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THE EFFECT OF JURY SIZE ON THE PROBABILITY OF CONVICTION: AN EVALUATION

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NOTES

The Effect of Jury Size on the Probability of Conviction: An Evaluation of Williams v. Florida

I. INTRODUCTION

MANY FACTORS are relevant to an analysis of a judicial decision. Some of the more important approaches emphasize: (1) how the new legal rules are related to preexisting law; (2) the personal or psychological reasons for the judge's decision;[1] (3) the institutional context of the court, in an effort to elucidate important strengths and weaknesses in the legal system as a whole;[2] (4) non-scientific appraisals of the practical, social effects of the legal rules

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[1] There are many problems involved in relating the judge's personality, history, cognitive structure, etc., to the decision he reaches in a particular case. Present models of individual behavior are not sufficiently sophisticated to deal with such broad questions. Even if there were a model that adequately described the judge, there would be enormous problems involved in gathering the personal data necessary to use the model in a given case. The problems that arise in both model-construction and data-gathering are discussed in Lewis, *Systems Theory and Judicial Behavioralism*, 21 CASE W. RES. L. REV. 361 (1970), which focuses particularly on a study of Justice Black.

[2] The institutional context of the court can be analyzed from a number of perspectives. *See generally* L. VON BERTALANFFY, GENERAL SYSTEMS THEORY; FOUNDATIONS, DEVELOPMENT, APPLICATIONS (1969). One of the issues in this category is the sufficiency of the adversary proceeding. The presentations are made by two or more lawyers before judges, and rarely are any of these persons expert in fields other than the law. The efficacy of such a format is questionable, but one cannot hastily conclude that another body would be more capable. One alternative is to leave more decision making to the legislature, but there is no guarantee that a legislature will make an intelligent investigation before it acts. And even when such an investigation is made, there are strong tendencies for legislators to disregard the results and follow either their own visceral feelings or the most expedient political route. *See, e.g.*, J. KAPLAN, MARIJUANA: THE NEW PROHIBITION at ix-xii (1970).

Legal problems are often treated superficially, and this seems partially the fault of the law schools. The schools are one of the most important institutions in the legal system, but they provide little education beyond the mere art of manipulating legal rules. Many persons have suggested that they should become more social science oriented to remedy this deficiency. *See, e.g.*, S. FOX, SCIENCE AND JUSTICE (1968); Derham, *Legal Education — A Challenge to the Profession*, 43 AUSTL. L.J. 530 (1969); Traynor, *What Domesday Books for Emerging Law?*, 15 U.C.L.A.L. REV. 1105 (1968). Some law schools have already initiated new courses that depart radically from the narrow, traditional approach. For example, Yale Law School has instituted a program of Law and Modernization whose goal is to combine political, social, and economic developments into a policy of social change through the use of law. *See* Yale University, Bulletin of Yale University: Yale Law School (1970).

of the case and of alternative legal rules;[3] and (5) scientific and quasi-scientific analyses of the effects of alternative legal positions.[4]

The case of *Williams v. Florida*[5] — which held that a jury of six persons is constitutionally sufficient in a criminal trial — can be fruitfully analyzed from most of these perspectives. Only the first approach (a comparison of the decision with preexisting law) would be of little value. The issue of jury size is a relatively isolated one and does not fit easily into a general legal doctrine. Moreover, because the Court squarely rejected earlier cases which said that 12 jurors were required by the Constitution,[6] there is no room to reconcile the *Williams* holding with other decisions. For any of the other approaches, *Williams* provides excellent material for an informative study. Statements peripheral to the case shed some light on the values of the Justices that were not articulated in the actual opinion, but which probably affected their decisions.[7] Also,

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[3] This category refers to any hypothesis about the impact of the decision that seems plausible but does not rely on empirical data. These hypotheses are simple to create since they require no experimental work and draw only from one's intuitive notions about human behavior. It is unwise to base a decision on such superficial grounds. For example, the longstanding American dogma about the effects of pornography has recently been undercut by an empirical study. Kant & Goldstein, *Pornography*, 4 PSYCHOL. TODAY, Dec. 1970, at 58. Actual behavior may often be the opposite of one's intuitive conceptions. *See generally* Moynihan, *Eliteland*, 4 PSYCHOL. TODAY, Sept. 1970, at 35.

[4] For example, instead of guessing at the effects of Mapp v. Ohio, 367 U.S. 643 (1961), on the police and on judicial administration, Stuart Nagel has studied the actual impact of the decision on these institutions. *See* Nagel, *Testing the Effects of Excluding Illegally Seized Evidence*, 1965 WIS. L. REV. 283. *See also A Study of the California Penalty Jury in First-Degree-Murder Cases*, 21 STAN. L. REV. 1297 (1969) (special edition). For a general discussion of such empirical testing, see THE IMPACT OF SUPREME COURT DECISIONS (T. Becker ed. 1969).

An appraisal of the role of the social sciences in the legal process is difficult. These disciplines rarely provide the conclusive, quantitative results typical of the natural sciences. It is still an open question whether the problems in analyzing human behavior pose ultimate differences from those arising in the natural sciences. Ernest Nagel, among others, believes that the difference is only one of the degree of quantitative complexity, rather than unavoidable, qualitative differences. *See generally* E. NAGEL, THE STRUCTURE OF SCIENCE; PROBLEMS IN THE LOGIC OF SCIENTIFIC EXPLANATION (1961); A. KAPLAN, THE CONDUCT OF INQUIRY; METHODOLOGY FOR BEHAVIORAL SCIENCE (1964).

[5] 399 U.S. 78 (1970).

[6] In order to hold that the sixth amendment allowed the six-man jury, the Court rejected six centuries of common law tradition and numerous Supreme Court pronouncements. *Id.* at 125-29 (Harlan, J., concurring). For previous Court decisions embodying the prior law, see Patton v. United States, 281 U.S. 276, 288 (1930); Rassmussen v. United States, 197 U.S. 516, 519 (1905); Maxwell v. Dow, 176 U.S. 581, 586 (1900); Thompson v. Utah, 170 U.S. 343, 349 (1898).

[7] There is some indication that a primary reason for the decision was to lessen the states' burden of maintaining their systems of criminal administration. Chief Justice Burger believes that "jury trials [slow] the wheels of justice" and apparently supports

the quality of the analysis accorded the six-man jury problem raises questions about the adequacy of our legal institutions to deal with difficult behavioral questions.[8]

Yet the fifth approach, a scientific appraisal of the potential social impact of *Williams*, is probably the most important.[9] A functional analysis of jury size is a prerequisite to a practical assessment of *Williams*. Such an analysis is equally crucial to the strictly legal issue because the Court explicitly held that the constitutionality of the six-man jury would turn on the operational importance of the

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their abolition. N.Y. Times, Sept. 8, 1970, at 1, col. 3. *But cf.* The Plain Dealer (Cleveland, Ohio), Nov. 15, 1970, at 11, col. 1.

[8] The question here is whether the Justices, their clerks, and the attorneys are capable of correctly using available knowledge. The Court's analysis of the behavioral problem in *Williams* — whether a six-man jury would return the same verdicts as a 12-man jury — did not make full use of available theory or data. *See* notes 23-31 *infra* & accompanying text. The Court's use of statistics has often been open to criticism. For example, an explanation of the defects in the Court's guidelines for jury discrimination cases is given in Finkelstein, *The Application of Statistical Decision Theory to the Jury Discrimination Cases*, 80 HARV. L. REV. 338 (1966).

The quality of the arguments presented by the attorneys in *Williams* raises further questions about the institutional context of the Court. Counsel for Johnny Williams allocated a little over one page to the constitutionality of the six-man jury and did not intimate that a jury's size might affect its verdict. No functional comments whatsoever were made. *See* Brief for Petitioner 8-9, Williams v. Florida, 399 U.S. 78 (1970). Without proof of a verdict differential, there is no apparent prejudice to the defendant, and consequently his claim could only rest on history.

The six-man jury issue was not even mentioned in an amicus curiae brief. It is especially odd that the NAACP did not challenge the smaller jury. With a six-man jury, racial discrimination in the selection of jurors becomes even more difficult to prove than it presently is. Since only half as many jurors are used, statistical fluctuations become more pronounced and actual discrimination requires showings of very egregious imbalance. *Cf.* Finkelstein, *supra*.

This lack of attention to the question has at least two possible explanations. One can be drawn from Justice Harlan's belief that no one thought the Court would find the six-man jury constitutional. *See* 399 U.S. at 122 (concurring opinion). If he was correct, no one would have been motivated to investigate the question in any depth. The other explanation points to the deficiencies in the traditional skills of the lawyer in dealing with behavioral problems. This explanation places the ultimate criticism on the legal system as a whole.

[9] Any one problem in the analysis of a case is closely intertwined with all the others. The impact of a decision is never independent of the institutional context of the Court, the law itself, or innumerable other considerations. To focus on one aspect alone always raises the problem of reductionism, and some scientists believe that the failure to countenance the entire whole can only produce colorable conclusions. *See, e.g.*, L. VON BERTALANFFY, *supra* note 2. Nevertheless, the scientist always must steer between the overly narrow focus which loses its relevance and the overly broad focus that can lead to no substantial conclusions. It seems fully justified to concentrate on a functional evaluation of the six-man jury. The effect of *Williams* on the accused is certainly broad enough to be valuable, yet sufficiently defined to allow meaningful conclusions. Moreover, a functional analysis of the reduced jury was a critical element in the legal decision itself. *See* text accompanying note 72 *infra*.

number of jurors:[10] If size played a relevant role in view of the purposes of the jury, 12 would remain the constitutional requirement. Thus, the *Williams* test gives due weight to the importance of function and demands a thorough evaluation of how the verdicts of six- and 12-man juries would compare. In its evaluation of this question, the Court concluded that there would be no difference between the two. Consequently, the smaller number fulfilled the purposes of the right to a jury trial as well as the traditional, larger jury, and was found constitutional.

Accepting the constitutional test enunciated by the Court,[11] the threshold question is whether the *Williams* analysis of jury size is sufficiently accurate from a functional perspective. The present study answers this question in the negative. Neither the reasoning of the opinion nor the references relied upon support the Court's conclusion that either jury would return the same verdicts. Moreover, additional empirical evidence, not taken into account in the opinion, implies that the smaller jury will indeed convict different defendants. Because the constitutionality of the six-man jury rested upon the Court's incorrect analysis, the *Williams* holding is clearly threatened.

In reappraising the six-man jury problem, a brief discussion will first be made of the elements of the jury that are relevant to its role in the legal system. Next, the Court's evaluation of how jury size affects this role will be criticized. After pointing out the deficiencies in the *Williams* opinion, a more rigorous, scientific comparison of the two kinds of juries will be made. Because this analysis will demonstrate a meaningful difference in the behavior of the two juries, the study will conclude with a reexamination of the narrower legal issue — whether the reduced jury satisfies the Court's test of constitutionality.

II. The Supreme Court's Analysis of the Role of the Jury and the Importance of Jury Size

The Supreme Court rejected the force of common law history as an absolute command in *Williams* and instead directed its inquiry

[10] *See* text accompanying note 72 *infra*.

[11] This study will show that *Williams* was decided erroneously under a correct application of the Court's own constitutional test. One could go further and dispute the test enunciated by the Court, but that step will not be taken here. Among other reasons for this reluctance is the problem of the Court's broad discretion in choosing tests. Once a constitutional question arises, the Justices are essentially unrestrained in deciding which of the numerous types of tests to apply. For a further discussion of this point, see note 74 *infra* & accompanying text.

to a functional appraisal of jury size. If the six-man jury performed differently than a jury of 12, its constitutionality would turn on two further questions. First, did this difference mean that the smaller number frustrated the purposes of the jury, or was the change unobjectionable? Second, if the reduction in size did derogate from the purposes of the jury, did the Constitution alone demand that the traditional size be retained? Before these questions can be resolved, the role of the jury in the legal system must be defined. In this section, the Supreme Court's view of the purposes of a jury trial will be examined. Then, the way the Court evaluated the six-man jury in light of these purposes will be critiqued.

A simplistic adumbration of the jury's function would be misleading because of the conceptual difficulties that surround the problem. Even from a strictly legal perspective, a number of constitutional rules provide a web of restraints that are relevant to the jury in criminal cases.[12] Yet, as complicated as are the legal factors, the philosophical and behavioral problems are much more difficult. Jurisprudential ideas about the jury as a decision-maker have run the entire range of possibilities. The jury has been described as anything from a sacrosanct body of rational factfinders to a group of unpredictable, irrational commoners.[13] Unfortunately, because there

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[12] In a state criminal trial, these rules have their origin in the sixth and 14th amendments. *See* Duncan v. Louisiana, 391 U.S. 145 (1968); Bumper v. North Carolina, 391 U.S. 543, 545 (1968).

[13] According to the classical notion, the jury observes the trial, makes logical conclusions regarding the evidence, and then applies the relevant legal rules to those conclusions. *See generally* J. BENTHAM, RATIONALE OF JUDICIAL EVIDENCE (1827). Modern psychologists, however, place less emphasis on the rational, conscious side of man. *See generally* C. HALL & G. LINDZEY, THEORIES OF PERSONALITY (1957). For an explication of the jury from a more realistic modern stance, see Broeder, *The Functions of the Jury: Facts or Fictions?*, 21 U. CHI. L. REV. 386, 387-401 (1954).

One school believes the jury is incapable of using the law in a "proper," rational manner:

> There are therefore three unknown elements which enter into the general verdict: (a) the facts; (b) the law; (c) the application of the law to the facts. And it is clear that the verdict is liable to three sources of error, corresponding to these three elements. . . . The general verdict is as inscrutable and essentially mysterious as the judgment which issued from the ancient oracles of Delphi. . . .
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> As to the second element . . . the *law*, it is a matter upon which the jury is necessarily ignorant. The jurors are taken from the body of the country, and it is safe to say that the last man who would be called or allowed to sit would be a lawyer. They are second-hand dealers in law, and must get it from a judge. . . . Indeed, can anything be more fatuous than the expectation that the law which the judge so carefully . . . expounds to the layman in the jury box will become operative in their minds in its true form? Sunderland, *Verdicts, General and Special*, 29 YALE L.J. 253, 258-59 (1920).

English and American literature are replete with tales of the jury, and a large por-

are few thorough studies of the jury,[14] there are no conclusive grounds for adopting any one particular view.

In the course of deciding actual cases, the Supreme Court has avoided being caught in most of the perplexing "extralegal" problems. It is possible to extract from past decisions a few concise factors that the Court has deemed essential to the jury's place in the legal process. Of course, the ultimate function of the jury is to resolve the question of the defendant's guilt. And a jury is preferred over other means because it provides the defendant with "an inestimable safeguard against the corrupt or overzealous prosecutor and against the compliant, biased, or eccentric judge."[15] This safeguard is secured by the "interposition between the accused and his accuser of the common sense judgment of a group of laymen, and in the community participation and shared responsibility that results from that group's determination of guilt or innocence."[16] When a change in the number of jurors is made, the Court believes that the jury's task of resolving guilt is unimpaired if a few features are protected.[17] These critical factors are: (1) the requirement of group deliberation; (2) the prevention of outside intimidation; and (3) the assurance of a fair possibility of obtaining a representative cross-section of the community.[18]

Williams concludes that the change to six jurors does not affect these factors and that smaller juries would return the same verdicts as traditional juries. Several theoretical reasons are given to support this conclusion, and it is also claimed that empirical evidence corroborates the theoretical arguments. But an examination of the opinion will show that the Court's conclusion is unwarranted. First,

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tion of these reflect a very cynical impression. *See, e.g.*, Carroll, *Trial of the Knave of Hearts*, in LAW IN ACTION 491 (A. Curiae ed. 1947).

[14] The most extensive study of the jury was performed at the University of Chicago. *See* H. KALVEN & H. ZEISEL, THE AMERICAN JURY (1966), *reviewed*, Kaplan, 115 U. PA. L. REV. 475 (1967). A comment on jury research is made in Erlanger, *Jury Research in America*, 4 LAW & SOC'Y REV. 345 (1970).

[15] Duncan v. Louisiana, 391 U.S. 145, 156 (1968).

[16] Williams v. Florida, 399 U.S. 78, 100 (1970).

[17] The Court's view of the purpose of the jury will be accepted as final. The reluctance to criticize that view is based on several considerations. Even on the basis of the Court's interpretation, it can be shown that *Williams* was decided wrongly. Also, the principal aspects of the jury that are relied upon in this study are well entrenched (for example, the idea that the verdict should be representative of community thought). In addition, a complete explication of the jury's role opens a morass for which there presently are no final answers. *See* notes 13-14 *supra* & accompanying text. Consequently, a criticism of the Court's position might not lead to a better resolution of the question.

[18] Williams v. Florida, 399 U.S. 78, 100 (1970).

the Court considers whether the probability of finding at least one juror who insists on acquittal is greater with the larger jury, and consequently the chances of escaping conviction are greater. The Court rebuts this argument by asserting that the opposite is equally true — the probability of finding one person determined to convict is also greater with 12 jurors, so acquittal likewise seems more difficult to obtain.[19] The Court's reasoning has a superficial appeal, but it is true only if the available jurors[20] are equally divided on the question of the defendant's guilt. In the more likely situation where the available jurors are not equally divided,[21] the probabilities of selecting an innocent-prone and a guilty-prone juror are not the same, as implicitly assumed in *Williams*. The Court's reasoning is completely undercut by this fact. Moreover, the compound probability of selecting several jurors of one leaning or the other varies as the size of the jury is varied. Consequently, it seems that the overall probabilities of conviction and acquittal are changed when the number of jurors is reduced.[22]

More important than this error in logic is the Court's failure to draw on the available empirical evidence describing the behavior of small groups in the process of seeking consensus.[23] There is little validity to ostensibly logical views of jury behavior in the absence of empirical verification.[24] *Williams* does purport to rely upon several "studies" to infer "there is no discernible difference between the results reached by the two different-sized juries,"[25] but the references cited[26] do not support this conclusion. In one of the articles, the clerk of a civil court summed up his general impressions and stated that the verdicts of the smaller juries " 'in practically every case

[19] *Id.* at 101.

[20] For a discussion of who is an available juror, see note 43 *infra*.

[21] In the University of Chicago jury study, the petit jury was equally divided before deliberation only 10 times out of more than 200 cases. These figures imply that the available jurors are usually divided unequally as well. (Various statistical methods could be used to prove this conclusion, but a proof will not be included here.)

[22] The probablistic impact of the six-man jury (as to likelihood of conviction and acquittal) is fully explained at notes 35-63 *infra* & accompanying text.

[23] *See* articles cited notes 50-59 *infra*.

[24] *See* notes 3-4 *supra*.

[25] 399 U.S. at 101 (footnote omitted).

[26] Cronin, *Six-Member Juries in District Courts*, 2 BOST. B.J. 27 (1958); *New Jersey Experiments with Six-Man Jury*, 9 BULL. OF THE SECTION OF JUD. AD. OF THE ABA (May 1966); Phillips, *A Jury of Six in All Cases*, 30 CONN. B.J. 354 (1956); *Six-Member Juries Tried in a Massachusetts District Court*, 42 J. AM. JUD. SOC'Y 138 (1958); Tamm, *The Five-Man Civil Jury: A Proposed Constitutional Amendment*, 51 GEO. L.J. 120, 134-36 (1962); Wiehl, *The Six Man Jury*, 4 GONZAGA L. REV. 35, 40-41 (1968).

[were] fairly comparable to those of the twelve member juries and by the same token they [were] just as quick to find for the defendants.' "[27] Of course, such a totally unscientific opinion is of no merit in a rigorous attempt to compare the behavior of the two juries.[28] It is devoid of any records of trial results and reflects nothing more than the impressions of the court clerk. The other articles cited discuss the obvious fact that reduced juries are somewhat cheaper and more expeditious, but they provide no analysis of the verdicts that are returned.

Finally, the Court argues that reduction of the number of jurors does not affect the outcome since the *proportion* of jurors that the defendant must persuade in order to escape conviction would be the same with each size jury.[29] Again, this reasoning implicitly assumes that the available jurors are equally divided on the issue of the defendant's guilt. In the much more common case where the jurors are not equally divided, a variation in jury size affects the probabilities of obtaining the different proportions of favorable and unfavorable jurors.[30] Because the probabilities of obtaining different ratios of conviction-prone jurors are changed when the jury size is changed, the Court's own logic (which assumes that the verdict is determined by proportion alone) implies that the outcome of the trial is affected as well.

In another aspect of the problem, the Court dismisses the question of the representational quality of the jury. It states that a jury of 12 does not ensure representation of all voices in the community, and consequently a jury of six should not be much worse.[31] The failure to investigate the effect of diminished representation more deeply is a fatal defect in *Williams*. It will be shown that the change in representation is crucial to the defendant's fate; this factor must be precisely taken into account before valid conclusions can be made about the importance of jury size.

In addition to the behavioral issues that were raised in *Williams*, there are many Supreme Court decisions concerning the right to a

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[27] Tamm, *supra* note 26, at 135 (quoting from a letter to Judge Tamm).

[28] Even if the court clerk had compiled statistics comparing the verdicts of the two juries, any conclusions based on such data would be very dubious. To use such data properly, one would have to know exactly what differences existed between the trials that took place in each of the two categories. Problems of *ceteris paribus* would contaminate any inferences, unless it were shown that the trials were "sufficiently" comparable.

[29] 399 U.S. 101 n.49.

[30] *See* notes 21-22 *supra* & accompanying text.

[31] 399 U.S. at 102.

jury representative of the community[32] and to a fair trial.[33] The opinion does not refer to any of these cases, but the reason for this neglect seems rather clear. The Court believed the six- and 12-man juries would return the same verdicts; consequently, no harmful consequences could befall the defendant from the reduction in jury size. Unless the six-man jury increases a defendant's chances of conviction, he has no claim of prejudice to a constitutional right analogous to the rights protected in these other cases.[34] These cases are relevant only if it is first shown that the smaller jury functions differently, and to the detriment of the defendant.

To summarize the Court's analysis of jury size, one can only say that the reasoning is superficial and the conclusions are unsupported. Consequently, an *ab initio* study of the behavioral issue must be made. This will be done in the next section, and the constitutionality of the six-man jury will be reassessed in section IV.

III. Evaluation of the Performance of the Six-Man Jury

The behavioral question before the Court in *Williams* was very narrow. If both a six-man jury and a 12-man jury were hypothetically used in each criminal trial, would the verdicts ever differ? Many difficulties would impede a general study of how the final verdict is related to the trial, but a relatively simple model can deal with the concise question in *Williams*. This simplification is possible because the most complex facets of the jury can be held con-

[32] *See, e.g.*, Carter v. Jury Comm'n, 396 U.S. 320, 331-38 (1970) and the cases cited therein.

[33] *See, e.g.*, Rideau v. Louisiana, 373 U.S. 723 (1963).

[34] Usually these cases do not refer to an actual increase in the chances of conviction, but just vaguely refer to the requirements of a fair trial. The difficulty in showing the impact on the defendant is a prime cause of the Court's nebulous approach in these cases. This difficulty is discussed in Estes v. Texas, 381 U.S. 532, 578-80 (1965) (Warren, C.J., concurring).

Actual harm to the defendant probably does not have to be shown in cases of jury representation. Although a defendant has no right to representation of all classes on his particular jury, he does have the right to a jury selected from a general pool where no class has been deliberately excluded or invidiously under-represented. *See, e.g.*, Swain v. Alabama, 380 U.S. 202 (1965). Since the leading case of Strauder v. West Virginia, 100 U.S. 303 (1880), a violation of this right invalidates a conviction. That Court may have believed minority defendants were subjected to an unjustly high chance of conviction, but this possibility has never been relied upon as the grounds for reversal.

A jury pool can also be challenged on the grounds that it was selected in a manner such that the probabilities of conviction were higher than with a more representative pool. *See* Fay v. New York, 332 U.S. 261, 278-81 (1947) (a claim that the "blue-ribbon" jury was conviction-prone was considered a valid challenge, but was rejected there as unproven).

stant while only the size of the jury is varied. The advantages of this approach are most easily appreciated if the jury is first discussed in a very general context, and then in the limited context of size alone.

The broadest possible inquiry would question whether the jury is really a desirable part of our legal process.[35] An answer to this problem would require very accurate knowledge of the jury's decision-making function and of its other short and long term social effects.[36] The complexities involved in such an unrestricted evaluation become quite clear if the adjudication process is viewed as a composite of several phases: (1) the events that transpire within the courtroom, including the law expounded by the judge; (2) the individual jurors' reactions to these courtroom proceedings; and (3) the establishment of a verdict by deliberation. As to the first of these phases, there is clearly a connection between what has occurred outside the court (the alleged crime) and the trial proceedings themselves, but little can be said about the particulars of that connection.[37] As to the second phase, the jurors react to the events in the courtroom in essentially unknown ways.[38] Because our present knowledge inadequately describes what happens in these first

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[35] This question has played a part in various decisions. *See, e.g.*, Baldwin v. New York, 399 U.S. 66 (1970); Duncan v. Louisiana, 391 U.S. 145 (1968).

[36] The significance of short term effects (problems of "behaving") and long term effects (problems of "becoming") are discussed in Gerard, *Neurophysiology: An Integration (molecules, neurons, and behavior)*, in 3 HANDBOOK OF PHYSIOLOGY 1919 (J. Field ed. 1960).

[37] One problem in creating past reality is introduced by the inherent inaccuracies of our senses. Heinlein's "fair witness" (who is trained to be a completely objective, error-free purveyor of observed phenomena) may represent man's potential, *see* R. HEINLEIN, STRANGER IN A STRANGE LAND 98-100 (Berkeley Medallion ed. 1968), but most persons today are infected with the tendency to misperceive their surroundings. Marshall, *The Evidence*, 2 PSYCHOL. TODAY, Feb. 1969, at 48. *See also* Warren & Warren, *Auditory Illusions and Confusions*, 223 SCIENTIFIC AMERICAN, Dec. 1970, at 30.

There is also an ontological problem because what happens in court is simply not going to be the same as what actually happened. There is obviously a difference between the sensory stimuli that impinge on a person present at an actual event and those that impinge on one who observes a courtroom reconstruction of that event. The ultimate effect this difference has on the juror's opinion of guilt is unpredictable.

Another difficulty is the problem of conveying the *nonphysical* aspects of the case (such as emotion) into the courtroom. In one unusual approach to the problem, a court held that an attorney has the right, and possibly the duty, to cry during the trial. Ferguson v. Moore, 98 Tenn. 342, 350-52, 39 S.W. 341, 343 (1897).

For a discussion and references regarding recreation of history in the trial court, see *In re* Fried, 161 F.2d 453, 462 n.21 (2d Cir.), *cert. denied*, 331 U.S. 858 (1947); United States v. Rubenstein, 151 F.2d 915, 920 n.4 (2d Cir.), *cert. denied*, 326 U.S. 766 (1945).

[38] *Cf.* notes 1, 13 *supra* and note 41 *infra*.

two phases, there is a great deal of uncertainty in the adjudication process. It is impossible to make definitive conclusions about the overall behavior of the jury, or about the factors that determine the verdict. But the third phase, jury deliberation, is much simpler, and there are studies available that describe what happens during this stage of the process.[39]

These difficulties are raised only to underscore a single point. The impact of the *Williams* variable, the number of jurors, can be evaluated accurately without reference to the first two phases of the adjudicative process. Because the task here is to analyze the jury's reaction to the courtroom proceedings alone,[40] the problems inherent in correlating the first phase to the out-of-court events are irrelevant. The sole aim is to show what differences might arise in the verdicts if a jury of six rather than 12 were used. Nothing in the trial itself is changed, other than the size of the jury. Ultimately, it might be very informative to correlate verdicts to the "real world" events surrounding the alleged crime, but a complete evaluation of *Williams* does not require such thoroughness. Also, differences in the six-man case can be examined independently of how each juror arrives at his predeliberation opinion of the defendant's guilt (the second phase) because an individual juror's predeliberation reaction to the trial is not affected by the size of the jury.[41] A juror would carry the same feelings into the jury room regardless of

[39] *See* notes 49-61 *infra* & accompanying text.

[40] The term "trial" will be used in this study to denote any one set of proceedings observed by the jury. Thus, a trial is defined to include only those events in the courtroom that affect the jurors' opinions. It is not meant to include anything that occurs after the jurors depart for deliberation. This definition is more limited than the genral meaning of the word, which would include everything that happens through the pronouncement of the verdict.

By concentrating on one unique set of courtroom events, a predictive model can attain a high degree of scientific merit. The entire *ceteris paribus* problem is circumvented by this approach. In the terminology of the three-phase formulation, all the difficulties of the first phase have been avoided by simply keeping the events constant for each application of the model. The way in which the trial proceedings are related to the alleged crime is not a factor.

[41] The juror's initial reaction, before deliberation, is assumed to be a function only of his mental constitution and what happens in the courtroom. The juror's feelings towards the defendant's guilt or innocence, at the moment he enters the jury room, is taken to be independent of the size of the jury.

Even this apparently self-evident statement has several assumptions buried within it. Attorneys might alter their behavior (consciously or otherwise) before the smaller jury. Likewise, the witnesses might be affected by the smaller juries in some subtle way, with a consequent modification of their behavior while testifying. The juror himself might experience a slightly different emotional state just because he is a member of a six-man group, rather than a 12-man group. And this difference could manifest itself by affecting his reaction to the trial. All such effects are assumed to be statistically insignificant, although this study does not test this assumption empirically.

the total number of jurors. Thus, the factors in the first two phases can, and must, be considered constant in assessing the importance of a change in the jury size alone. If the effects that ensue solely from a reduction in the number of jurors is shown, the impact of *Williams* will be perfectly defined — regardless of how the in-court proceedings are related to their historical referent, or what may be the psychological basis for a juror's reaction to the trial.

The framework for analysis, then, is simple. A criminal trial takes place, and two questions are asked: What would be the outcome if a jury of six had sat in judgment? And what would be the outcome if a jury of 12 had sat in judgment? First, a model of the jury will be developed that copes with each unique trial.[42] To emphasize that specific trials are being examined initially, the subscript "t" will be used with each variable. After the model for the individual case is completed, the impact of the change in jury size on defendants as a whole will be assessed. Very briefly, the model will tie the courtroom proceedings to the final verdicts in three distinct steps: (1) a parameter will be used to characterize the jurors' reactions to the trial and statistically describe the petit jury just prior to deliberation; (2) an analysis of jury deliberation will be made on the basis of empirical studies; and (3) this analysis will be applied to the predeliberation description of the jury to predict the verdicts.

A. *The Relationship Between the Trial and the Predeliberation Jury*

If each potential juror[43] had actually observed the trial, a certain fraction of them would be inclined to consider the defendant guilty at the conclusion of the courtroom proceedings, immediately prior to deliberation. This fraction will be denoted by f_t.[44] Conversely, $1-f_t$ is the fraction of the entire pool that would be inclined to believe the defendant innocent just before deliberation begins.[45] This

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[42] The term "trial," as used in this study, is defined in note 40 *supra*.

[43] The jury pool spoken of here is not strictly the number of persons eligible to serve on the jury. It includes only those persons who would not be excused or eliminated during the *voir dire* examination for the particular prosecution being considered.

[44] The variable f_t does not involve the difficulties that usually apply to behavioral concepts. *See generally* A. KAPLAN, *supra* note 4, at 34-83. It is a statistical fraction that theoretically could be obtained by counting heads.

The only assumption necessary for this study is that an f_t value exists, at least in the abstract. It is not necessary to be able to measure an f_t value in reality. *See* text accompanying notes 76-79 *infra*.

[45] Only the slightest predilection towards conviction or acquittal is sufficient for this

characterization of the complete group of potential jurors is also sufficient to depict the petit jury because the petit jury is simply a statistical subset of these potential jurors. Thus, the single parameter, f_t, correlates the trial itself to a description of the jury's leanings before it begins deliberation (within the statistical limits involved in randomly selecting a jury from the pool at large).[46] In other words, both the entire complex of events within the trial and the personalities of the jurors are distilled into this one variable.

Because a particular jury is merely a randomly drawn subset of all the potential jurors, the probabilities of obtaining petit juries with various fractions of conviction-prone members can be easily calculated. Stated in another way, one fact is known about each juror as he leaves the jury box to begin deliberation: The probability that he believes the defendant to be guilty is exactly equal to the value of f_t. This one parameter determines the likelihood of a majority of jurors being conviction-prone, so that

$$M_{t,\,6} = \sum_{i=4}^{6} \left\{ (f_t)^i \, (1 - f_t)^{6-i} \quad \times \frac{6!}{i!\,(6-i)!} \right\}, \text{ and}$$

$$M_{t,\,12} = \sum_{i=7}^{12} \left\{ (f_t)^i \, (1 - f_t)^{12-i} \quad \times \frac{12!}{i!\,(12-i)!} \right\}.$$

$M_{t,\,6}$ and $M_{t,\,12}$ denote the probability that a majority[47] of the petit jurors that are drawn will be conviction-prone prior to deliberation. As yet, this characterization says nothing about the verdicts. The M_t formulations can be used to predict the final verdicts, however, if the deliberation process is adequately described.

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categorization. It seems unlikely, then, that there would be a sufficient number of purely neutral persons to vitiate the assumption that "guilty-prone jurors" plus "acquittal-prone jurors" equals nearly 100 percent. Moreover, the empirical evidence shows no tendency for "neutrals" to emerge. *See* studies cited notes 50-59 *infra*.

[46] Of course, attorneys are not random in selecting jurors. The statistical approach taken here is valid, however, because of the way the "pool" was defined. *See* note 43 *supra*.

[47] The strict majority ignores all the equally divided juries (where there are three and three, or six and six, favoring conviction and acquittal). These special cases will be reckoned with later. *See* note 62 *infra*.

B. *The Deliberation Process*

A verdict of guilty or innocent requires unanimity in nearly all criminal cases.[48] To predict the verdicts on the basis of M_t, a connection must be found between the initial position of the majority and the final unanimous verdict that evolves through deliberation. The *Williams* opinion refers to several studies to support the contention that deliberation subjects the jurors in the minority to coercive psychological pressures from the majority.[49] But the Court fails to draw from a large number of other studies that are much more akin to jury deliberations. These studies suggest that the initial majority will persuade the minority to capitulate in a very large number of the cases. This notion of "majority persuasion" is predicated upon many studies of small group behavior plus the relatively small amount of empirical information concerning jury behavior per se:

(1). Experiments considering group persuasion and conformity have always shown the majority to have an influence on the minority. The extent of the minority's capitulation is a function of many variables such as group cohesiveness and group purpose, but even very weak interactions among the members of the groups produce some coercive effect.[50]

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[48] *See* Williams v. Florida, 399 U.S. 78, 138-39 (1970). The Court is deciding whether unanimity is a constitutional requirement at the time of this writing. State v. Johnson, 230 So.2d 825 (La.), *prob. juris. noted*, 400 U.S. 900 (1970) (No. 5161); State v. Apodaca, 462 P.2d 691 (Ore. Ct. App. 1969), *cert. granted*, 400 U.S. 901 (1970) (No. 5338). The role of unanimity is discussed in note 70 *infra*.

[49] H. KALVEN & H. ZEISEL, THE AMERICAN JURY 462-63, 488-89 (1966); Asch, *Effects of Group Pressure Upon the Modification and Distortion of Judgments*, in READINGS IN SOCIAL PSYCHOLOGY (1952); Note, *On Instructing Deadlocked Juries*, 78 YALE L.J. 108, 110-11 (1968); C. Hawkins, Interaction and Coalition Realignments in Consensus-Seeking Groups: A Study of Experimental Jury Deliberation, 13, 146, 156, Aug. 17, 1970 (unpublished thesis on file at Library of Congress).

[50] *See* D. CARTWRIGHT & A. ZANDER, GROUP DYNAMICS 139-50 (3d ed. 1968); Kelley & Thibaut, *Experimental Studies of Group Problem Solving and Process*, in HANDBOOK OF SOCIAL PSYCHOLOGY 735, 767-68, 771-72 (G. Lindzey ed. 1954). Some of the studies that have investigated group conformity and majority rule are: Asch, *Studies of Independence and Conformity: I. A. Minority of One Against a Unanimous Majority*, 70 PSYCHOL. MONOGR., No. 9 (1956) ("stooges" giving incorrect response to perception of simple physical stimuli caused subject to change his opinion); Flament, *Processus d'Influence Sociale et Réseaux de Communication*, 6 PSYCHOL. FRANCAISE 115 (1961) (change of opinion of number of points of light seen in the experimental apparatus); Flament, *Influence Sociale et Perception*, 58 ANNÉE PSYCHOL. 377 (1958); Gerard, *The Effect of Different Dimensions of Disagreement on the Communication Process in Small Groups*, 6 HUM. RELAT. 249 (1953) (opinions of group members were studied during discussions of hypothetical legislative bills); Jenness, *Social Influences in the Change of Opinion*, 27 J. ABNORM. SOC. PSYCHOL. 279 (1932) (estimation of number of beans in a jar before and after group discussion); Luchins, *Social Influences on Perception of Complex Drawings*, 21 J. SOC. PSYCHOL. 257 (1945) ("stooges" interpretations of pictures affected views of subjects, who were children);

(2). Experiments on group pressure have dealt with both complex and simple stimuli. In some, conformity behavior has distinctly occurred where the stimulus is simple — as in choosing which of two lines is longer,[51] or determining how many lights are visible on a board.[52] Yet other studies indicate that a complex stimulus or the possibility of a complex response produces an even greater tendency to conform[53] (possibly because the mental conceptualization of the events is so malleable).[54] A criminal trial certainly provides such complexity, and consequently majority persuasion should be especially pronounced.

(3). Where some factor intrudes to produce unusual pressures towards conformity, the minority responds with a greater proclivity to change sides.[55] The charge by the judge and the jury's feeling of a social duty to reach unanimity can create just this kind of pressure[56] and further increase the prevalence of majority persuasion.

(4). Certain types of group structures seem especially conducive to uniformity phenomena. In particular, a group-centered discussion (rather than leader-centered)[57] or a group typified by participatory leadership (rather than supervisory leadership)[58] evinces

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Thorndike, *The Effect of Discussion upon the Correctness of Group Decisions, When the Factor of Majority Influence is Allowed For*, 9 J. SOC. PSYCHOL. 343 (1938) (individual opinions on social and aesthetic issues were registered before and after group discussion); Wheeler & Jordan, *Change of Individual Opinion to Accord with Group Opinion*, 24 J. ABNORM. SOC. PSYCHOL. 203 (1929) (very weak, subtle majority opinion influenced subjects' opinions on social policies).

[51] *See* Asch, *supra* note 50.

[52] *See* Flament, *Processus d'Influence Sociale et Réseaux de Communication*, 6 PSYCHOL. FRANCAISE 115 (1961).

[53] *See* Coleman, *Task Difficulty and Conformity Pressures*, 57 J. ABNORM. SOC. PSYCHOL. 120 (1958); Flament, *Ambiguté du Stimulu, Incértitude de la Résponse, et Processus d'Influence Sociale*, 59 ANNÉE PSYCHOL. 73 (1959); Luchins, *Social Influences on Perception of Complex Drawings*, 21 J. SOC. PSYCHOL. 257 (1945).

[54] *See* Flament, *Aspects Rationnels et Génétiques des Changements d'Opinions Sous Influence Sociale*, 3 PSYCHOL. FRANCAISE 186 (1958).

[55] *See* Back, *Influence Through Social Communication*, 46 J. ABNORM. SOC. PSYCHOL. 9 (1951); Festinger, *Informal Social Communication*, 57 PSYCHOL. REV. 271 (1950); Gerard, *supra* note 50.

[56] The pressure to conform can be exerted on the jury by the judge's charge. The famous *Allen* charge represents the outer limits of pressure acceptable in most courts. *See* Allen v. United States, 164 U.S. 492, 501-02 (1896). The value of such pressure must be balanced in the judge's mind against the value of letting a few jurors prohibit a final conclusion. The protection that may be afforded a defendant by such adamant holdouts was stressed in Huffman v. United States, 297 F.2d 754, 759 (5th Cir.), *cert. denied*, 370 U.S. 955 (1962) (dissenting opinion).

[57] *See* Bovard, *Group Structure and Perception*, 46 J. ABNORM. SOC. PSYCHOL. 398 (1951).

[58] *See* Preston & Heintz, *Effects of Participatory versus Supervisory Leadership on Group Judgment*, 44 J. ABNORM. SOC. PSYCHOL. 345 (1949).

greater majority persuasion. There is no empirical evidence on the matter, but it seems likely that the jury would be characterized by both of the above structural typologies.

(5). The available evidence dealing directly with the jury corroborates the hypothesis that deliberation generally obeys the rule of majority persuasion.[59]

The above studies demonstrate that majority persuasion typifies jury deliberations.[60] In fact, the study dealing specifically with the jury shows that this behavior occurs in about 97 percent of all cases.[61] In any case where majority persuasion holds true, the pre-

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[59] The small percentage of hung juries in criminal trials is itself substantial evidence of conformity behavior because it shows that unanimity was usually attained. Although there is some uncertainty about the precise number of hung juries, a figure of 5.5 percent seems to be fairly accurate. H. KALVEN & H. ZEISEL, *supra* note 14, at 57 n.2.

The only empirical evidence obtained directly from an investigation of jury behavior shows the prevalence of minority capitulation. In a sample of 225 criminal trials, the minority position on the first ballot became the ultimate verdict in only 3 percent of the cases; the jury was hung in an additional 4 percent of the cases. *See* Broeder, *The University of Chicago Jury Project*, 38 NEB. L. REV. 744, 747-48 (1959) (these figures are directly derived from Broeder's statistics). These first ballot votes were taken "immediately," *id.* at 47, so they should fairly represent the jurors' predilections just before deliberation (which is the point in time at which f_t is defined).

[60] More experimentation might be desirable to further investigate the deliberation process.

There are several points that should be mentioned about the empirical studies used to show the prevalence of majority persuasion:

(1) The studies performed outside of an actual trial context (*see* studies cited notes 49-57 *supra*) are not necessarily conclusive in jury situations. Because any number of factors could differentiate the performance of juries from other small groups, the most persuasive data must come from studies of the jury itself.

(2) In the jury study, the pole of the jurors' opinions was taken "immediately." *See* note 59 *supra*. But this point of time does not correspond exactly to that point used in the model. The model assumed that no interaction whatsoever had occurred when these predilections were ascertained (thus precluding any majority persuasion effects). In the jury study data some slight interaction seems to have occurred before the jurors were polled, although the experimenters do not describe the circumstances in any detail. *See* Broeder, *supra* note 59, at 747. A more exact study would be necessary to determine whether significant majority persuasion had occurred before balloting.

(3) Majority persuasion was observed in about 93 percent of the cases in the jury study (in 3 percent of the cases, the minority prevailed; in 4 percent the jury hanged). *See* note 59 *supra*. The hung jury cases can be brought within the scope of the model, *see* note 62 *infra*, but the few cases where the minority triumphs remain anamolies. Even where minority persuasion prevails, however, the different size juries would again yield different results since the probabilities of various juror distributions would still depend on jury size.

(4) It has been assumed that each juror has some type of predilection that provides a basis for classification. Thus, the guilty-prone plus the innocent-prone jurors total 100 percent. *See* note 45 *supra*. This assumption is not contradicted by any evidence, but it could be better corroborated.

Thus, the empirical basis is not absolutely conclusive. But it is very strong, and there are no prohibitive deficiencies in the data.

[61] *See* notes 59 *supra* & 62 *infra*.

deliberation jury (characterized by M_t) can be directly related to the final verdict.

C. *The Probability of Conviction as a Function of f_t*

In a case where majority persuasion exists, the majority position before deliberation evolves into the final, unanimous verdict. Consequently, the probabilities of conviction for the two sizes of jury, $P_{t,6}$ and $P_{t,12}$, are exactly the same as $M_{t,6}$ and $M_{t,12}$ if a correction is first made for those petit juries where the members initially are equally split between conviction and acquittal.[62]

$$P_{t,6} = \sum_{i=4}^{6} \left\{ (f_t)^i (1-f_t)^{6-i} \times \frac{6!}{i!\,(6-i)!} \right\} + \frac{6!}{2 \times 3!\,3!} (f_t)^3 (1-f_t)^3, \text{ and}$$

$$P_{t,12} = \sum_{i=7}^{12} \left\{ (f_t)^i (1-f_t)^{12-i} \times \frac{12!}{i!\,(12-i)!} \right\} + \frac{12!}{2 \times 6!\,6!} (f_t)^6 (1-f_t)^6$$

The model is complete at this point, and quantitative results can be obtained by calculating the formulas.[63]

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[62] There are two obvious ways to treat the cases where the initial jury feeling is equally divided:

(1) assume each such case ends in a hung jury; or

(2) assume half the cases become guilty verdicts and the other half acquittals.

As has been stressed throughout this study, such assumptions are of little merit in the absence of empirical verification. But even though there is scant evidence relating to the problem of initially divided juries, the first possibility can be rejected because of the results it yields. If each such case ended in a hung jury, a much greater number of hangings would be expected than actually occur. (The mathematical explanation of this fact is omitted because it becomes very involved.) Thus, the second assumption appears more likely, simply through the process of elimination. The 10 cases where there is evidence on this point agree exactly with the second assumption (five cases become acquittals, five convictions). *See* H. KALVEN & H. ZEISEL, *supra* note 14, at 488. Mathematically this assumption means

$$S_{t,6} = \frac{6!}{2 \times 3!3!} (f_t)^3 (1\text{-}f_t)^3 \text{ and}$$

$$S_{t,12} = \frac{12!}{2 \times 6!6!} (f_t)^6 (1\text{-}f_t)^6,$$

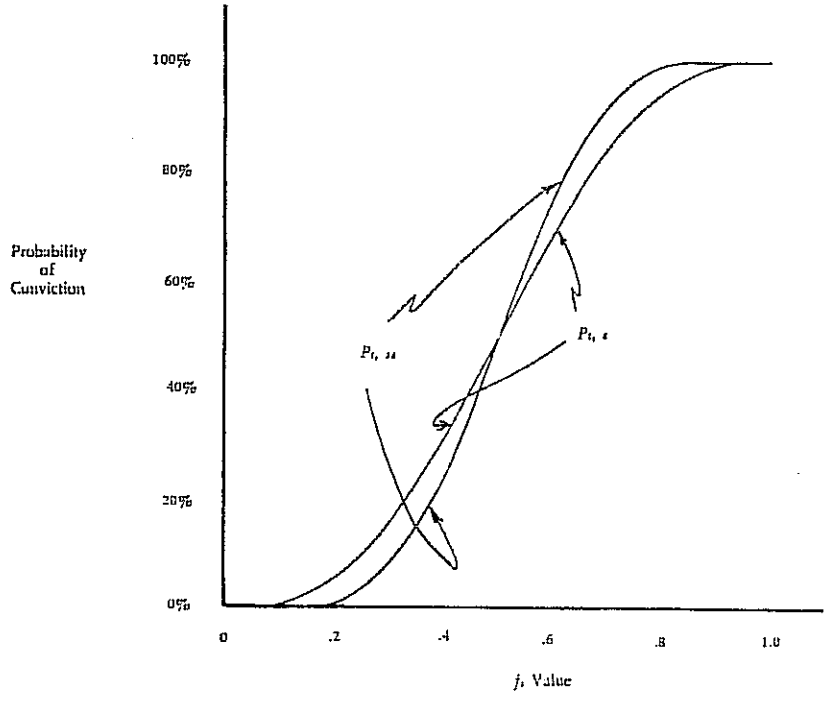
where $S_{t,6}$ and $S_{t,12}$ denote the contribution to the conviction probabilities from these special cases.

[63] The model predicts no hung juries (as a consequence of the assumption of majority persuasion and the treatment given the initially split juries, *see* note 62 *supra*), but this does not mean the results are inaccurate. A trial ending in a hung jury is not dispositive of the defendant's case and this must be reflected in the model. The assumption is that the defendant is retired if the jury hangs. The probabilities of conviction

FIGURE 1

		f_t Values										
		0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
Probability of Conviction (%)	$P_{t,\,6}$	0	1	6	16	32	50	68	84	94	99	100
	$P_{t,\,12}$	0	0	1	8	25	50	75	92	99	100	100

FIGURE 2



To use the table of probabilities, first locate the desired f_t value at the top. This parameter measures what fraction of all the potential jurors would be guilty-prone if each one were to observe the trial. The probability of convicting the defendant (expressed in percent) with either size jury is located in the respective box below

— $P_{t,\,6}$ and $P_{t,\,12}$ — actually represent the ultimate likelihood of conviction after any necessary retrials. The results of the model could be easily adjusted if a particular jurisdiction departed from this practice.

the f_t value. The graph is interpreted by first locating the f_t value on the horizontal axis. The conviction probability for either jury is found by seeing what value on the vertical axis corresponds to the desired f_t point on the appropriate curve.

It is evident from these numerical results that serious differences exist between the six- and 12-man juries. For nearly all values of f_t, the size of the jury is substantially related to the probability of conviction. If f_t is larger than .5, the defendant has a greater chance of acquittal with a six-man jury; if it is less than .5, the six-man jury increases the likelihood of conviction. For example, when f_t equals .4, use of the six-man jury increases the defendant's chances of conviction from 25 percent to 32 percent, and when f_t equals .2, his chances of conviction are six times as great (6 percent versus 1 percent).

Thus, the Court's conclusion that both juries would return the same verdict is erroneous. The number of jurors significantly affects the likelihood of conviction, and all that remains is to evaluate this functional difference in terms of the *Williams* test of constitutionality.

IV. Constitutionality of Six-Man Juries

The holding in *Williams* is predicated upon a belief that juries of six and 12 persons return the same verdicts. Because that premise is incorrect, the issue of constitutionality must be reevaluated in light of the improved analysis of jury size that has been made here. First, the functional results obtained for each particular trial, t, will be extended to a more general level. Then these extended results will be interpreted in terms of the jury's purpose and the Court's test of constitutionality.

When the number of jurors is reduced from 12 to six, the decreased representation makes the defendant's fate more a matter of the chance involved in selecting the petit jury. Consequently, the actual verdict is less likely to reflect the opinion of a "representative cross section of the community."[64] Whether the defendant is adversely affected by the reduced representation depends upon the value of f_t, but no connection has yet been made between f_t values and the defendant's original conduct. It has been emphasized, in fact, that f_t is exactly determined only after the courtroom proceedings have unfolded and the jury is prepared to begin deliberation.[65]

[64] Williams v. Florida, 399 U.S. 78, 100 (1970).

[65] *See* text accompanying notes 43-46 *supra*.

The complexity of the trial creates uncertainties in f_t that are fully eliminated only after the in-court proceedings are completed.

Nevertheless, it is justifiable to assume that each defendant may be characterized in advance of his trial by a relatively narrow range of f_t values. This assumption only means that the conduct and mental state of the accused at the time of the alleged crime are highly correlated to his probability of conviction. In other words, the uncertainties in the trial (those factors that are independent, or partially independent of the defendant's original conduct and mental state) are assumed to have only slight effects on the chances of conviction.[66] Therefore, each defendant is associated with some small, distinct range of f_t values *in advance* of the trial (the average value of this f_t range will be denoted by f_o), as well as being characterized by an f_t value after trial. From a general perspective, there are two separate groups of defendants (those with values of f_o less than .5, and those with values of f_o greater than .5) whose members are determined solely by their out-of-court behavior, without looking to the actual events that transpire in the trial. The quantitative results that have been obtained are still completely applicable — f_o simply takes the place of f_t in the equations and figures 1 and 2.

This extended formulation is sufficient to permit an evaluation of jury size in light of the purposes of the jury — an evaluation that must be made before the *Williams* test can be applied. The jury fulfills its role by interjecting community opinion into the legal process. It is the province of the jury alone to decide the question of guilt,[67] and this issue is settled ideally when the opinion of the community is translated into the verdict.[68] The role of the jury is impaired whenever the verdict becomes less representative.

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[66] No empirical proof of this assumption is offered here. The alternative — that a strong correlation fails to exist between a defendant's conduct and his chances of conviction — seems too contrary to our concept of the legal system to warrant a lengthy refutation here. If a strong correlation did not exist, it would mean that the courts adjudged the defendant's guilt on a fairly random basis. This issue lies at a very basic level of the legal process, and merits serious evaluation in a more general context than that of the present study.

[67] *See generally* Baldwin v. New York, 399 U.S. 66 (1970); Duncan v. Louisiana, 391 U.S. 145 (1968).

The issue of a judge pressuring the jury to return a verdict (rather than hang) was discussed in note 56 *supra*. Several cases have dealt with a judge's encroachment on the jury's task of returning the final verdict. For example, Starr v. United States, 153 U.S. 614 (1894), held that the judge cannot direct a verdict of conviction in a criminal trial without violating the sixth amendment.

[68] The jury should be "a body truly representative of the community." Smith v. Texas, 311 U.S. 128, 130 (1940). In other words, the actual verdict returned should be as close as possible to the typical verdict that would be returned by all the possible

In terms of the present study the interrelationship of the verdicts and the representation problem is straightforward. The f_o value of the defendant depicts the entire group of potential jurors (who presumably reflect the opinion of the community)[69] from which the petit jury is taken. f_o is determined by the opinion each potential juror would have on the question of guilt if he were to watch the trial of the defendant. If the purposes of the jury are fulfilled, the verdict must be a function only of the defendant's behavior and the representative opinions of the community. The f_o value must predict with absolute certainty whether the jury convicts or acquits.[70]

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jury subsets of the full community if each one had viewed the trial.

A difficult question is what constitutes the full community. The court has found no constitutional barrier to exclusions on the basis of citizenship, age, educational attainment, intelligence, character, or judgement. *See* Carter v. Jury Comm'n, 396 U.S. 320, 332 (1970). Also, an exemption (rather than exclusion) that effectively eliminates some class of persons from jury service is permissible. *See* Hoyt v. Florida, 368 U.S. 57 (1961) (affirmed conviction where state practice of exempting women yielded a very small proportion of women in the jury pool). As exemplified by *Hoyt*, the Court has been reluctant to impose strict cross-sectional requirements on any area other than race. This approach is not necessarily bad, since the primary interest is to secure a *verdict* representative of the community. A cross section on the basis of sex, occupation, political views, or the like is not an end in itself, but only a means to the ultimate goal of attaining representative verdicts. If one could show that women jurors tend to convict differently than men, the *Hoyt* holding would be unjustifiable.

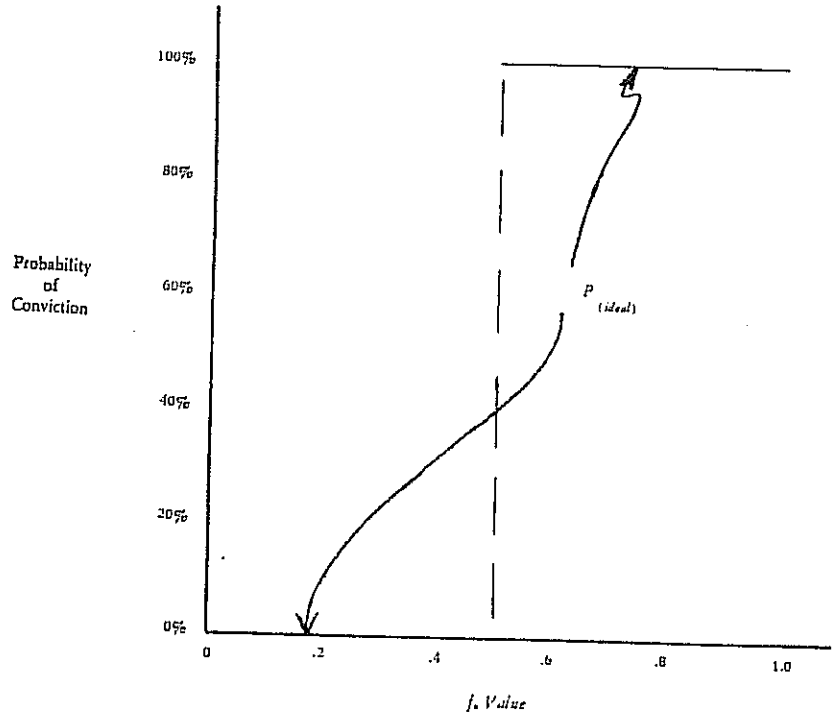
Once the problem of defining the community has been settled and the jury pool is selected, the crucial question is how to ensure that the actual verdict is representative of what would be the typical verdict. This problem is discussed in note 70 *infra*.

[69] *See* notes 43, 68 *supra*.

[70] After determining the requirements of a representative jury pool, there is still a question of what the ideal trial would be to ensure the greatest likelihood of attaining the ideal decision of the jury — a verdict typical of the verdicts that would be returned by each subset of the pool. *See* note 68 *supra*. The ideal would be to perform the trial over and over for each subset and actually take the typical verdict. This is clearly a practical impossibility, but because majority persuasion typifies jury deliberations, we can make practical approximations to the ideal. Whenever $f_o < .5$, the typical verdict would be acquittal, and the converse is true when $f_o > .5$. It is a simple consequence of statistics that f_o would be known more and more accurately as the number of persons polled is increased. Thus, with one trial alone f_o would be known more accurately if the number of jurors were increased. In terms of figure 2, the goal is to "square-off" the probability of conviction curve until the branch to the left of $f_o = .5$ lies on the bottom line where $P = 0$ (so that acquittal is certain when $f_o < .5$) and the branch to the right of $f_o = .5$ lies on the top where $P = 1$ (so that conviction is certain certain when $f_o > .5$). Instead of being reduced from 12 jurors to six, the size of the jury should be increased if its purpose is to be fulfilled. If the actual verdicts conformed to this ideal, figure 2 would appear as on page 550.

The requirement of unanimity should also be evaluated. If the jury were increased to about 25, one might guess that unanimity would be very difficult to attain. Even for the traditional jury of 12, however, the value of unanimity seems questionable. In only 7 percent of the cases studied was there any difference between the results rendered under the requirement of unanimity and what would have occurred if a majority decision had been taken as the verdict. In 3 percent of the cases, the result is especially significant because the minority eventually prevailed (the remaining 4 percent ended with hung juries). *See* Broeder, *supra* note 59, at 747-48. It is important to remember,

As f_o becomes less determinative of the verdict, the verdict is less an expression of the opinion of the community. The representative quality of the jury is impaired in exactly this manner when the jury size is reduced because such a reduction makes f_o less determinative of the final outcome of the trial.[71] The statistical fluctuations in the selection of the petit jury render the defendant's fate more a matter



however, that the data on majority persuasion in the deliberation process is not conclusive. *See* note 60 *supra*. One could discuss the value of unanimity endlessly, but the absence of empirical support would render such an analysis relatively worthless.

[71] The discussion here emphasizes the harmful effects of the six-man jury that befall those defendants for whom f_o is less than .5. If the 12-man jury is retained this group would have less chance of conviction, although the other group of defendants (those with an f_o greater than .5) would be subjected to a higher chance of conviction. This latter group, however, does not have a legitimate argument against the 12-man jury. The mere fact that a jury of six would provide a greater chance of escaping conviction is not meaningful by itself. A defendant seeking six jurors (since he believes his f_o value to be greater than .5) would be basing his argument on a circumvention of the role of the jury, not a fulfilment of its role. The jury should transform the opinion of the community into the final verdict, but the smaller jury would reduce such a defendant's chances of conviction only because it is less representative of the community and thus more subject to deviations from the ideal verdict. The group of defendants with an f_o value less than .5 claims the right to 12 jurors on the grounds that their fate will more likely be a true reflection of the community opinion and consequently a greater fulfillment of the purposes of the jury trial.

of chance — and less a product of his behavior and the community's values — as the number of jurors is lowered.

Thus, a change to six jurors from the traditional number of 12 derogates from the goals of a trial by jury. The constitutionality of the six-man jury depends upon how this fact fits into the test laid down in *Williams*. This test requires a combined evaluation of history, purpose, and function. It looks

> to other than purely historical considerations to determine which features of the jury system, as it existed at common law, were preserved in the Constitution. The relevant inquiry . . . [is] the function which the particular feature [that is, the historical feature, which here of course is the requirement of 12 jurors] performs and its relation to the purposes of the jury trial.[72]

The *Williams* test clearly specifies that the operational significance of size is critical to the constitutionality of the six-man jury. There is no indication, however, of the weight that should be accorded the functional difference between the six-man jury and the traditional jury. Thus, one reading would preserve the historical feature when its loss would detract from the purposes of the jury in any way whatsoever. This reading of the test would clearly mean that the six-man jury is unconstitutional. A second interpretation would require some "substantial" impairment of these purposes before the historical precedent would become a constitutional requirement. If the latter reading is taken, the effect required to show a substantial departure from the performance of the traditional jury is as yet unknown. It has been shown, however, that six jurors never fulfill the purpose of the jury as well as the 12 required at common law. Over a large portion of the f_o range, the six-man jury significantly changes the probability of conviction and this change invariably constitutes a derogation from the ideal, representative verdict.[73] Because of the vagueness of the Court's stan-

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[72] 399 U.S. at 99-100.

[73] A completely rigorous assessment of substantiality requires knowledge of the relative number of defendants corresponding to each f_o value. Otherwise, it cannot be shown how many persons suffer a particular degree of prejudice. An accurate experiment measuring f_o by dealing directly with all available jurors would be extremely complex, if possible at all. An excellent surrogate is to study the predilections of the petit jurors, and then infer the relative frequency of various f_o values. This procedure is very accurate if a fairly large number of cases is used. The available data does not completely subdivide the juror predilections, but it is sufficiently refined to allow a few critical conclusions. *See* H. KALVEN & H. ZEISEL, *supra* note 14, at 487. Most importantly, it can be inferred from the first ballot votes (the measure of the predilections of the petit jurors) that a significant fraction of defendants are scattered through the range where f_o is greater than .0, but less than .5. Thus, the possibility of prejudice

dard, it is still not clear whether these differences are substantial, but a positive answer seems by far the most logical. If even greater differences were required — differences such as might occur with a jury of two or three persons — the correlaton between representative verdicts and actual verdicts would be quite low. f_o would determine the verdict with relatively little certainty, although ideally it should do so with absolute certainty. The six-man jury lies midway between this kind of total frustration and the performance of the traditional jury — an area where the label of substantial seems perfectly fitting.

Thus, the *Williams* test was misapplied. If the Court had abided by the test it laid down, the six-man jury would have been declared unconstitutional. Even if the requirement of substantiality is read into the test, the smaller jury seems to be constitutionally proscribed.

It is worthwhile at this point to comment on another important consequence of the Court's test. The decision to use history as a guideline for a functional analysis involves a great deal of discretion and subjectivity on the part of the Justices.[74] And once laid down, the Court's test essentially forecloses arguments from analogous areas of the law. The constitutionality of the six-man jury must be resolved within the rubric of the *Williams* test, and other constitutional rulings are largely irrelevant. Only if *Williams* had provided no other test in the place of a purely historical approach

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to a defendant in this range is not just an abstract possibility, but a real and inevitable consequence of using the six-man jury.

[74] When a constitutional claim is raised, there is no guidance in the Constitution to the type of test that should be applied. Consequently, the Justices have virtually unrestrained latitude in choosing the appropriate test for the occasion. For example, Chief Justice Marshall often used a strictly textual type of constitutional interpretation; he would argue that a logical reading of the words alone demanded his conclusion. But this type of interpretation is as ultimately ad hoc as any other. In Marbury v. Madison, 5 U.S. (1 Cranch) 137 (1803), Chief Justice Marshall argued that if the Supreme Court's appellate and original jurisdiction were not mutually exclusive, part of article III would be meaningless. But he explicitly rejected this "self-evident" principle when the occasion suited him. *See* Cohens v. Virginia, 19 U.S. (6 Wheat.) 264, 297-99 (1821).

Another example is the variety of tests under the due process clause of the 14th amendment. In certain circumstances a statute will be upheld against a challenge under the due process clause if the state can show any debatable basis for its value. *See, e.g.*, Ferguson v. Skrupa, 372 U.S. 726 (1963). In other cases the state must show a compelling interest to justify its regulations. *See, e.g.*, Griswold v. Connecticut, 381 U.S. 479 (1965). Obviously these differences are read into the Constitution by the judges alone. The 14th amendment provides only one standard, not an entire array of standards that vary according to the kind of case being decided.

would other aspects of constitutional law provide the criteria for deciding the case.[75]

There is one question, however, that falls outside the Court's test, and that is whether a defendant must show actual harm in his own case to secure reversal. In some cases, the Court has looked to the facts for an indication of some actual prejudice to the petitioner before reversing his conviction.[76] In others, the conviction has been examined in the abstract and reversed without proof of actual prejudice if the possibility of prejudice seemed sufficient.[77] The difficulty in making a persuasive showing of actual prejudice is a factor in the Court's decision to waive the burden of such a showing.[78] A defendant challenging the six-man jury has a valid claim of prejudice only if his f_o value is less than .5. In practice a large percentage of defendants would have f_o values less than .5,[79] and consequently the chances of prejudice are significant. But because of the complexity of finding what f_o value exists in a particular case, a defendant probably could not show convincingly that his value was less than .5. In view of the high probability of prejudice and the practical difficulties of proving prejudice in a given case, a defendant convicted by a six-man jury should not have to show that his f_o value was less than .5 to obtain reversal. The requirement of showing actual harm would be an unrealistic burden to thrust on the defendant in this situation.

V. Conclusion

Williams provides the germ for a wide range of comments, but the most salient question is the functional importance of jury size. A functional analysis is clearly relevant to an evaluation of the potential impact of the case, and is equally crucial to the Court's test of constitutionality. The Court concluded that the six-man jury would return the same verdicts as the traditional jury, but this conclusion is unsupportable. A thorough analysis shows that the problem of diminished representation requires a much more careful treatment than that accorded it by the Court. A proper treatment of

[75] The jury representation cases would be quite relevant under these circumstances. *See* note 68 *supra*.

[76] *See, e.g.*, Stroble v. California, 343 U.S. 181 (1952).

[77] *See, e.g.*, Rideau v. Louisiana, 373 U.S. 723 (1963).

[78] *See* Estes v. Texas, 381 U.S. 532, 578-80 (1965), (Warren, C.J., concurring).

[79] This can be inferred from the existence of a significant number of trials where a substantial portion of the petit jury was innocent-prone at the first ballot. *See* H. KALVEN & H. ZEISEL, *supra* note 4, at 487; *cf.* note 73 *supra*.

representation, in conjunction with a description of the deliberation process, shows that the six-man jury convicts different persons. This difference is not a meaningless or arbitrary distinction, but reflects a substantial derogation from the performance of the 12-man jury. The test laid down in *Williams* indicates that the reduced jury is unconstitutional if the smaller size impairs its performance. Consequently, a correct application of the Court's test would hold that a jury of six persons is unconstitutional.

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