept the same plea offer. Therefore, if defendants are not equally risk averse, the above described screening property is reduced.

In a variant of this approach, Reinganum (1988) examines plea bargains with particular emphasis on asymmetric information regarding the 'strength of the case' in terms of the likelihood of conviction. This analysis yields the result that sufficiently weak cases are dismissed not in consideration of resource costs, but of type one and type two error costs. Those cases not dismissed, however, exhibit a higher likelihood of a negotiated guilty plea, the weaker their 'relative strength' is. Similarly to the Grossmann and Katz model, also this variant predicts a screening outcome in the sense that (when prosecutor types pool) the defendants separate such that only the guilty accept the plea and only the innocent stand trial. Further, since the strength of a case reflects in the sentence offered in a guilty plea and defendants are more likely to reject higher sentence offers, the likelihood of a trial in fact increases with the strength of the case.

If, hence, innocent defendants are, as it appears to be empirically the case, more risk averse than guilty defendants, this screening effect will disappear: Innocent defendants may incorrectly plead guilty only for the sake of avoiding the uncertain penalty pending from trial. It is here where the contribution by Kobayashi and Lott (1996) comes in: the authors demonstrate that the systematic disparity in criminal defence expenditures existing between guilty and innocent defendants allows for a preservation of efficient screening. Analogizing the procedure to a two-stage contest, the authors show that both defense and prosecution expenditures depend on the strength of the defendant's case. Since innocent defendants enjoy lower defense expenditures, they are less likely to falsely plead guilty in order to avoid trial. It is this mechanism that enlarges the range in which efficient sorting is preserved.

Normative Evaluation of the Plea Bargain

Economic contributions on the criminal procedure, starting with Landes, have emphasized the linkage of the plea bargaining system with the criminal law's overall pricing structure. Subsequent contributions have generated both critique and refinements of the original Landes paper and have sparked a more general discussion of the value, strengths, shortcomings, and the specific institutional framework of the plea bargain, and of possible avenues of reform.

Easterbrook (1983) has suggested refinements of the Landes paper by proposing to view the criminal procedure as a 'market system' constituted by an institutional framework whose essential elements are prosecutorial (and sentencing) discretion and plea bargaining. Following the original Landes position Easterbrook interprets prosecutorial behavior as a maximization activity (ultimately aimed at maximizing the 'deterrent punch' out of those resources committed to crime prevention), whereby the prosecutor, in her specific situation, equalizes marginal returns from resources spent in the prosecution of a variety of individual cases. The 'mix' of resource inputs into these cases is not determined in abstracto, but depends on current rates of apprehension, the frequency of certain offences and of the respective probabilities of conviction. Changes in these factors influence, therefore, the allocation of prosecutorial resources. The plea bargain is congenial to this system, since it facilitates the market like determination and imposition of the current 'price of the crime'. On the one hand, the plea bargaining system is thus flexible enough for quick adjustments to changing conditions in terms of current penalty prices. On the other hand, it constitutes a necessary element in the attempt to maximize deterrence out of a given prosecutorial budget. In this view the plea bargain is even superior to the regular trial, since the plea bargain reflects the probabilities case by case and allows for rapid adjustments as conditions determining the price (for example, frequencies of offense) change. The discretion in the criminal procedure, in particular by means of a plea bargain, allows the system to produce deterrence with a minimum of allocative inefficiency.

This view, inspired by a 'market-oriented' general background, has, however become in itself the subject of economically inspired criticism (Schulhofer, 1988). On the one hand, Schulhofer challenges the radical skepticism about the truth value of trials arguing that the proper institutional role of trials within the system of the administration of justice is not to merely distribute acquittals and convictions according to expected probabilities of conviction, but to reveal factual truth; it is this factual accuracy that represents an important factor in the overall administration of the criminal justice system. On the other hand, the criminal procedure in itself is not a market system, but a 'political system'. Framed as a principal-agent problem, this critique is twofold: most importantly the plea bargaining system allows the prosecutors to use and misuse their prosecutorial discretion in many ways, and the pursuit of their self interest will only rarely harmonize with the public interest irrespective of how this public interest is defined. A certain diversity of incentives with respect to the attractiveness of plea bargain deals also holds true with respect to the defendant's side: the basic reason for this diversity of interests between the defendant himself and her defense counsel is the fee structure in the US, whereby most defense lawyers work for a fee below market rates and, hence, have a clear selective interest to finish the case earlier rather than later. They

will favor a plea bargain. The said critique also affects the fairness properties of plea bargains in general: to be sure, any concluded bargain makes at least one party to the deal better off without harming the position of the other party; otherwise the parties would not have agreed. If we, however, acknowledge a principal-agent problem on the side of the prosecutor (law enforcement as a public good being entrusted to some agency) and a comparable misrepresentation in the defense lawyer-client relation, it becomes less obvious whether those deals concluded by the agents are always in the true interests of their principals. The scope by which this principal-agent problem actually plagues the fairness of concluded plea bargains remains an empirical question though.

A more institution-oriented and still highly economic interpretation of the plea bargaining system has been advanced by Adelstein (1981b). Since the precise determination of the 'punishment price' (direct material and moral cost of crime), as performed in the criminal procedure, is in itself costly, the cost of this price exaction, in an economic perspective, should be smaller than the crime's social cost: it is pre-trial settlement, as exemplified in the plea bargain, that constitutes a device for steady innovations in reducing these procedural costs. Seen as a process of continuous adaptations and modifications on punishment prices, the plea bargaining system also allows for a more sophisticated - and more institution oriented - treatment of prosecutorial behavior than under the 'penalty maximizing' position advanced by Landes: under the US system, the prosecutor is not an authority entrusted with the goal of maximizing penalties, but with that of promoting justice in terms of penalties that fit the crime. Moreover, the Landes approach tacitly assumes that the prosecutor considers all defendants guilty (or, at least, that the prosecutor is uninterested in the defendants' actual guilt). Since prosecutors are legally bound to pursue criminal cases such that only guilty individuals are sentenced with a due penalty, the prosecutorial behavior is likely to differ from a simple maximization of output in terms of years sentenced, but to follow the more complex mechanism of steady adaptations described above.

Institutional Comparison

The economically inspired skepticism towards the American system of the plea bargain does not amount to a general critique of all settlement institutions. Whereas this critique acknowledges the necessity of some such settlement procedure in the light of the costliness of full-scale criminal proceedings, it argues for a systematic reconsideration of all of its institutional details in order to identify the potential of institutional improvement. Such an analysis, in particular the contribution by Adelstein on the comparison to the British settlement system and that by Alschuler (1983), suggests that the current

American system of plea bargains may be suboptimal and that various ways of improvement of the institutional status quo exist.

Apart from Adelstein's (1981b) insightful comparison between the American plea bargain and its English equivalent, Alschuler (1983) and Schulhofer (1988) have discussed similarities and differences between the American and the European continental, in particular German, system. Their contributions have, *inter alia*, emphasized the variety of legal institutions which would allow for a more subtle way of settling those cases that do not deserve a full and costly trial and the actual existence of these institutions even under the continental system that, in principle, is characterized by a strict principle of legality regarding prosecutorial enforcement. Despite the existence of some such comparative research, much more remains to be done. Insofar as these settlement devices involve savings in resources, one has, however, to be aware of the fact that these savings exist (only) in the prosecutor's time and trouble costs, since under the continental system the prosecutor is not endowed with a budget to be invested at his sole discretion.

There are in particular two avenues for further research: hardly any systematic studies exist with respect to various informal ways of settlements under the continental system; not the least because of a lack of official data. Apart from those settlement institutions that are formalized parts of the regular legal system (for example, 'diversion'), other ('grey') variants of settlement only exist in the shadow of the law. Due to the different institutional framework of the continental system, in which the prosecutor is obligated to enforce the law, such 'negotiated penalties' are usually performed under inclusion of the judges in regular trials, that is, by an explicit or tacit agreement of all parties involved regarding the negotiated outcome of the trial. The systematic economic treatment of such behavior has to be developed under the rigorous assumption of self-interested motivation by all parties involved, that is, by the judge, the prosecutor, the defendant and his lawyer. Viewed thus it becomes apparent that as long as expectations regarding the expected outcome of the trial overlap, a 'negotiated' outcome should be in the self-interest of each party involved: in such a case the judge does not run the risk of reversal in the instance, the prosecutor may grant a discount due to the confession and yet remain within the limits of the agency's policy of treating like offences alike, and the defendant may obtain a favorable treatment. Since the system would suffer from cheating on the previously agreed upon sanction (say, the judge returns a penalty harsher than that negotiated or the attorney files an appeal despite his prior agreement to the sanction), it requires, for perfect functioning, repeated games with identical players. These conditions are perfectly met, for example, at the Viennese criminal court, where a few specialized lawyers deal with specialized judges and prosecutors. In the shadow of the law, most trials at this Court are in fact negotiated prior to their commencement.

Little attention has been devoted to the relation of settlement procedures to substantive law. Under the continental system, the principle of strict enforcement does not allow the prosecutor to leave certain offences or (sub)groups of offences unforced. Therefore, the 'political decision' to decriminalize certain offenses, has to be taken by the legislator, not the judiciary (closer observation, however, reveals that even the continental system is open to some such adaptation by the law enforcing institutions). In contrast, under the Anglo-American system, the prosecutor may refrain, by his deliberate choice, from enforcing offences, so that the respective behavior is effectively decriminalized. The prosecutors' deliberate enforcement policy may render a whole set of offences practically obsolete. Within the Anglo-American world, criminal offences, as they exist on paper, may, therefore, be radically different from those actually enforced (this is the case for example regarding sexual offences). These alternative systems (and, inter alia, the institutional fact that under the continental system neither prosecutors nor judges are elected) require careful examination in an economic and in particular public choice perspective.

4. Courts and Judges

The Punishment Dilemma

Under most procedural systems, courts (judges and/or juries) decide on the defendant's guilt and determine the penalty. It is these individuals (professional judges and jurors) who carry out the punishment task. To the extent that such meting out of a penalty is not only experienced as a 'good' (say, by deriving some utility from the satisfaction of retributory concepts of punishment), but rather an 'intrinsic bad' (intrinsic disutility of inflicting harm on someone), the 'punishment dilemma' arises if punishment is seen solely in a response setting (Buchanan, 1975). In her sentencing behavior, the individual encharged with the punishment task will seek to avoid or reduce the intrinsic disutility of punishment that - in this *ex post* perspective - appears as the arbitrary infliction of harm: whereas the public good of law compliance by deterrence can only be secured by this infliction of punishment *ex post*, the temptation to punish too leniently in relation to that level of punishment chosen under a 'constitutional' perspective is always likely to prevail in a response setting.

The very existence of the above described punishment dilemma has consequences both for the individual punishment decision and for the institutional choice of punishment institutions (Buchanan, 1975; Lewisch, 1995, 1997). First, as regards the individual's punishment decision, the individual judge will weigh the costs and benefits of punishment according to her own perspective, that is, according to her discounting rate. Although hard facts are missing, empirical observations seem to suggest that the discounting

rate of lay judges, who are not professionally trained in considering the long-term deterrent effects of punishment on law compliance, expresses rather current motivations and drives, so that lay judges tend to punish more leniently than their professional peers on the bench (the precise determination of the juries' sentencing behavior, depends, however, on the relation of the punishment dilemma to possible retributive concerns). This perspective also explains why jurors seek to avoid returning a penalty that they consider excessively harsh and prosecutors, aware of this fact, may reduce charges to increase the likelihood of a verdict, preferring a less severe charge with high likelihood of success over a more severe charge that is unlikely to be sentenced. Second, regarding institutional choice, the community would be unable to deter potential criminals if it confines itself, in its punishment institutions, to the response of violations of law, once committed: unduly light punishment would result. Punishment institutions, therefore, must be chosen strategically on the constitutional level (Buchanan, 1975). In particular, taking account of the above dilemma, the seemingly puzzling institutional feature to assign those individuals in a society with the punishment tasks (that is, professional judges) who, in their sentencing behavior, are harsher than the average man in the street, is economically sound.

Apart from the punishment dilemma, the selection and the sentencing behavior of juries has only partially attracted attention. Regarding jury conscription, both the criteria and procedures employed for the selection process are the object of economic interest ('keyman-suggestion versus random selection'). In a particularly economic contribution, Martin (1972) has studied the welfare effects of the jury system that does not pay conscripts according to their opportunity income, analogizing the economic working properties of the respective institutional arrangement to that of army conscription (see also Bowles, 1980). The decision-making mechanism of the jury under alternative voting rules (unanimity and supermajority rules) has, however, not been examined by the published law and economics literature (pertinent working papers are in circulation though). An analytical comparison of legal choices made by single judges and panels has been provided, with reference to work by Condorcet, by the literature on civil procedure (see Schäfer, 1998); particular contributions on the criminal justice system are lacking. For an overview of the use of lay judges in Germany, see Casper and Zeisel (1972).

Context Dependent Choices

Choices by jurors have found increasing attention by the economically inspired psychological literature (see Kelman, Rottenstreich and Tversky, 1996). This literature investigates, notably by means of experiments, to what extent legal evaluations and choices depend on the set of available judgements. Experiments show that generally observed 'violations' of context-independent choices are also present in the realm of judicial choices: experimental data confirm that

choices made by jurors exhibit both compromise effects (the same option is evaluated more favorably when seen as an intermediate within the array of options) and contrast effects (an option is evaluated more favorably in the presence of similar options clearly inferior to it than in the absence of such options). In this light, choices by jurors depend, for example, on whether the available options comprise only manslaughter and murder or manslaughter, (regular) murder, and murder under special circumstances. These findings also suggest, as another example of the close linkage of substantive and procedural aspects of criminal law, that a legislative 'splitting up' of a crime in distinguishable new categories alters choice behavior by judges regarding previous categories.

5. Evidence

Regarding evidence, also on issues of standard of proof and burden of proof, see the contribution by Parker and Kobayashi (in this volume Chapter 7900).

With respect to an analysis of specific procedural rules on evidence, it should be emphasized, however, that rules of evidence are not identical for civil and criminal proceedings in most (not all, so the notable exception of the US) legal systems. Differences stem from the more restrictive use of 'suspect' evidence in criminal cases (as embodied in the respective constitutional rights/amendments), which, albeit only partially, can be explained on grounds of the increased costliness of type one errors in criminal than in civil cases.

Economically inspired literature on the subject is not abundant: Tullock (1980, p. 148) suggests an economic categorization of rules of evidence in criminal proceedings (see Chapter 7900). The thus proposed distinction identifies separate categories of 'outlawed' evidence: one group of rules aims at reducing error costs by prohibiting evidence that, being of poor quality, is likely to mislead the court (for example, hearsay or the use of the lie detector). In an economic evaluation, Tullock suggests, however, to admit this 'poor evidence' to the trial, but to give it the appropriate (low) weight. A second category of rules seeks to reduce direct costs of the proceedings, in particular those in terms of wasting the court's time (for example, rules allowing to exclude not-relevant evidence). Category 3 contains rules that serve specific purposes extraneous to the proceedings, for example, the prohibition of torture, the unjustified opening of letters, the unlawful seizure of evidence, or the violation of evidentiary privileges.

Regarding this third category, rules of evidence are used to enforce other parts of the law. The justification for such an exclusion and its legitimate scope are, however, disputed even within the law and economics literature. On the one hand, one may argue, as Tullock (1980), that, if both the judicial and police

system are unable to sufficiently enforce the pertinent substantive rules (that is, those protecting the outside interest), some such exclusionary evidence rule can be argued for in an economic perspective. On the other hand, one may favor a strict distinction between the proper enforcement of the respective substantive rules and the usage of evidence gained in violation of these rules. In this respect, Posner (1982) considers excessive the exclusion of evidence in a criminal trial seized in violation of the Fourth Amendment (which forbids unreasonable searches and seizures): the costs of exclusion of the thus acquired evidence (in terms of the inability to obtain a conviction on this basis) is likely to exceed the social (in this view of Posner: often negligible) costs of misconduct. According to Posner, the respective exclusionary rules can only be explained on the basis of the 'technological' infeasibility of earlier times to properly enforce regulations on searches and seizures. In our times, these (in earlier days infeasible) tort sanctions are available, and their usage would suffice to deter violations. In the example of an unauthorized search in the defendant's home, Posner proposes to confine 'legal sanctions' to a tort remedy aimed at recovering the clean up costs of the apartment. In turn, wherever the illegally gathered evidence was not only unlawfully collected, but is in itself unreliable (such as coerced confessions and involuntary guilty pleas), a ban on its use in criminal trials is economically sound. For a well informed criticism of Posner's interpretation of exclusionary rules as an excessive sanction for governmental misconduct, see Morris (1982).

6. Arrest, Bail, and Sentencing Behavior

On arrest and bail, see Landes (1974), Myers (1981), on issues of court delay Levin (1975), on the statistical analysis of courts' sentencing behavior Tiffany, Avichai and Peters (1975).

7. Appeals

Neither the institution of appeals in the criminal proceedings as such nor specific technical procedural issues have been thoroughly discussed from an economic standpoint. We may refer, however, to the general economic analysis of appeals, as developed in civil proceedings, notably by Tullock (1980, p. 162) and Shavell (1995): when designing a court system with the task of minimizing trial costs plus expected error costs, choice has to be made between investments in the reliability of courts of first instance (by investing resources in, say, the education of trial court judges or the usage of panels) and/or by investments in the accuracy of the appeals courts. Policy choices are regularly a mix between investments on both levels of adjudication. An economic explanation for the

use of a second instance is that, whereas costs in the first instance are to be borne in every legal case, the costs of appeal only materialize if an appeal is actually filed: this will only be done by those disappointed litigants who consider such an appeal cost-justified, leading thereby to a separation within disappointed litigants. The specific institutional mix of courts of first instance and of courts of appeal in criminal cases is due to the predominant concern of avoiding type one errors. For the task of correctly determining the facts of the case relatively more resources are invested in courts of first instance than in civil cases. Accordingly, since courts of appeal are unlikely to possess superior knowledge regarding fact finding, errors of fact are largely excluded from revision in the appeal's process (the opposite generally hold true where the collection of evidence is performed on a less rigorous basis at first instance, as is the case for petty offences). Even the increased accuracy of the trial proceeding, however, cannot fully substitute for the use of the appeal's process which is more focused on error of law. Whereas the appeal's process is entrusted, in civil cases, solely to disappointed litigants, the characteristics of the criminal law suggest a review of court rulings of first instance also on a more objectivized ('*ex offio*') basis allowing the courts of instance to review (some) legal mistakes even if they have not been brought up by either side (defendant or prosecutor) in their court motions. The respective institutional arrangements can regularly be observed in various national procedural rules.

The regular exclusion of interrogatory appeals in criminal procedure can be explained in the light of the argument by Shavell (1995) that violations of procedural rules, in particular with respect to the gathering of evidence, can best be considered on the basis of the final judgement. If court rulings prior to the final judgement, however, impose particular costs on the defendant, as is the case with arrest, and warrants of arrest, appeals against these court orders are regularly admitted. Insofar as the avoidance of legal mistakes and harmonization of the law within a jurisdiction is concerned, again criminal proceedings differ from civil proceedings: whereas in civil cases, any correction of a judgment, once unappealable, imposes high costs on the prevailing party trusting the validity of the final court judgment, in criminal cases a particular interest exists in finding the accurate judgement. It follows that judicial review of sentences is facilitated in criminal cases even if (already) unappealable; in particular for the sake of eliminating type one errors.

8. Criminal Procedure and the Economics of Justice

Economic theories of justice, in particular contractarian contributions (Rawls, 1971; Brennan and Buchanan, 1985), propose to frame the normative discussion regarding the fairness of legal (and also procedural) rules by means

of the 'veil of ignorance' experiment. If individuals are put behind a veil of ignorance thick enough to screen out all their distinctive properties and features in real life, so that they are unable to identify how their own position will be affected by the rules contemplated, they will opt, based on their own self interest, for rules that can be considered 'fair'. Whereas the veil as such is only an analytical device, the mechanism behind it may be mimicked in real life when the choice setting for institutional choices is designed such that the principles of generality and extended time dimension are observed. If an individual is likely to assume all feasible positions under a legal rule (today she is plaintiff, tomorrow defendant), there is no room for biased choices; hence the individual will design rules, again based on her own interest in a non-discriminatory manner. In the light of this analytical framework, it is possible to evaluate the fairness properties of procedural rules. Similarly to a comparable exercise undertaken for civil procedural law (see Lewisch, 1998), the normative requirements for a just ('fair') criminal procedure, as is enshrined in Article 6 of the European Convention on Human Rights, can be derived from a veil perspective. Research specifically devoted to criminal procedure is, however, necessary.

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