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LA THÈSE A ÉTÉ
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THE EFFECT OF POLYGRAPH EVIDENCE ON
MOCK JURY DECISION-MAKING

by

Alan E. Markwart

Thesis submitted to the School of Graduate Studies and Research
of the University of Ottawa
in partial fulfillment of the requirements
for the degree of Master of Arts in Criminology.

1982

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CURRICULUM STUDORIUM

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INTRODUCTION

The appropriateness of admitting the results of polygraph-- or "lie detector"--tests into criminal court evidence is a much debated legal issue. This is particularly true in the United States where many states have fairly recently permitted admission of this evidence in the criminal courts when there is an agreement by the defence and prosecution to do so. However, when objections are raised by either the defence or the prosecution the results of polygraph tests have not generally been permitted to be entered into evidence by the criminal courts, this being attributable to varying arguments against its admissibility.

While there are many objections to admitting this type of evidence cited in the literature and court decisions, the two primary objections involve the apparent insufficient validity and reliability of the test and the fear that such evidence may unduly affect jury decision-making. This latter objection reflects a concern that juries will be so impressed by the scientific value of this evidence that it would become the sole or primary determinant of the eventual outcome; thus the jury system would be usurped and replaced by a "trial by polygraph". While these two primary objections appear separate, they are not: the demands for validity and reliability of polygraph testing--which many view as extraordinary demands--appear to be predicated on the assumption that juries will be overwhelmed by such evidence.

To shed some light on this issue, a simulated jury experiment was designed to assess the impact of polygraph evidence on jury decision

making. This involved having a number of deliberating juries, comprised of community volunteers, hearing four criminal trial cases: a control case which was derived from the evidence of an actual case, two experimental cases which were the same as the control case with the exception that polygraph evidence that was either favourable or unfavourable to the accused's case was added, and a comparison case which again was the same as the control case but had character witness testimony added. By comparing the results of the experimental cases with the control case this design enabled a measure of the impact of the addition of favourable or unfavourable polygraph evidence on jury decision-making, while a comparison of the results of the experimental and comparison cases enabled a measure of the impact of polygraph evidence relative to other testimony added to provide the jury with similar information about the accused, i.e. the accused's credibility.

This study should provide valuable information to legal scholars and practitioners about a highly contested and heretofore little researched legal issue. Further, it adds to the existing body of knowledge about issues in mock jury research.

The first chapter of this thesis is concerned with a review of criminal court decisions and legal literature regarding the admissibility of polygraph evidence, a brief review of the scientific literature on the validity and reliability of the polygraph test, and a thorough review of previous studies of the impact of polygraph evidence on jury decision-making.

The second chapter operationally defines "undue" jury influence and describes the method employed in the experiment, including efforts taken

to maximize generalizability, the sampling method, descriptions of the case and questionnaire materials, and experimental procedures.

Subsequent to this a description and discussion of the results of the experiment is presented. Due to the large amount of data presented here the results have, for the convenience of the reader and to assist in better comprehension, been divided into two separate chapters. The first of these chapters mostly concerns a description of the juries, an analysis of the social characteristics of the jurors, decision results, the relationship between social characteristics and decision results, and an analysis of the effects of the deliberation process on juror final decisions. The second of these chapters concerns juror responses to the evidence, this including deliberation discussions of the evidence, ratings of the evidence, and an analysis of expressed juror attitudes and their relationship to decisions made.

A summary, discussion of the conclusions and suggestions for further research are presented in the final chapter, while the appendices present the case materials and questionnaires utilized, as well as some secondary tables of data obtained.

I

REVIEW OF THE LITERATURE

1. The Admissibility of Polygraph Evidence in Criminal Trials

"If ever there is devised a psychological test for the valuation of witnesses, the law will run to meet it." (Wigmore, 1923: 875).

It is ironic that in the same year that John Wigmore, a respected legal scholar of Anglo-American evidence law, made this statement the first court test of the admissibility of polygraph ("lie-detector") evidence took place. In the often-cited American case of Frye v. the U.S. (1923) the court did not run to meet the results of Marston's systolic blood pressure test, but rejected its admissibility on the grounds that the technique had not yet gained sufficient standing and recognition in the scientific community. Since that time significant advances have been made in instrumentation, questioning techniques and demonstrations of the validity and reliability of the polygraph technique.¹ Accompanying this sophistication there has been an increased willingness by the courts to admit this type of testimony into criminal trial evidence.

Polygraph test results have been admitted into criminal court evidence in several countries, including Yugoslavia and Switzerland (Abrams, 1977), Japan (Fukimoto, 1980; Takahashi, 1976), Poland (Waltos and Widacki, 1980; Widacki and Romig, 1975) and is used in a pre-trial stipulation

¹ For descriptions of the present status of polygraphy methods see Reid and Inbau (1977) or Abrams (1977).

(agreement) procedure in Israel (Cohen, 1976). In Canada, in a British Columbia Supreme Court decision (R. v. Wong, 1977) it has been admitted directly into testimony, though in a subsequent appeal of this case on a different legal point the appeal court described the admission of the polygraph evidence as improper (Bradley, 1979). In doing so, the B.C. Court of Appeal referred to the case of Phillion v. the Queen (1977).

In this case the Canadian Supreme Court rejected it on the primary grounds that the manner in which the polygraph evidence was attempted to be introduced was hearsay in nature. However, the Supreme Court appears to have left the door open for future consideration where an attempt may be made to admit this type of testimony under different circumstances.² Admission of this type of evidence has also been rejected in a quasi-judicial setting, a Royal Commission inquiry (Morand, 1976). However, indirect admission, as part of the evidence of a psychiatrist, is permitted by case law (R. v. Phillion, 1973) and this procedure is utilized occasionally in Canadian courts (Bradford, 1979).

The use of polygraph evidence in the criminal courts of Canada is very limited and does not represent a major legal issue. However, quite a different situation exists in the United States. There, the admissibility of such evidence has been the subject of 427 reported court decisions (mostly criminal court) between 1923 and 1978 (Ansley, 1978), and this is considered an important legal issue (Abell, 1977). It is admitted into

² For discussions of this decision, see Tennenhouse (1978) and Bradley (1979). For lower court decisions on this case, see R. v. Phillion (1973) and R. v. Phillion (1975).

testimony relatively frequently and all signs indicate that polygraph evidence may be moving toward more general judicial acceptance (Samakow, 1979; Waltz, 1975).

Since the Frye decision there has been an increasing willingness on the part of U.S. courts to admit polygraph test results into testimony.³ The case of People v. Houser (1948) was the first state appellate court decision permitting the admission of this evidence by means of a stipulation procedure. Such a procedure involves a written agreement between the defence and prosecution to have the accused, with his/her consent, undergo polygraph testing and admit the results into evidence whether they favour the accused or not. This is subject to subsequent determinations by the judge of examiner competence and proper conditions of testing, cross-examination by the unfavoured party, and cautionary remarks by the judge to the jury, if one is employed.⁴ Since Houser, most states have ruled on the issue of stipulated admissibility: currently, twenty states permit admission by this procedure (Lykken, 1981) while seven states have not decided the issue (Spade, 1979). In fact, in one U.S. jurisdiction, the prosecution is obliged to stipulate admission of this evidence unless it can articulate justifiable reasons for not doing so (Doran, 1981). There is an apparent recent trend to favour admission of polygraph evidence; of twenty-three states that adjudicated this issue between 1975 and 1977,

³ For thorough reviews of the issues and U.S. court decisions, see; Rydstrom (1979), Spade (1979), Squires (1978), Abell (1977), Abrams (1977) or Reid and Inbau (1977). Ansley (1978) also provides summaries of all reported decisions regarding the polygraph between 1923 and 1978; this is updated by the periodical, The Polygraph Law Reporter.

⁴ For the generally accepted rules of stipulated admissibility, see People v. Valdez (1962).

sixteen permitted admission with stipulated consent (Spade, 1979). In the Federal courts, three circuits have permitted admission by stipulation, one has rejected it, and seven have not decided the issue (Spade, 1979). This kind of quasi-acceptable status of polygraph evidence in many U.S. courts is seen by some as a prelude to more general admissibility in future (e.g., Spade, 1979; Samakow, 1979; Abrams, 1977; Bailey and Rothblatt, 1977; Reid and Inbau, 1977; Waltz, 1975).

While the courts have shown a readiness to accept admission by stipulation, only a few courts have permitted admission over objection by the prosecution (e.g. U.S. v. Ridling, 1972; U.S. v. Zeiger, 1972), but these decisions have been quickly overturned on appeal. These decisions (see Abell, 1977:31) do appear to reflect a liberalization of attitudes toward polygraph evidence and this may presage a more general liberalization. Nevertheless, polygraph results are still only rarely admitted into evidence over objection by the defence or prosecution.

The issue of the more general admissibility of polygraph test results has evoked a great deal of scholarly and legal argument, causing one observer to characterize this debate as the "War of the Polygraph" (Spade, 1979). Many favour admission (e.g. Doran, 1981; Matte, 1980; Bradley, 1979; Silverburg, 1979; Jones, 1979; Spade, 1979; Riley, 1978; Abrams, 1977; Bailey and Rothblatt, 1977; Reid and Inbau, 1977; Jacobs, 1976; Sevilla, 1975; Tarlow, 1975; O'Connor, 1974; Jennings, 1974; Richardson, 1974; Altarescu, 1973; Landers, 1973; Note, 1973a; Note, 1973b; Wicker, 1972; McCormick, 1972; Harmon, 1968; Note, 1968; Wall, 1965; Kaplan, 1964;

Pfaff, 1964; Ellis, 1962), but many present cogent arguments against admission (e.g. Lykken, 1981, 1978, 1975, 1974; Greenspan, 1980; Purich, 1979; Abell, 1977; Morand, 1976; Forkosch, 1975; McLean, 1975; Roper, 1975; Radeck, 1972; Kuipers, 1971; Burkey, 1965; Laymon, 1965; Skolnick, 1961; Boyle, 1959; Koffler, 1957; Silving, 1956; Levitt, 1955; Forkosch, 1939).

The arguments against admission of this type of testimony are manifold. Undoubtedly, insufficient demonstration of the polygraph's validity and reliability is the most frequently cited reason for exclusion of this type of evidence.⁵ However, several other collateral legal issues have also been raised. These include: misleading the jury or usurping its function, problems with a defence-appointed examiner, attenuation of the trial process, conflicting polygraph evidence leading to a "battle of experts", breaching an ultimate issue (the credibility of the accused), the hearsay nature of the evidence, and the violation of the privilege against self-incrimination (Abell, 1977). Some opponents of the polygraph have suggested that arguments based on insufficient validity and reliability are doomed to failure and that these collateral issues should be emphasized (e.g. Forkosch, 1975; Radeck, 1972).

Foremost among these collateral issues is the expressed fear that polygraph evidence may have an undue influence on the decision-making of jurors (e.g. Quon, 1981; Lykken, 1981; Greenspan, 1979; Jones, 1979; Spade, 1979; Abell, 1977; Lempert and Saltzburg, 1976; Roper, 1975; Forkosch, 1975; McLean, 1975; Garvey, 1973; Note, 1973a; Koffler, 1957). Richardson

⁵ For critiques of polygraphy methods, see Lykken (1981, 1978, 1974), Morland (1976), Moss (1965), Skolnick (1961).

(1974) and McCormick (1972), two respected experts on evidence law, have suggested that this is the real, unarticulated reason behind the court's rejection of the polygraph. It is significant in this regard to note that the same court jurisdiction, the District of Columbia Court of Appeals, which established the Frye precedent recently rejected the admission of polygraph evidence again. On this occasion, however, the substantive reason given by the court was not insufficient validity and reliability, but rather the "undue deference" that the jury might accord such evidence (Smith v. U.S., 1978).

There appear then to be two primary reasons for exclusion of this type of evidence: first, concern about whether the test is sufficiently valid and reliable, and second, the concern that such evidence might unduly influence jury decision-making. While these two concerns appear to be distinct and separate issues, they are not as separate as they appear at first blush. They are, in fact, inextricably intertwined.

2. The Validity and Reliability of the Polygraph

The validity and reliability of polygraph testing is, of course, pertinent to any consideration of the court admissibility of such evidence. Evidence is introduced to influence the decision-making of the jury. If a test is neither valid nor reliable the influence on the jury decision-making of testimony based on such a test could be considered to be an undue influence.

Abrams (1973, 1977) has provided two reviews of the literature on the validity and reliability of polygraph testing. In both reviews he

he concludes that field studies of polygraph validity point to an accuracy of about 90%, although one study reports a result as low as 63% and the more well-controlled studies report results in the 80%-90% range.⁶ These studies indicate that there may be considerable variation in the accuracy of diagnoses according to the degree of examiner experience, more experienced examiners achieving better results. Field studies involve the use of a subject population consisting of actual cases. These studies suffer somewhat insofar as it is difficult to establish the "ground truth" -- whether, in fact, the subject was truthful or deceptive. In such studies the ground truth is established on the basis of (a) subsequent confession of the actually guilty party, (b) a decision based on case materials by a panel of legal experts, or (c) court outcomes. A second problem encountered in such studies is the difficulty in determining the grounds on which the examiner arrives at his decisions. He has at his disposal chart readings of the physiological parameters and it is on this that he is expected to base his decision. However, he also has the opportunity to observe behavioural cues and to read case materials (e.g. police briefs), both of which could influence his decision. Some studies attempt to control for this by having separate examiners blind rate only the charts from verified cases and render decisions. Such blind raters do achieve a somewhat lesser degree of accuracy, suggesting that behavioural cues and knowledge of the case do contribute somewhat to accuracy. The accuracy achieved in these

⁶ Recent examples of field studies include: Bersh (1969), 87.5% accuracy, or Barland (1975), 86.7%, 78.7% and 89.7% accuracy on different criteria.

studies is still fairly high however, most above 85%, but one as low as 63%.⁷

In addition to field studies, there are laboratory studies. These studies most often utilize a paradigm in which some subjects participate in a mock crime and are offered a monetary incentive to "beat" subsequent polygraph testing by an examiner unaware of his actual guilt or innocence. While these studies eliminate the problem of correctly establishing the ground truth they are criticized by polygraphists on the plausible grounds that such subjects have little real investment in the situation and thus are unlikely to elicit marked deviations in the physiological parameters measured. Still, in the more recent studies reported by Abrams (1977), most indicate an accuracy of 80% or greater, though one reports a result of 60%-70% accuracy.

Reliability in polygraph testing is measured by obtaining inter-rater decision concurrence based on chart interpretation alone or by having the same examiner decide the same case after a considerable (several months) interval. In the review by Abrams (1977), field studies have reported a reliability ranging from 77% to 89%, averaging 84%, while laboratory studies have yielded reliability coefficients ranging from 72% to 96%, averaging 88%.

There are also some recent studies not reported by Abrams. Raskin et al. (1977) devised a numeric scoring method for chart interpretation,

⁷ Recent samples of such blind rater studies include: Horvath and Reid (1971), 87.8% accuracy; Hunter and Ash (1973), 86% accuracy; Slowick and Buckley (1975), 87.2% accuracy; Wicklander and Hunter (1975), 88.3% accuracy; and Horvath (1977), 63% accuracy.

and with this method 100% decision agreement was achieved with two examiners deciding sixty cases on charts alone. In another experiment reported in the same article, twenty-five polygraph examiners independently evaluated the polygraph charts of sixteen verified cases. Results indicated 85% agreement in decisions, and an accuracy of 79% correct decisions, 13% inconclusive results, and 8% errors. Excluding inconclusive results⁸, an accuracy of 90% was achieved, while those examiners who utilized numeric scoring methods achieved significantly better accuracy (99%) than those who did not (88%).

Podlesny and Raskin (1978) utilized three different questioning techniques on sixty subjects participating in a mock crime paradigm. Charts were rated blind by means of a numeric scoring method. Accuracies achieved for the three questioning techniques were 94%, 83% and 89%. One hundred percent agreement in the decisions of two independent examiners was achieved.

Raskin and Hare (1978) utilized a mock crime paradigm with a sample of 48 prisoners, half of whom had been diagnosed psychopaths. Results indicated 88% correct decisions, 8% inconclusive results and 4% incorrect decisions (96% correct decisions, excluding inconclusives). In addition, psychopaths were as easily detected in lying or truth-telling as non-psychopaths, this undermining the common belief that a "real con" can "beat" a polygraph test. In a follow-up of this study the same

⁸ Some consider the exclusion of inconclusive results in calculating accuracy questionable (e.g. Moss, 1965). Polygraphists argue, however, that this is acceptable since inconclusive results have no practical application (e.g. Reid and Inbau, 1977).

examiner re-scored and re-decided the cases on charts alone after a two year interval, producing 95% correct decisions (excluding inconclusives) and no disagreements with the previous decisions (Raskin, 1978).

It is significant in these recent studies that when the test erred the errors were predominantly false positive -- the conclusion that the subject was deceptive when in fact he was telling the truth (Raskin, 1978).

Lykken (1975), perhaps the most outspoken and severest critic of the polygraph technique, has conceded that the polygraph is one of the most valid psychological tools we possess and that, in the hands of a capable examiner, the test can achieve an accuracy of 90% (Raskin, 1978).

The results of research, particularly that conducted within the past ten years, indicates that this is a test which, in the hands of well-trained and experienced examiners using appropriate questioning techniques and a numeric scoring method for chart interpretation, can probably achieve a validity and reliability of greater than 80%, and possibly more than 90%. However, demonstration that a test may be sufficiently valid and reliable to be of some scientific merit does not necessarily mean that it is sufficiently valid and reliable to apply its results. Considerations of the sufficiency of that validity and reliability are influenced by social policy considerations; the degree of validity and reliability demanded of a test will vary with the apparent social import of its applications.

3. Jury Influence Arguments

The issue regarding the effect of this type of evidence on juries reflects a concern about the possible uncritical acceptance of the polygraph results. The scientific trappings of the polygraph test and its implied technical and scientific sophistication would be impressive and could, the argument goes, be seen as providing the "answer" to the primary issue with which the jury is concerned, the credibility of the accused. Thus the traditional function of the jury would be usurped, resulting in a "trial by polygraph" (e.g., see Lykken, 1981; Abell, 1977; Forkosch, 1975; Radeck, 1972).

This argument is, in part, predicated on the assumption that North Americans have an abiding faith in machines:

"Our society, with its deep respect for limitless technology, tends to believe that machines do not lie, and to listen to a machine more than the opinion of an expert." (Radeck, 1972:295)

The argument further assumes that this faith will lead to a belief that polygraph results are infallible, as expressed in a recent U.S. court decision:

"A foremost concern is the effect such evidence will have on juries. . . . when polygraph evidence is offered in evidence at trial, it is likely to be shrouded with an aura of infallibility, akin to the ancient oracle of Delphi" (U.S. v. Alexander, 1975:168).

Similar concerns have been expressed in other U.S. court decisions (Smith v. U.S., 1978; Commonwealth v. Juvenile, 1974, dissenting opinion; U.S. v. Wilson, 1973; U.S. v. DeBetham, 1972; People v. Leone,

1972; People v. Sinclair, 1970; U.S. v. Stromberg, 1959; People v. Davis, 1955) as well as a Canadian decision (R. v. Phillion, 1973).

Such arguments have led several commentators (Lykken, 1981; Samakow, 1979, Bailey and Rothblat, 1977; Richardson, 1974; Note, 1973a; McCormick, 1972; Kuipers, 1971; Kaplan, 1964; Ellis, 1962) to note that the U.S. courts seem to have applied more stringent standards of validity and reliability for polygraph results than they have for other types of evidence. For example, acceptable evidence such as voice print identification (Note, 1973a), ballistics tests (Wall, 1965), handwriting identification (Lykken, 1981) and radar (Time 1979) are of uncertain reliability, while psychiatric diagnosis (e.g. Rosenham, 1973; Jackson, 1969; Temerlin, 1968; Ash, 1949) and eye-witness testimony (Loftus, 1981, 1978; Wells, 1978; Buckout, 1974) are notoriously unreliable, and even fingerprint identification and ballistics testing are not infallible (Lykken, 1981). The reason for this differential application of standards appears to be the possibility of uncritical acceptance of polygraph results by the jury. This position is clearly reflected in the logic of a Canadian decision rejecting admission of this evidence:

"...but one main reason for the exclusion of this kind of evidence must remain, and that is when its reception would not assist and might mislead. Where a jury, by reason of the technicality of the evidence might be tempted blindly to accept the witness' opinion, then it is important that the witness' opinion be free from all possibility of error." (emphasis added) (R. v. Phillion, 1973:563)

Thus the current requirement seems to be not just substantial validity and reliability, but infallibility (Kuipers, 1971; Kaplan, 1964) or, at the least, a much higher degree of accuracy than other forms of testimony (Radeck, 1972; McCormick, 1972).

Proponents of the polygraph (e.g. Sevilla, 1975; Tarlow, 1975) and some courts (e.g. U.S. v. Ridling, 1972; R. v. Wong, 1977) argue that the polygraph test is not presented in court as infallible and that, with cross-examination and proper direction from a judge not to view the evidence as conclusive, results would be critically assessed by jurors and not have the undesired undue influence. However, even some of those who view admission favourably concede that the danger is appreciable (McCormick, 1972) or that such evidence could have a disproportionate amount of influence on trial outcomes (Harman, 1968; Note, 1968). One advocate (Altarescu, 1973), wary of this potential undue influence, has even suggested limiting its use only to non-jury trials and, in fact, one U.S. court jurisdiction, Louisiana, has limited admission to non-jury trials because of this danger (State v. Catanese, 1978).

Since the demand for infallibility or near infallibility of polygraph test results is predicated on the belief that such results will have an undue or overwhelming influence on juries, the influence that such evidence has on jury decisions becomes a pertinent area of investigation. If juries invariably decide on the direction indicated by the polygraph evidence then it could be assumed that the influence of such evidence may be undue and that juries actually view this evidence as infallible. In

such an event the demands for infallibility of the test could be considered justified. However, if such a tendency does not exist, then it could be assumed that juries view this evidence critically in relationship to all the other evidence. In such an event the demands for extraordinary validity and reliability would be logically untenable.

4. The Influence of Polygraph Evidence on Jury Decisions

There is a relatively scant amount of information available concerning the impact polygraph evidence has on jury decision-making. There are, however, three available types of studies dealing with this subject. The first type seeks to determine the impact of this evidence by examining the results of actual jury cases where such evidence has been admitted. In such cases a jury that returns a verdict that is consistent with the findings of the polygraph (i.e. truth-telling equals acquittal, deception equals conviction) could be considered to be influenced, though not necessarily unduly so because the jury may have arrived at that decision based on other evidence. However, a jury which returns a verdict contrary to the findings of the polygraph is considered to provide clear and obvious proof that the jury was not overwhelmed by the evidence. There is not an existing tally of the outcomes of a sample of jury trials where polygraph evidence has been admitted. However, Tarlow (1975) cites some U.S. cases where contrary results occurred. To these must be added the only two reported Canadian cases where polygraph evidence was admitted, once directly (R. v. Wong, 1977), and in the other via a psychiatrist (R. v.

Phillion, 1973). In both cases the polygraph results indicated the accused was telling the truth, but the juries returned guilty verdicts. These few cases clearly suggest that at least some juries have not been overwhelmed or unduly influenced by this type of evidence.

The second type of study involves interview follow-ups of jurors exposed to polygraph evidence in actual trials. There have been two such studies. In both cases the jury returned a verdict consistent with the findings of the polygraph. In the first, Forkosch (1939) questioned ten jurors who had deliberated in the first U.S. case (in 1938) in which polygraph evidence was admitted. Although none of these jurors indicated his or her decision was based solely on the polygraph results, five were so impressed by the apparent scientific value of the evidence that they accepted it uncritically, six felt it demonstrated conclusive proof, and four indicated they would accept such evidence as conclusive if they served as jurors again. Forkosch concludes that the polygraph evidence in this case had an undue influence on these jurors.

In a more recent study, Barnett (1973) interviewed eight of twelve jurors who indicated that they were impressed by the polygraph expert's testimony and were convinced the test was valid. They were not, however, able to decide what weight they should attach to this testimony and thus put it aside, arriving at their decision on the basis of other evidence. They also indicated that had the case been more ambiguous the polygraph results would have been sufficient to raise a reasonable doubt. Barnett concludes that the polygraph evidence in this case did not have an undue influence on these jurors.

In the first of these studies there is a consistency between the jurors' behaviour and their report of the influence of the evidence -- their decision concurred with the findings of the polygraph test and they report significant influence by the evidence. In the second study, however, significant influence by the polygraph evidence cannot be discounted even though these jurors reported no influence. It is questionable whether jurors could completely put aside such evidence (or any evidence) without some influence. Further, while jurors may discuss evidence only a little and report little or no influence, their decisions may still be significantly affected by such evidence (e.g., see Markwart and Lynch, 1979). Finally, the differences in the results of these two studies may in part be attributable to differences in the impressionability of the public -- prospective jurors -- during different time periods. Arguably, a less scientifically informed and less skeptical jury exposed to a less well-known scientific technique in 1938 could be more impressed by such evidence than would a jury in 1973 that could likely be composed of members that are more scientifically informed and have at least some familiarity with the polygraph technique.

The third type of studies are quasi-experimental or experimental ones which attempt to assess the impact of polygraph evidence on jury decisions in a simulated setting. There have been five such studies. In the first, Koffler (1957), a law professor, gave twenty law students a brief summary of the facts of a case and asked them to render a decision. Since there was only fragmentary evidence pointing to the guilt of the accused all the students returned not guilty verdicts. The same students

were asked, however, to render two more decisions about the same case, with polygraph evidence unfavourable to the accused added. In the first experimental condition the polygraph test was characterized at 85% accurate, 14.5% inconclusive and 0.5% inaccurate, while in the second it was characterized as 99.5% accurate and 0.5% inaccurate. In the first experimental condition eight of the twenty students changed their verdicts to guilty, while in the second seventeen changed to guilty. Koffler concludes from these results that the polygraph evidence acted as a substitute for proof of guilt and that an innocent accused may be found guilty on the basis of polygraph evidence alone.

Koffler's study has a number of characteristics which tend to invalidate his conclusions. First, students at law are normally excluded from juries. Thus the results are not representative of the decisions that would be rendered by a normal jury. Second, the decisions were rendered individually without the benefit of deliberation, an essential ingredient of jury decisions. Since some research indicates that deliberating and non-deliberating simulated juries arrive at significantly different decisions (Davis et al., 1977), the exclusion of deliberation questions the applicability of the results to normal jury decisions. Third, the students were asked to decide the same case three times, introducing a variable other than polygraph evidence -- the possibility that prior decisions could have influenced succeeding ones. The effect of this variable has not been studied in simulated jury situations. Fourth, the students were not given a caution by the judge, as they would in a normal jury trial, not to view the evidence as conclusive, excluding another

important characteristic of normal jury decision-making. Finally, the characterization of the accuracy of the polygraph was extraordinary, approaching infallibility, and thus invites a very strong effect on decisions. The influence that the polygraph evidence had on the decisions in this experiment could thus be considered not undue, but rather rational in light of the little room for doubt (0.5%).

In the second study, Carlson et al (1977) gave a take-home questionnaire to one hundred mock jurors (students and persons from the community) who had deliberated in eight criminal and civil mock trials at Yale Law School. The questionnaire contained a brief description of the polygraph technique and asked respondents to assume that a polygraphist had examined a witness who had testified at the trial they had attended. They were requested to re-decide the case in light of this new evidence, which in all cases was damaging to the party at trial. The accuracy given for the polygraph test was varied, 70% for one-half the respondents and 95% for the other half. Results indicated the polygraph evidence was in conflict with the initial decisions of 31 of the 55 respondents. Of these, only six indicated they would change their decisions, seven were uncertain and eighteen indicated they would not change. Logically, the lower the accuracy given for the polygraph the less likely the juror was to change his decision. Of 31 jurors given an accuracy of 95%, eight thought this evidence would be more significant than other testimony. None of the 24 given an accuracy of 70% thought the polygraph evidence would be more significant than other testimony, while the majority in both groups felt it would be equally as significant as other testimony. In

addition, ten of the respondents spontaneously wrote some expression of distrust of polygraph findings on their questionnaires. The researchers conclude that polygraph evidence does not have an undue influence on juries and that at least one juror in five can be expected to arrive at the courthouse with a distrust of polygraph results.

While this study suggests polygraph evidence may have only a modest impact on juror decision-making the results should be accepted only cautiously because of methodological limitations. First, the jurors here did not have the benefit of observing the polygraph expert testify, as they did with other witnesses. This conceivably could diminish the impact of such testimony. Second, only 55% of the jurors responded to the questionnaire, this possibly creating a sampling bias. Third, the jurors who did respond had already publicly announced their decisions and might be reluctant to change, this again potentially diminishing the impact of the added polygraph testimony. Fourth, the re-decision was, as in the previous study, made without the benefit of jury deliberation and without judicial instructions regarding the polygraph evidence. Finally, there may be a marked discrepancy between what people say or believe they might do and their actual behaviour, i.e. the jurors might sincerely believe after the fact that the additional polygraph evidence would have only moderate impact, but being confronted with this new evidence in a real decision-making situation could produce greater or lesser impact.

In the third study, Markwart and Lynch (1979) presented a murder trial, consisting of a written summary of the facts of an actual murder trial followed by a videotape of a judge delivering a charge to the jury,

to twelve deliberating student juries. Four juries decided the case with no polygraph evidence, four with additional polygraph evidence that was favourable to the accused, and four with additional polygraph evidence that was unfavourable to the accused. The polygraph was characterized as 90% accurate and yielding a preponderance of false positives when in error. Results of the control group suggested that the case was an ambiguous one and hence should be sensitive to the addition of any new favourable or unfavourable evidence. Results of the experimental groups revealed somewhat unexpected results: both favourable and unfavourable polygraph evidence generated significantly (both statistically and in absolute magnitude) more guilty verdicts at final decision, though unfavourable polygraph evidence had a significantly greater impact than the favourable polygraph evidence. The impact of unfavourable polygraph evidence was such that 66% of the individual jurors returned guilty decisions in this condition, compared to only 12% guilty verdicts in the control condition. However, only one of these eight juries in the experimental conditions was able to arrive at a unanimous verdict. Analysis of tape-recorded jury deliberations revealed that the juries discussed the polygraph very little, but discussion elicited a variety of themes: outright mistrust of the results, a view that the results were inadequate to constitute proof, suspicion that the taking of the test was a ploy by the defence, and more moderate views that it was helpful or corroborating. Post-test questionnaires revealed that three in four jurors viewed the polygraph evidence as less significant than other evidence. Thirty of eighty jurors expressed little or no faith in the polygraph, forty-five indicated it was helpful and only

two expressed a great deal of faith in its results. Cross-tabulation of age (under 23, 23 and over) with decision concurrence or non-concurrence with the polygraph results revealed a strong association: older jurors tended to render decisions that concurred with the findings of the polygraph. This relationship served to explain the unexpected findings for the favourable polygraph condition: two juries here were predominately younger.

Markwart and Lynch speculate that the no effect or contrary effect of favourable polygraph evidence might be explained by the fact that the test is publicly known as a lie-detector and not as a test of truth-telling. This, coupled with the belief that the test can be "beaten", may predispose jurors to accepting a diagnosis of deception more than a diagnosis of truth-telling. Further, cynicism about the action of volunteering to take the test -- seen by some as a legal manipulation by the defence -- may dispose some jurors to view the defendant's case negatively. The researchers do not arrive at any concrete decision as to whether the addition of the polygraph evidence had an undue influence. While this evidence had a significant impact on decision-making, they point out that since the case was an ambiguous one it was likely to be sensitive to the addition of any new evidence. Whether the polygraph evidence had any greater impact than any other type of additional evidence would have had is the question that is raised.

Simulated trial experiments, representing a highly artificial situation, are always problematic in terms of generalizability. Beyond this, there are two feature limitations of this study. First, the jurors

here did not have the opportunity to observe the polygraph expert testify. The negativism about the polygraph and the cynicism about submission to the test displayed by some jurors could be the result of preconceived notions brought into the jury situation and could be dispelled by such observation. Cross-examination of the polygraph expert in an actual trial, which the jurors were not afforded an opportunity to observe, could also have affected these preconceived notions one way or another. Secondly, the subject population here consisted of young students and students are not generally representative of those found in a typical jury pool. Some studies suggest that there may be significant differences in the decision-making of student and actual jurors (Simon and Mahan, 1971) or of younger and older jurors (Sealy and Cornish, 1973), while student jurors appear to have a more stringent definition of what constitutes "beyond a reasonable doubt" than actual jurors (Simon and Mahan, 1971). This limitation is a characteristic of all simulated jury studies utilizing students, but it is even more pronounced in this particular study since there was an apparent age differential in the impact of the polygraph evidence.

In the fourth study, Cavoukian (1979) employed a design comprised of a control group and two experimental groups. There were 50 subjects in each condition, the subjects consisting of volunteers from persons visiting the Ontario Science Centre. The control group was given a written summary of the evidence presented in the trial of R. v. Phillion (1973), a murder case. The evidence of the case was the same in the first experimental condition except that the testimony of a polygraph examiner -- who gave the opinion that the accused did not kill the victim -- was added.

In this condition the accuracy of the polygraph test was not given and there was not an instruction from the judge to the jurors about how to weigh the polygraph evidence. The second experimental condition was identical to the first experimental condition; except that the polygraph test was characterized as 80% accurate and the judge cautioned the jurors that this accuracy should be borne in mind in weighing the evidence. Two dependent measures were utilized: perceived likelihood of guilt on a seven-point scale and dichotomous verdicts. All decisions were rendered individually, without deliberation.

Employing analysis of variance with perceived likelihood of guilt as a dependent measure, results indicated a significant effect for type of evidence: the control condition was significantly different from both the first and second experimental conditions, but there was no significant difference between the first and second experimental conditions. In short, the addition of polygraph evidence without judicial caution that was favourable to the accused resulted in juror ratings that were significantly more favourable to the accused than were the ratings of the control group, i.e. the added evidence had significant impact in the appropriate direction. While the addition of a judicial caution did mitigate this impact somewhat in absolute terms, it did not do so in statistically significant terms. In terms of the other independent measure -- dichotomous verdict -- 48 percent of the control group acquitted the accused, while 72 percent and 60 percent did so in the first and second experimental groups respectively. The differences here between the control and first experimental conditions are statistically significant, but not

between the control and second experimental conditions, nor between the first and second experimental conditions. In the control case, the primary defence witnesses were a psychiatrist and psychologist. In juror ratings of the most important evidence for the defence, 82 percent of the control group referred to these two witnesses. In the first experimental group 38 percent of the subjects indicated these two witnesses were most important and 34 percent indicated the polygraph examiner, while in the second experimental group 42 percent indicated the psychologist and psychiatrist and 32 percent the polygraph examiner. Cavoukian concludes from these results that jurors do not "blindly" follow the polygraph results and that while polygraph evidence favourable to the accused can have a considerable amount of influence on juror's judgments of guilt, a judge's cautionary instruction serves to mitigate this effect.

Cavoukian (1979) concedes that her study was not intended to be analogous to an actual courtroom. This underlines the feature problems of the study: the use of only a written summary of case materials, a non-randomized sample possibly not typical of a normal jury venire, and utilizing decisions rendered without the benefit of deliberation. These characteristics could affect the external validity of the results. Further, the utilization of an experimental condition where polygraph evidence was introduced without any statement of validity and reliability or judicial caution is of more academic than practical interest -- courts do not, and likely would not, allow introduction of this type of evidence in such a manner.

At first blush the results of this study appear to conflict with the results of the study reported by Markwart and Lynch (1979), where

the additional polygraph evidence favourable to the accused actually produced more guilty verdicts after deliberation rather than more not guilty verdicts. Further analysis reveals, however, that there is no real conflict here. Cavoukian did not provide for juror deliberation in her study and the individual dichotomous verdicts rendered in her experimental condition employing a judicial caution can be best compared with the pre-deliberation decisions (also dichotomous) in the favourable polygraph evidence condition -- where there also was a judicial caution -- reported in Markwart and Lynch's study, albeit different levels of accuracy (90% vs. 80%) were provided the jurors. In Cavoukian's study the addition of polygraph evidence favourable to the accused produced more (60%) not guilty decisions than in the control group (48%). This is not, however, a statistically significant difference ($\chi^2(1)=1.45, p < .30$). In the comparable group in Markwart and Lynch's study, the addition of this evidence did "work" in the expected direction, producing more (62%) not guilty decisions than in the control group (55%) at pre-deliberation. This also is not a statistically significant difference ($\chi^2(1)=0.38, p < .95$). Thus in both studies the addition of polygraph evidence favourable to the accused, accompanied by a judicial caution, did not have significant impact on jurors' individual, non-deliberating decisions. This comparison underlines the necessity of including deliberations in a simulated jury experiment and questions the generalizability of Cavoukian's results.

In the final study, Cavoukian and Heslegrave (1980) replicated and expanded upon the previous study reported by Cavoukian (1979). Again, there were 50 subjects, comprised of volunteers from visitors visiting the

Ontario Science Centre, in each condition; written summaries of the evidence were utilized; and decisions were rendered without deliberation.

The case materials -- this time drawn from evidence in the murder trial of R. v. Wong (1979) -- were changed and the seven-point guilt scale was modified to a nine-point scale. The first three conditions of this experiment were the same as in the previous experiment -- no polygraph evidence, favourable polygraph evidence without judicial caution, and favourable polygraph evidence accompanied by a judicial caution. Two additional experimental conditions were added, however. In one of these, an "expert's caution" was included, this being a substitute for the "judicial caution". Here an expert testified: (a) that polygraph testing is able to yield only 80% accuracy under the "best conditions"; (b) that these results are based on laboratory findings and there is practically no information regarding accuracy in "real life" situations; and (c) that, in the expert's opinion, polygraph findings should be regarded with a "great deal of skepticism". In the second new condition, described as "alternate evidence", the evidence of an eyewitness whose testimony favoured the case of the accused was added to the control condition evidence. The intent of this was to test for "undue influence" by controlling for the effects of the addition of evidence favourable to the accused and hence determining whether the addition of favourable polygraph evidence had greater or lesser impact than the addition of favourable alternate evidence. Considering that this additional eyewitness testimony could have a powerful impact on juror's decisions, the potential impact was mitigated by the researchers describing the added eyewitness as one whose credibility was "somewhat suspect".

Cavoukian and Heslegrave reported the results of both dependent variables in this study, but in drawing conclusions relied primarily on the results of the guilt ratings due to anomalous differences between the verdicts and the guilt scale in the control condition. For example, in comparing the guilt scale ratings of the control condition and the condition with judicial caution there was a significant effect produced in the appropriate direction (i.e. a greater degree of not guilty ratings) by the addition of the polygraph evidence, but in terms of verdicts the addition of favourable polygraph evidence actually produced a "reverse" effect, i.e. more guilty verdicts, though not significantly so. Considering this, they rejected dichotomous verdicts as a dependent measure in comparisons of the control and other conditions and utilized only guilt scale ratings. On the guilt scale ratings, the results of Cavoukian's study were replicated, i.e. the addition of polygraph evidence with and without judicial caution had a statistically significant impact in the appropriate direction while the judicial caution mitigated this impact, but not significantly so. The researchers also arbitrarily defined "blind acceptance" of the polygraph results by the jurors as achieving an average rating of 8 out of 9 on the guilt scale in these two experimental conditions. This was not achieved, or even nearly so, and they conclude that the addition of polygraph evidence does not result in "blind acceptance".

Further results indicated the "expert's caution" served to completely counter the impact produced by the addition of polygraph evidence with or without judicial caution, i.e. there were no statistically

significant differences in ratings between this condition and the control condition. The "alternate evidence" condition actually produced slightly greater guilt ratings than the control condition, but not significantly so. Because the addition of this alternate evidence did not "work" in the expected direction, the researchers rejected comparisons with the polygraph conditions as a reasonable test of "dueness" or "undueness". Post-test questionnaires indicated that the subjects did not think that polygraph tests were very accurate and were about the same accuracy as other psychological tests. Cavoukian and Heslegrave conclude from these results that the addition of favourable polygraph information has an impact on juror decision-making, but that it is not blindly accepted by jurors nor appears to have a great or unreasonable influence on juror decision-making.

Since the same methodology as that employed by Cavoukian (1979) was utilized in this experiment, the results are subject to the same methodological limitations described earlier. There are, however, further considerations here. First, while there were indeed anomalous differences in the results of the guilt ratings versus verdict decisions, there do not appear to be sound reasons presented for rejecting an analysis of the verdict decisions -- the researchers could just as easily have rejected the guilt ratings as a dependent measure or at least fully considered both measures. In fact, the more appropriate measure for study here is verdicts: in real life situations jurors do not provide guilt ratings, they render verdicts. Analysis of the individual, non-deliberating verdicts in this study results in different conclusions about the effects of introducing

favourable polygraph evidence. Comparing the verdicts of the control group (14% guilty) with those of the polygraph conditions without judicial caution (10% guilty) and with judicial caution (22% guilty) there are no statistically significant differences. In short, the same results that were found by Markwart and Lynch (1979) and Cavoukian (1979) are evident -- the addition of polygraph evidence favourable to the accused has no statistically significant impact on individual, non-deliberating juror verdicts.

A second consideration here concerns the "expert's caution" experimental condition. It seems that the evidence given by this expert amounts to much more than a simple caution to the jury about how to weigh polygraph evidence, but rather appears to be closer to rebuttal evidence which could serve to undermine the credibility of the polygraph evidence favouring the accused. Such rebuttal evidence could, of course, often be expected in real trial situations. A comparison of verdicts in the expert's caution condition (28% guilty) with the control condition (14% guilty) reveals that differences in decisions approach statistical significance ($\chi^2(1)=2.95$, $p < .10$), and that the introduction of this "cautioned" evidence has a reverse or unintended effect, i.e. more guilty verdicts, even though the evidence favoured the accused. Further, a comparison of this condition with the polygraph condition without caution (10% guilty) -- where the favourable evidence was not subject to qualification or undermining -- reveals statistically significant differences ($\chi^2(1)=4.16$, $p < .05$), with the rebutted or suspect new evidence having a reverse effect. These findings tend to support the observations of Markwart and Lynch -- polygraph evidence favourable to the accused and regarded as suspect by some jurors

may produce unintended effects on juror decisions. This argument is also supported somewhat by comparing the verdicts of Cavoukian and Heslegrave's alternative evidence condition (25% guilty) with the control (14% guilty) and polygraph without caution (10% guilty) conditions, where the added and suspect evidence of the new eyewitness actually produced more guilty verdicts. These were not, however, statistically significant differences when compared to the control condition ($X^2(1)=1.62$, $p < .30$), but approach statistical significance when compared to the polygraph condition without caution ($X^2(1)=3.47$, $p < .10$). It seems possible then that the introduction by the defence of perhaps any type of evidence favourable to the accused that may be regarded as suspect by jurors could produce unintended effects. In sum, however, the results of Cavoukian and Heslegrave's study are somewhat equivocal, depending upon which of the dependent measures is considered.

In summary, the evidence of more recent and methodologically sounder studies tend to suggest that jurors are not likely to "blindly accept" polygraph evidence as conclusive, at least in the sense of automatically and unequivocally returning decisions that are always consistent with polygraph findings. There is, however, some evidence that polygraph results unfavourable to the accused may have a decided impact on juror verdicts, while polygraph results favourable to the accused may have no significant impact on juror verdicts or, when regarded skeptically, may even have an unintended effect. These studies are, however, few, subject to methodological limitations and sometimes equivocal. Further, none of the

studies have defined very well what constitutes "undue influence" or adequately brought information to bear on resolving this issue.

II

METHODOLOGY

The present study essentially represents a replication, utilizing the same case materials, of the study reported by Markwart and Lynch (1979). It involves a comparison of the verdicts of juries hearing a case, two groups of which -- the experimental groups -- are presented with the testimony, favourable or unfavourable to the accused, of a polygraph examiner, while another group -- the control group -- is not. An addition has been made to this basic design to enable more definitive statements regarding the effect of polygraph evidence on jury decisions. Also, an attempt was made to select a subject population more relevant than a student sample and a more extensive exploration of jurors' attitudes towards polygraph evidence was undertaken.

1. Defining Undue Influence

The study by Markwart and Lynch demonstrated that the addition of polygraph evidence to trial materials has a significant impact on mock juror decision-making, yet they experienced considerable difficulty in deciding whether the effect was a "due" or "undue" one. The difficulty here arose because these terms had not been adequately defined. For this study, undue influence has been operationally defined in four ways.

To arrive at the first two operational definitions one should examine examples of how the undue effect of the addition of polygraph results to trial evidence has been characterized in the literature: one which would "predetermine the eventual conclusion of guilt or innocence"

(Abell, 1977:53), becoming "the basis of push-button determinations" (Forkosch, 1975:306), having a "devastating impact of frightening magnitude" (Radeck, 1972:301), and having "an unusually great influence" (Harmon, 1968:823). The tone of these comments suggests that the impact of this evidence would be so great as to strip virtually all jurors of their decision-making discretion. This suggests two possible definitions of undue influence. The first, a rather stringent definition, involves the complete removal of decision-making discretion among jurors. In short, if all jurors exposed to polygraph evidence favourable to the accused returned not guilty verdicts and all those exposed to evidence unfavourable to the accused returned guilty verdicts, then one could conclude that the impact of this evidence is undue. The second, somewhat less stringent definition, involves a statistically significant change in decisions -- in the expected and appropriate direction -- resulting from the addition of the polygraph evidence. In this regard, one would conclude that the impact of the polygraph evidence is undue if the favourable and unfavourable polygraph evidence resulted, respectively, in significantly greater not guilty and guilty verdicts than the control group. Since the undue impact is clearly suggested to be a very powerful one it is reasonable to set the statistical levels of significance here at a probability of less than .01.

A third definition of undue influence does not imply total deprivation of discretion but rather an effect over and above what other similar additional evidence would exert. In this third definition operationalism involves the utilization of a comparison group for the establishment

of a relative measure of impact. To provide a comparison measure a second control group using a different type of evidence, normally admissible in courts and affecting the credibility of the accused, was added to the research design. For this purpose, character witness testimony about the accused's reputation in the community was selected. This type of evidence is, in both Canadian (Chase, 1978) and American Federal (Rothstein, 1975) law, introduced as a means of testing the credibility of the accused and thus serves a purpose similar to polygraph evidence, although obviously it is substantially different in nature. Undue influence could be inferred if either experimental group demonstrated a significantly greater impact on decision-making than its respective comparison group¹ (i.e. favourable polygraph evidence vs. favourable character witness testimony; unfavourable polygraph evidence vs. unfavourable character witness testimony) at a probability level less than .05. This method of assessing undue influence would control for the factor of the addition of evidence that affects the credibility of the accused, and hence permit focusing on the effect that the scientific aspect of the polygraph test exerts on decision-making.²

¹ For the sake of clarity--to avoid saying "first control group" and "second control group"--the no-polygraph evidence group will be referred to as the "control" group and the "character-witness testimony" group as the "comparison" group.

² There are no previous studies on the direct effect of "reputation-in-the-community" type of character witness testimony in actual or simulated jury situations. However, there are several jury studies of a related character nature that have manipulated such variables as physical or social attraction, liking or attitude similarity among jurors and defendants. While some studies have demonstrated significant impact, the results are inconsistent and equivocal (See, Davis *et al.*, 1977:329-333). Hans and Doob (1976) found however that, with Canadian subjects, evidence of the accused's past criminal record, ostensibly a test of credibility but more likely a reflection of character, had a significant impact on mock juror decision-making.

The fourth means of defining undue influence is based upon considerations about what effect the introduction of such evidence should have, that is, whether the addition of the polygraph evidence "works" in a rational and expected direction. Logically, the addition of evidence unfavourable to the accused should yield more guilty verdicts and favourable evidence more not guilty verdicts, varying, of course, with the strength and direction of the evidence in the original case and the perceived salience of the added evidence. If the verdict patterns in the experimental group are consistent with this logical argument the influence of the polygraph evidence could be considered appropriate (due).

There are good reasons, however, to suggest that favourable polygraph evidence should have a greater impact on decisions than unfavourable polygraph evidence. First, the polygraph test here is characterized as yielding a preponderance of false positives (actually truthful persons shown to be lying) when in error. This, logically, should make jurors more suspicious of and less willing to accept a finding of deception than one of truth-telling.

More importantly though, consideration of the logical effect of additional polygraph evidence should be placed in the context of the standard of proof required in a criminal court. Here, the onus is on the prosecution to prove guilt beyond a reasonable doubt, while the defence need only raise a reasonable doubt. What constitutes a reasonable doubt may vary among jurors, the probability of guilt required to return a guilty verdict ranging from 74 percent to 100 percent (Simon, 1970). Further, Simon and Mahan (1971) asked actual jurors to give estimates of the probability of guilt they required to return a guilty verdict for fourteen types of crimes and found that the definition of "beyond a reasonable doubt" varied according to the

seriousness of the crime, from a high of 95 percent for murder to 74 percent for petty larceny. The median response of 95 percent for murder here suggests that jurors demand a strong burden of proof for this crime and concomitantly relax their definition of what constitutes raising a reasonable doubt. It would be logical to expect that if Simon and Mahan's jurors were exposed to unfavourable polygraph evidence characterized as 90 percent accurate this would not be sufficient to prove guilt beyond a reasonable doubt on the basis of this evidence alone. On the other hand, it would be logical that such evidence that is favourable to the accused should be sufficient alone to raise a reasonable doubt. Thus when the case deals with murder and jurors comparable to Simon and Mahan's panel of jurors, it would be expected that polygraph evidence favourable to the accused should have a significantly stronger impact in generating not guilty decisions than unfavourable polygraph evidence has in generating guilty decisions. Should this not occur, the impact of the polygraph evidence would be considered undue.

2. Simulated Jury Experiments

There is an extensive body of research on simulated jury trials. Two recent (Davis et al., 1977; Gerbasi et al., 1977) and one earlier (Erlanger, 1970) reviews of the literature are available. Most of this research has focused on the effect of extra-legal variables (e.g. juror attitudes, defendant characteristics) on jury decision-making. Little work has been conducted on the effect of various types of evidence on decision-making. Simulated jury research varies considerably in design and method. Dependent (decision) variables may utilize dichotomous verdicts, n-point guilt scales, probability estimates, parole eligibility or sentence. The

mode of case presentation may involve only a short written summary of a hypothetical case, audio tapes, videotapes, or a shadow jury viewing an actual court case. Some are held with jury deliberation, but others are not. Subject populations may involve high school or college students, volunteer community members or a randomly selected sample from an actual jury venire.

One pressing concern of all simulated jury studies is the degree of generalizability (external validity) that obtains. While decisions individually rendered by college students reading a short written summary of the facts of a hypothetical case in a classroom (not an untypical type of study) may be interesting, such methods have been strongly criticized (e.g. Wilson, 1977) and are considered to have little relevance to what occurs in an actual jury situation. Hence the methodology used in this study involved the drawing of a relevant sample and the presentation of as realistic a simulation as possible, within the limits of resources available, in order to maximize generalizability.

3. Sampling Method

An initial attempt was made to solicit volunteer community members from a random sample drawn from the Ottawa telephone directory. Using a table of random numbers, pages were selected from the Ottawa directory and every fifth name with a residence in the city of Ottawa was selected. Letters requesting participation in a "study of jury decision-making" were sent to five hundred persons. This letter also described the requirements for juror eligibility according to The Juries Act (1974)

of Ontario and subjects were requested not to participate if they did not meet the requirements. This Act essentially requires Canadian citizenship, Ontario residency, an absence of a legal background or legal employment, an absence of a conviction for an indictable offence (excepting pardons), and a minimum age of eighteen years and maximum of sixty-nine years.

Initially the onus was on the community member to contact the experimenter by telephone. This method yielded only twenty participants within the first two weeks after mailing. Telephone follow-up of non-respondents was then attempted, yielding ten participants of forty contacted. This method, while more fruitful, proved to be very time-consuming and was consequently abandoned. Further, to avoid the possibility of no-shows at the experiment a procedure wherein the volunteer initiated contact with the experimenter, indicating more genuine interest in the experiment, was considered more desirable.

Subsequently, free advertising for volunteers was obtained in the local newspapers and radio and television stations, this procedure yielding another small group of volunteers. From these initial groups of "letter" and "media" volunteers the sample snowballed as a product of requests to these initial volunteers to assist by encouraging friends, relatives, or co-workers to volunteer. In this request, the necessity of withholding from their friends, etc., the details of the experiment was emphasized. Two volunteers, one from a Kiwanis club and another from a women's social group, solicited several volunteers from their respective clubs. All these "non-letter" volunteers were advised by telephone of the juror eligibility requirements of The Juries Act and selected themselves

out if they did not meet these criteria. This process of sample recruitment was to be continued until the required sample size was obtained.

4. Organization of Sessions

The experimental design was such that twenty twelve-person juries were required--four juries each for the control, unfavourable polygraph, favourable polygraph, unfavourable character witness, and favourable character witness groups. Thus a total of 240 jurors was required. Allotment of the jurors to each condition on a random basis was not possible as recruitment was on a sequential basis. Rather, jurors assigned themselves to the jury sessions on the basis of their availability. Spouses, with one exception made (the last jury), were not permitted to serve on the same jury and friends were discouraged from participating on the same jury.

It was not certain whether the required number of jurors to complete the experimental design would be obtained, so it was decided to proceed with the control and experimental conditions first, and then proceed to the comparison condition if a sufficient number of volunteers permitted continuing. The control and experimental juries were run sequentially for the first three juries (i.e., first the control group, then favourable polygraph, and then unfavourable polygraph). This was not able to be continued because, as a result of no-shows, a more pressing concern became balancing jury sizes between conditions. Hence the number of volunteers arriving at a particular session became the criteria for which cases they would decide. Once the control and experimental groups

were complete it was evident that an insufficient number of juries would be obtained to complete the design, so, on the basis of preliminary results, a decision was made to run only the group with character witness testimony unfavourable to the accused and the group with such testimony favourable to the accused was abandoned. Sufficient numbers were obtained to run only three juries in this selected comparison group.

5. Case Presentations

Jurow (1977) has suggested that the generalizability of simulated jury studies may be affected by the type of case presentation; audio or visual materials typically result in greater juror involvement than do written materials. With this in mind, audio-visual materials were prepared. The presentation consisted of three parts. First a black and white videotape of a judge's preliminary remarks to the jury was made. The content of this was derived from the model recommended for Canadian judges (see, Kennedy, 1965). This introduction basically consisted of the judge instructing the jurors as to their role and briefly outlining the nature of the criminal trial process. For this videotape and a subsequent one, the judge was played by a middle-aged amateur actor outfitted in judicial dress and sitting at a desk in front of a picture of the Queen.

Second, a written summary, approximately 1500 words in length, of the elemental evidence of a trial was constructed. This summary was derived from the evidence of an actual trial. The summary described the indictment, the circumstances of the offence, the feature evidence of the trial, and the theories of the prosecution and defence. An audio tape of this summary was also made.

Third, a videotape of a judge's charge to a jury was made.

This material again was derived from an actual trial. The judge's charge consisted of an outline of the pertinent evidence of the trial and instructions to the jury on the points of law that they would have to consider in arriving at their verdict.

The materials for the summary of the trial evidence and the judge's charge to the jury were derived from the case of R. v. Paquette (1974)³. Some modifications of the trial materials were required. Names of the participants and dates were changed. The actual case involved three co-accused, but this was cut to two to simplify it somewhat. Also, in the actual trial the accused did not testify in his own behalf. His position, however, was clearly evident in the testimony of others, his own statements, and the arguments of his counsel. To avoid problems of hearsay evidence (as in Phillion v. The Queen, 1977) and to make the taking of the polygraph test more credible (i.e. as corroboration of his testimony), his testimony was added to the presentation. This was counterbalanced by adding the contradictory testimony of the co-accused (who had pleaded guilty), though the credibility of this testimony was diminished by characterizing the co-accused as having an extensive criminal record. Except for these modifications the judge's charge to the jury was identical to that delivered by the judge in the actual trial. While the written and audio summary of the facts of the case was only a short precis, the pertinent evidence in the case was elaborated on considerably in this charge.

³ The police brief and transcripts of the trial and judge's charge were kindly provided by Mr. Leonard Shore, defence counsel in the actual case.

Briefly, the case was one of constructive murder, the accused being charged as a party to the offence. He was the alleged driver of a get-away car while his co-accused actually robbed a store and subsequently shot a bystander who attempted to intervene. The accused's primary defence was that he was compelled at gunpoint to participate by the co-accused. The evidence in this case was largely circumstantial in nature, requiring the jury to infer from a description of his actions before, during and after the robbery whether the accused had participated voluntarily or not.

The experimental manipulations in this design involve, of course, the addition of evidence to the control case. For the experimental groups, the polygraph was characterized as 90 percent accurate and, when in error, yielding a preponderance of false positive results. This characterization was derived from the most recent research by Raskin and his associates.

In the charge, the judge briefly outlined the theoretical basis of the technique, the means of measurement of physiological parameters, and indicated that he was satisfied that the examiner was highly competent and had administered the test under proper conditions. In both experimental groups the accused had volunteered to take the test. Where the evidence was unfavourable to the accused the basis for admission of this evidence was given as a stipulation agreement between the defence and prosecution. In the case where the evidence was favourable to the accused the basis for admission of the evidence was given as the judge considering it only fair to admit evidence that was favourable to the accused's case.⁴ The key line in the judge's charge for the case where the evidence was favourable was:

⁴ This is part of the reasoning given in R. v. Wong (1977).

"Now it is the considered opinion of the polygraph expert that O'Leary is telling the truth when he says he was compelled to participate." Where the evidence did not favour the accused this line was: "Now it is the considered opinion of the polygraph expert that O'Leary is not telling the truth when he says he was compelled to participate." Finally, the judge cautioned the jury not to view this evidence as conclusive, but to consider it in light of all the other evidence.⁵ This additional evidence for the experimental cases was inserted at an appropriate point in the judge's charge, about two-thirds of the way through it.

As far as testimony regarding the character of an accused goes, it is not legally permissible for the prosecution to lead character testimony unfavourable to the accused except in rebuttal to the character testimony presented by the defence. This restriction was able to be overcome, however, since in the original trial the defence had adduced testimony from the accused's employer, who had characterized him as a "reliable and trustworthy employee". This was reported in the judge's charge in the experimental and control cases. Hence, in the comparison case the prosecution was shown to have obtained the testimony of the accused's former probation officer and his former high school principal (who was also characterized as a family neighbour) about the accused's reputation in the community, this being given in rebuttal of the employer's testimony. A probation officer⁶

⁵ This is a standard caution (e.g., see U.S. v. Valdez, 1962).

⁶ The accused had been characterized as having one previous shoplifting conviction in all cases. This explains the involvement with a probation officer.

and school principal were selected for this purpose since both roles involve considerable community contacts and, hence, knowledge of one's reputation in the community. Both were shown to have characterized the accused as not having established a reputation in the community for being either reliable or trustworthy, the basis for this opinion being elaborated on somewhat in the judge's charge. Further, the judge instructed the jury to regard this evidence as a measure of the accused's credibility and not as indicative of his propensity to commit a crime.⁷

6. Questionnaires

Four questionnaires were administered to the subjects. The first (Personal Characteristics Questionnaire) obtained data relating to the social characteristics of the jurors--basically sex, age, occupation and education. Knowledge of occupation permitted establishing a measure of socioeconomic status based on a scale reported by Blishen and McRoberts (1976). With this information it was thought that both the representativeness of the sample and the relationship between these social characteristics and juror decision-making could be studied.

The second questionnaire (Pre-Deliberation Questionnaire) basically asked for an evaluation of the presentation and for a pre-deliberation decision; while the third (Post-Deliberation Questionnaire) questionnaire asked for a post-deliberation decision in all conditions

⁷ The texts of the judge's preliminary remarks, case summaries, control case charge to the jury, and inserts of additional evidence are found in Appendix A.

and ratings of the influence of the additional evidence in the experimental and comparison groups. In both the pre- and post-deliberation decisions the jurors were asked to deliver not only a guilty or not guilty verdict, but also to indicate the sureness of their decisions on a four-point scale (i.e. very sure to very unsure).

The purpose of asking for a pre-deliberation as well as a post-deliberation decision was to ascertain the influence of deliberation. There is a considerable amount of research which suggests that knowing the initial preferences of jurors is of critical import. This research suggests that while the deliberation process may be colourful, it is relatively insignificant in determining the jury's final outcome in most cases; it is rather the initial verdict preferences that may be more determinative of final outcome. Kalven and Zeisel (1966), by follow-up interview, reconstructed the initial preferences of 225 actual juries, finding that in 90 percent of the cases the final verdict was identical to the majority preferences on first ballot. This may suggest that the deliberation process may not be a fact-finding exercise with a rational weighing of the issues and that, if it is anything at all, it is an exercise in consensus-making wherein the majority imposes its will on the minority. Kalven and Zeisel (1966) use a rather apt metaphor to describe this:

"the deliberation process might well be likened to what the developer does for an exposed film: it brings out the picture, but the outcome is predetermined..." (p.466)

Further evidence of such a majority decision-making process has been obtained in recent studies of actual juries (Bridgeman and Marlowe, 1979) and simulated juries (Davis, 1973; Kerr et al., 1974; Stasser and Davis, 1977).

In a variation of this hypothesis, Davis and his colleagues (1975, 1975b) have described and presented evidence of a two-thirds majority decision scheme that is operative in most simulated juries. This scheme posits a strong tendency for the final unanimous verdict to be identical to the initial majority preference when this initial verdict preference is held by two-thirds of the jurors. Of course, this does not invariably occur, otherwise there would not be hung juries.

Evidence of a simple majority or two-thirds majority decision-making scheme in juries underlines the importance of taking pre-deliberation decisions and studying the effect of the deliberation process, particularly in a design where the effect of additional evidence on decision-making is being studied. For example, in an ambiguous case with a likelihood of an initial 6/6 decision preference, the additional evidence necessary to produce a final unanimous verdict one way or another has, according to the two-thirds majority scheme, to influence only two jurors. With an initial 8/4 decision preference, a complete reversal of final outcome is possible if the additional evidence influences only four jurors.

The fourth questionnaire (Attitudes Questionnaire) comprised a set of statements to which the subjects were required to indicate agreement or disagreement on a five-point scale (i.e. strongly agree to strongly disagree). The statements concerned such matters as the efficacy of polygraph testing, character witness testimony, lawyers, and other considered relevant matters. The main purpose of the questionnaire was to elicit attitudes toward polygraph testing and the admission of this evidence with a view to (a) by administering it to the control and comparison groups, obtain

indications of the attitudes that jurors might bring into the jury situation regarding these matters, and (b) by administering it to the experimental groups, explore relationships between these attitudes and decision-making. Several of the statements were specifically designed to test the speculative explanations offered by Markwart and Lynch (1979) regarding juror cynicism about the action of volunteering for the test, perceived defence counsel manipulation, etc.⁸

7. Procedure

All jury sessions took place in the evening in the conference room of the offices of the Family Court Clinic of the Royal Ottawa Hospital. Jurors were seated in comfortable, upholstered chairs around a rectangular table. Once assembled, the jurors were given a short welcoming talk and advised that the intent of the simulation was to study jury decision-making. It was explained that it was necessary to do this in a simulated setting since actual jury deliberations were, according to law, unable to be monitored. They were also advised that their deliberations would be tape-recorded and that they would be observed through a two-way mirror.

Jurors then selected a card with a number on it from a mixed deck of cards. This served as an identity number for the questionnaires, and hence preserved anonymity. The questionnaire on personal characteristics was then administered, and was followed by the videotape of the judge's

⁸ The texts of all questionnaires are found in Appendix B.

preliminary remarks to the jury, which was approximately five minutes in length. The experimenter left the room while this was played. Following the videotape the jury was advised to select a foreman but were given no instructions on how to do so, as is the case in a normal jury trial. The experimenter left the room while the election, typically requiring only a few moments, took place.

The written summary of the facts of the case was handed out and an audio recording of this was played, the intent of the audio recording being to counter reading difficulties and improve comprehension. This was followed by the videotaped charge to the jury, which was approximately forty-five minutes in length. The jurors were advised that they could take notes during the charge. This is a departure from normal jury procedure, but considered necessary, not only because the charge was fairly complex, but also because the jurors here would not have an opportunity to return to the judge for clarification of a point of law or evidence, as they would in a normal jury trial. The experimenter left the room during the playing of the charge. Following the charge, the pre-deliberation questionnaire was administered. A ten-minute coffee break ensued; jurors were advised not to discuss the case during this time.

Prior to deliberations the juries were urged to strive toward unanimity but also advised that, given time limitations, a hung jury would be acceptable. During deliberations they were also allowed to retain their written summaries of the case and notes taken from the charge. This again is not normal procedure but considered necessary to compensate for them not

having seen the trial. Deliberations were all forty-five minutes in length and tape-recorded. The experimenter observed the deliberations through a two-way mirror and was not able to be seen by the jurors.

Deliberations were followed by administration of the remaining questionnaires -- in order, the post-deliberation questionnaire and the attitude questionnaire. A group discussion followed the experiment; this also was tape-recorded. Total time for each experiment was approximately 2.75 hours.

III

RESULTS -- THE JURIES AND THEIR DECISIONS

1. The Juries

A total of 155 volunteers participated in fifteen juries--four juries in each of the control and experimental groups, and three juries in the comparison group. Jury sizes ranged from nine to twelve, the smaller juries being attributable to no-shows. Only two juries were full (12-member) ones and four juries (9-member) do not meet the minimum criteria of ten members set out by S.573(2) of the Criminal Code.

The criteria for the organization of the sessions was jury size, this being done to counter-balance any possible confounding effects on the deliberation process and decisions that might arise from differential jury sizes in each condition. This was achieved fairly successfully: there was one 9-member jury in each condition; the ranges of sizes in each condition were 9 to 12, 9 to 11, 9 to 11, 9 to 12; and, with an average jury size of 10.3 overall, the averages for each condition were 10.75, 10.0, 10.0 and 10.7.

2. Sample Characteristics

All of the 155 subjects in the study were eligible to be jurors according to the criteria of The Juries Act (1974) of Ontario. Eighteen (12%) of these participants had previously been summoned for actual jury duty, but only eight of these had actually served as jurors. None had previously participated in a simulated jury experiment.

Table 1 describes the basic social characteristics--sex, age, education and socioeconomic status scores--of the sample in total, from jury to jury, and from condition to condition. Overall, 57 percent of the sample was female and 43 percent male, the mean age was 36.4 years, 63 percent were college educated with the remainder not college educated, and the mean socioeconomic score was 54.3. This socioeconomic score falls in the range of the third highest class of the six-level socioeconomic scale provided by Blishen and McRoberts (1976) and could be considered middle-class.¹ There is a broad range in these characteristics in the sample: age ranges from 19 to 65 years, education ranges from less than grade eight to the doctoral level, and socioeconomic status from the lowest to the highest class. Such heterogeneity could perhaps be expected among an equivalent number of actual juries.

Table 1 also clearly indicates that there is considerable variability on these characteristics from jury to jury. Sex composition varies from 22 percent female in Jury 2 to 83 percent female in Jury 14. Mean age ranges from 28.2 years in Jury 10 to 45.0 years in Jury 6. Educational level varies from 36 percent college education in Jury 10 to 80 percent in Jury 9. Mean socioeconomic score ranges from 42.1 (fourth class level) in Jury 1 to 64.4 (second class level) in Jury 2. Some juries are very markedly different. For example, in the first two juries there are clear differences in sex composition (50% vs. 77%), mean age (33.2 vs.

¹ This scale has a range of scores from

Class I -- 70	Class III -- 50 to 59	Class V -- 30 to 39
Class II -- 60 to 69	Class IV -- 40 to 49	Class VI -- less than 30

Table 1: SOCIAL CHARACTERISTICS OF THE JURIES

	<u>Sex</u>		<u>Age</u>	
	<u>Male</u>	<u>Female</u>	<u>Range</u>	<u>Mean</u>
<u>Control Group</u>				
Jury 1	6	6	36(19-55)	33.2
Jury 2	7	2	45(19-64)	42.0
Jury 3	3	8	35(20-55)	32.3
Jury 4	<u>4</u>	<u>7</u>	<u>30(19-49)</u>	<u>30.5</u>
Total	21(49%)	22(51%)	45(19-64)	34.1
<u>Experimental Group I (Favourable Evidence)</u>				
Jury 5	5	5	38(19-57)	38.3
Jury 6	5	5	39(25-64)	45.0
Jury 7	7	4	22(33-55)	44.2
Jury 8	<u>4</u>	<u>5</u>	<u>30(19-49)</u>	<u>35.3</u>
Total	19(47.5%)	21(52.5%)	45(19-64)	40.7
<u>Experimental Group II (Unfavourable Evidence)</u>				
Jury 9	4	6	22(32-54)	44.5
Jury 10	2	9	20(19-39)	28.2
Jury 11	7	3	43(22-65)	39.6
Jury 12	<u>5</u>	<u>4</u>	<u>45(19-64)</u>	<u>32.2</u>
Total	18(45%)	22(55%)	46(19-65)	36.0
<u>Comparison Group</u>				
Jury 13	4	7	41(20-61)	33.3
Jury 14	2	10	38(21-59)	35.7
Jury 15	<u>3</u>	<u>6</u>	<u>24(23-47)</u>	<u>35.4</u>
Total	9(28%)	23(72%)	41(20-61)	34.8
Overall Total	67(43%)	88(57%)	46(19-65)	36.4

Table 1: (Cont.)

	<u>Education</u>		<u>Socioeconomic Status Score</u>	
	<u>Less Than College</u>	<u>College</u>	<u>Range</u>	<u>Mean</u>
<u>Control Group</u>				
Jury 1	5	7	43(29-72)	42.1
Jury 2	2	7	41(33-74)	64.4
Jury 3	4	7	38(30-68)	51.8
Jury 4	<u>5</u>	<u>6</u>	<u>41(26-67)</u>	<u>51.6</u>
Total	16(37%)	27(63%)	48(26-74)	50.8
<u>Experimental Group I (Favourable Evidence)</u>				
Jury 5	3	7	40(29-69)	51.8
Jury 6	3	7	30(38-68)	54.8
Jury 7	3	8	38(29-69)	49.7
Jury 8	<u>4</u>	<u>5</u>	<u>47(25-72)</u>	<u>53.7</u>
Total	13(32.5%)	27(67.5%)	47(25-72)	52.4
<u>Experimental Group II (Unfavourable Evidence)</u>				
Jury 9	2	8	35(34-69)	49.9
Jury 10	7	4	39(29-68)	52.3
Jury 11	5	5	31(37-68)	58.2
Jury 12	<u>3</u>	<u>6</u>	<u>35(34-69)</u>	<u>52.6</u>
Total	17(42.5%)	23(57.5%)	40(29-69)	53.2
<u>Comparison Group</u>				
Jury 13	3	8	22(52-74)	62.3
Jury 14	<u>4</u>	8	40(35-75)	63.6
Jury 15	<u>4</u>	<u>5</u>	<u>25(44-69)</u>	<u>62.2</u>
Total	11(34%)	21(66%)	40(35-75)	62.8
Overall Total	57(37%)	98(63%)	50(25-75)	54.3

42.0 years), educational level (48% vs. 77% college educated) and mean socioeconomic status score (42.1 vs. 64.4). A great number of such comparisons of individual juries could be made: suffice to say that such differences arise--although generally not so markedly--in the remaining jury to jury comparisons. Such variations could perhaps be expected among actual juries, which undoubtedly are not consistently similar in these basic attributes.

In terms of condition to condition comparisons on these social characteristics some differences between conditions are evident. For sex composition, the first three conditions are fairly comparable, ranging from 51 percent to 55 percent female, however the comparison condition is 72 percent female. In terms of mean age the control, second experimental and comparison groups are fairly comparable, ranging from 34.1 to 36.0 years, but the first experimental group is somewhat older (40.7 years). All conditions are fairly similar in educational level, the percentage of college educated jurors ranging from 57.5 to 67.5. The mean socioeconomic status scores of the first conditions are similar, ranging from 50.8 to 53.2, but the mean score of the comparison group (62.8) is markedly higher.

To determine whether these differences in social characteristics from condition to condition are statistically significant a series of t-tests was run to compare each condition with every other condition on each of these characteristics. The results of this analysis are presented in Table 1A.² This table indicates that there are no statistically

² Only the main tables will be presented in the body of this chapter. Lengthy tables such as this and those considered secondary are found in Appendix D. Tables which are numbered only (e.g. "Table 1") are in the body, tables followed by the letter "A" (e.g. "Table 1A") are in the appendix.

significant differences, where $p \leq .05$, between any of the conditions in sex composition or educational level. In terms of age there is a statistically significant difference between the control and first experimental conditions ($t(81)=2.21$, $p=.03$) but not between the remaining conditions. For socioeconomic status score there are significant differences between the comparison and first experimental conditions ($t(70)=3.56$, $p=.001$), the comparison and second experimental conditions ($t(70)=3.43$, $p=.001$), and comparison and control conditions ($t(73)=3.96$, $p=.000$). Since the analysis of decisions involves a comparison of decisions rendered in each condition, these differences would warrant a later exploration of the relationship between decision-making and social characteristics to determine whether any variance in decision-making is attributable to these differences.

3. Representativeness of the Sample

One of the desired characteristics of the research design was a sample of subjects that could be considered representative of that which could be found in an actual jury venire. A random sampling of the population, with subsequent exclusion of persons not eligible to be jurors, was considered a process that could provide such representativeness. However, this procedure only produced a small proportion of those contacted. This sampling process could be described as volunteer sampling. The "media" volunteers were, of course, not from a randomly selected pool. The remaining subjects were also volunteers, but differed from the initial pool of subjects in so far as some pressure--the encouragement of their

peers--was exerted on them to volunteer. There are, of course, obvious shortcomings arising from such a sampling procedure. Rather than discussing these from a theoretical perspective, there is a means of studying the representativeness of this sample--by comparing it to a sample drawn from an actual jury venire in the same locale.

For the purpose of a simulated jury study, Nelson (1978) utilized a sample of 68 persons drawn from an actual jury venire for the judicial district of Ottawa-Carleton. Thirty-six of these had served as actual jurors, while the remainder had been exempted, passed over or peremptorily challenged. These jurors were obtained by letter and telephone solicitation and the offer of a monetary reward for participation.

A comparison of the social characteristics of the sample in this study and Nelson's jurors is presented in Table 2. This table indicates that the educational levels of the two samples are almost identical, while differences in sex composition, mean and modal ages, and mean and modal socioeconomic status scores are only marginal. Measures of dispersion--range and standard deviation--for age and socioeconomic status score are also very similar. Tests of significance indicate there are no statistically significant differences between these two samples for sex composition ($\chi^2(1)=0.54$, $p < .50$), education level ($\chi^2(1)=0.043$, $p < .90$), age ($t(221)=0.17$, ns), or socioeconomic status ($t(221)=0.17$, ns).

The similarity of the two samples here must only be considered an indicator of possible representativeness since Nelson's sample, while drawn from an actual jury venire in the same locale, is not a random sample.

Table 2: COMPARISON OF THE SOCIAL CHARACTERISTICS OF THE PRESENT SAMPLE AND A SAMPLE DRAWN FROM AN ACTUAL JURY VENIRE.

	<u>Present Sample</u>	<u>Nelson's Sample*</u>
Sample Size	155	68
Sex: Male	67(43%)	33(49%)
Female	88(57%)	35(51%)
	$(\chi^2(1) = 0.54, p < .50)$	
Education: College	98(63%)	42(62%)
Less than college	57(37%)	26(38%)
	$(\chi^2(1) = 0.043, p < .90)$	
Age: Mean	36.4	37.2
Median	33.1	34.5
S.D.	13.3	13.1
Range	46(19-65)	49(19-68)
	$(t(221) = 0.17, n.s.)$	
SES Score: Mean	54.3	57.9
Median	58.0	60.5
S.D.	13.8	11.5
Range	50(25-75)	48(27-75)
	$(t(221) = 0.17, n.s.)$	

* Data kindly provided by S. Nelson.

It, too, is comprised of volunteers. The similarities could, for example, be reflective of the nature of those who volunteer for such studies.

4. Juror Evaluations of the Presentation

Following the presentation, the subjects were asked to indicate how realistic they considered the presentation to be and how well they understood the judge's instructions. Thirty-seven percent characterized the presentation as "very realistic", 53 percent as "fairly realistic", nine percent as "only a little realistic", and one person as "not at all realistic". Of the eight subjects who had been actual jurors before, four characterized it as "very realistic", three as "fairly realistic", and one as "only a little realistic". Thirty-four percent of the participants indicated they understood the judge's instructions "completely", 65 percent "fairly well", two jurors "only a little", and none "not at all". It would seem then that a reasonably good degree of mundane realism and effective communication of information was achieved.

Since the information presented the subjects was derived from a case which had actually occurred in Ottawa a check was made to determine if any of the participants recalled it. Ten did, but none remembered the actual outcome. Questioning of these ten revealed that their recollection was insubstantial, amounting to merely remembering "the Poppe Shoppe murder".

5. Decisions

Pre-deliberation and final decisions rendered by each jury are reported in Table 3.

Table 3: A BREAKDOWN OF PRE-DELIBERATION AND FINAL DECISIONS FOR ALL JURIES.

	<u>Pre-Deliberation Decisions</u>		<u>Final Decisions</u>	
	<u>Guilty</u>	<u>Not Guilty</u>	<u>Guilty</u>	<u>Not Guilty</u>
<u>Control Group</u>				
Jury 1	7	5	7	5
Jury 2	4	5	2	7
Jury 3	3	8	3	8
Jury 4	<u>3</u>	<u>8</u>	<u>0</u>	<u>11</u>
Total	17(49%)	26(60%)	12(28%)	31(72%)
<u>Experimental Group I (Favourable Evidence)</u>				
Jury 5	5	5	4	6
Jury 6	2	8	2	8
Jury 7	7	4	6	5
Jury 8	<u>2</u>	<u>7</u>	<u>2</u>	<u>7</u>
Total	16(40%)	24(60%)	14(35%)	26(65%)
<u>Experimental Group II (Unfavourable Evidence)</u>				
Jury 9	8	2	8	2
Jury 10	6	5	6	5
Jury 11	6	4	6	4
Jury 12	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>
Total	25(60%)	15(40%)	25(60%)	15(40%)
<u>Comparison Group</u>				
Jury 13	4	8	3	9
Jury 14	7	4	6	5
Jury 15	<u>3</u>	<u>6</u>	<u>3</u>	<u>6</u>
Total	14(44%)	18(56%)	12(38%)	20(62%)

(a) Pre-deliberation decisions

Overall, the jurors in the control group returned 40 percent guilty decisions and 60 percent not guilty. Three of four juries favoured acquittal, one jury by a simple majority (i.e. 4/5) and two by more than a two-thirds majority (i.e. 3/8). One jury favoured conviction by a simple majority. Considering that the majority decision of one jury disagreed with the remaining three and that the overall decisions were fairly evenly divided, it would appear that the evidence of the case did not clearly favour either acquittal or conviction--that is, it was fairly ambiguous. Such a case should hence be sensitive to the addition of new evidence.

In the first experimental group, 40 percent of the jurors favoured conviction and 60 percent acquittal, proportions which are identical to the control group. There is not a statistically significant difference between these two groups ($\chi^2(1) = 0.0002$, $p < .99$). One jury was evenly divided in decisions, while three favoured acquittal--one with a simple majority and two with greater than a two-thirds majority. It is clear that the addition of polygraph evidence favourable to the accused had no impact on these jurors before deliberation.

The second experimental group returned, overall, 60 percent guilty decisions and 40 percent not guilty. All four juries favoured conviction--three by a simple majority and one by greater than a two-thirds majority. Clearly, the addition of polygraph evidence unfavourable to the accused affected these jurors--60 percent returned guilty decisions compared to 40 percent in the control group. This is a statistically significant difference ($\chi^2(1) = 4.37$, $p < .05$).

In the comparison group, overall, 44 percent returned a guilty decision and 56 percent not guilty. Two of three juries favour acquittal--one by a simple majority and one by a two-thirds majority--while the third favoured conviction by a simple majority. The addition of the character witness testimony unfavourable to the accused only had a very slight effect when compared to the control group decisions--44 versus 40 percent guilty decisions. This is not a statistically significant difference, ($\chi^2(1)=0.012$, $p < .90$). Comparing this condition with the second experimental condition reveals that fewer guilty decisions were rendered in the comparison condition than in the second experimental condition -- 44 versus 60 percent guilty decisions. This is not, however, a statistically significant difference ($\chi^2(1)=2.52$, $p < .20$).

(b) Final Decisions

Overall, the control group jurors returned 28 percent guilty decisions and 72 percent not guilty. Only one jury reached a unanimous not guilty finding. Of the three remaining juries, two favour acquittal and one conviction. The inability of three juries to arrive at unanimity after 45 minutes deliberation could be considered added evidence that the control group case was ambiguous.

The final decisions of the first experimental group changed little from the pre-deliberation decisions -- overall, 35 percent guilty, 65 percent not guilty. None of the juries were unanimous -- three majorities favoured acquittal and one conviction. Compared to the control group the addition of the favourable polygraph evidence had a slight reverse effect -- 35 percent guilty decisions here versus 28 percent in the control group.

This difference is not, however, statistically significant ($X^2(1) = 0.63$, $p < .50$).

The overall decisions of the second experimental group did not change at all from the pre-deliberations -- 60 percent guilty, 40 percent not guilty. None of the juries were unanimous. All four favoured conviction at final decision. The addition of the unfavourable polygraph evidence had a clear impact -- 60 percent guilty here versus 28 percent in the control group. This is a statistically significant difference ($X^2(1) = 10.04$, $p < .01$).

The final decisions of the comparison group were, overall, 38 percent guilty and 62 percent not guilty. None of the three juries were unanimous. The final majority preferences were two juries for acquittal and one for conviction. The addition of the character witness testimony unfavourable to the accused had some effect when compared to the control group decisions -- 38 percent guilty here versus 28 percent in the control. This is not, however, a statistically significant difference ($X^2(1) = 0.78$, $p < .50$). Comparing this condition with the second experimental condition reveals that fewer guilty verdicts were rendered in the comparison group than in the second experimental group -- 38 versus 60 percent guilty decisions. This is a statistically significant difference ($X^2(1) = 4.45$, $p < .05$).

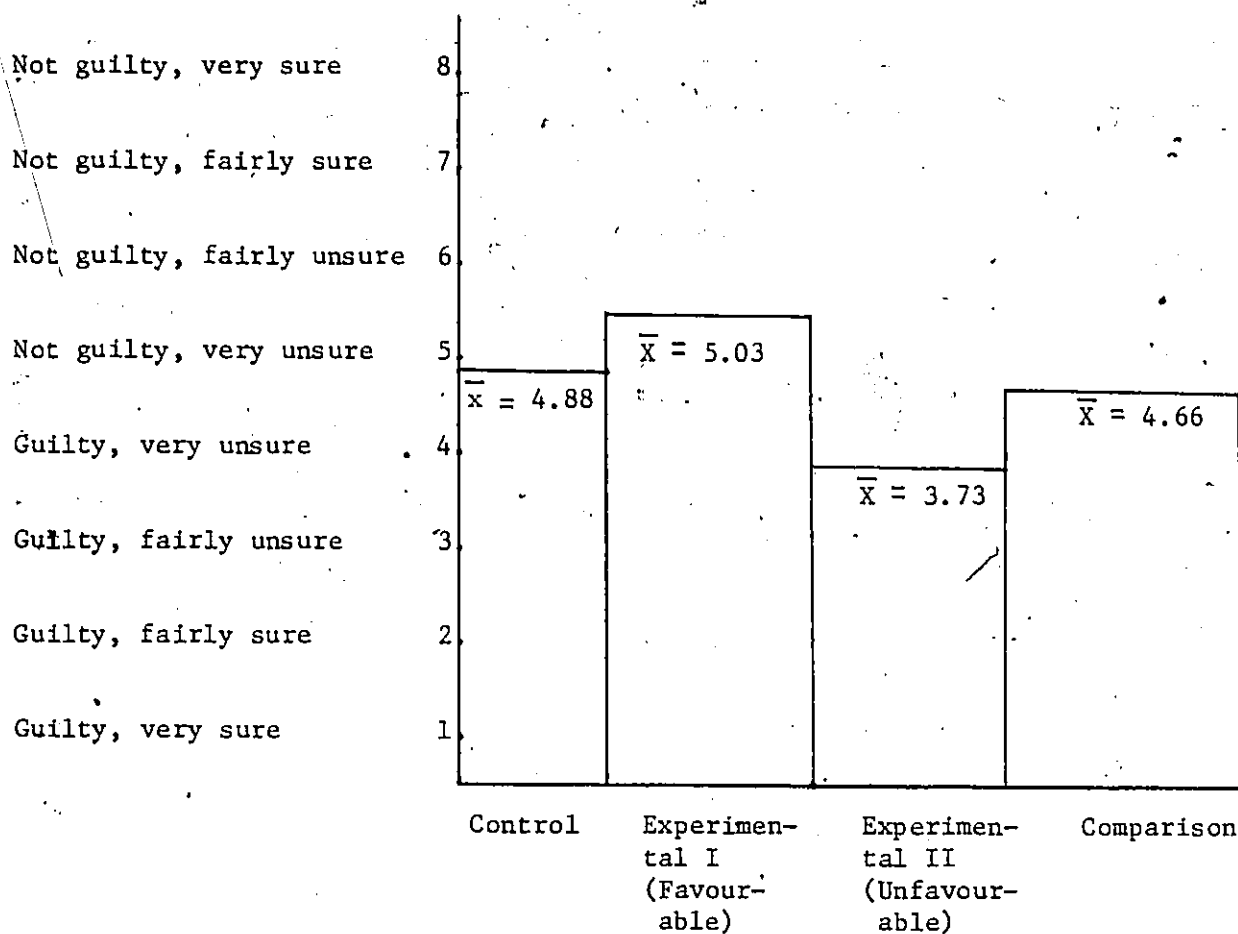
6. Guilt Scale Ratings

The jurors were asked not only to render dichotomous verdicts at pre-deliberation and final decision, but also to indicate the sureness of their decisions on a four-point scale. These two measures can be

combined to produce an eight-point guilt scale, ranging from "guilty, very sure" to "not guilty, very sure". While verdicts are considered a preferred dependent measure since they are required in a real trial situation, it is worthwhile to analyze the results of the guilt scale to determine if this produces findings consistent with the analysis of verdicts. This is particularly important because the results of Cavoukian and Heslegrave's (1980) experiment were rendered equivocal due to such inconsistencies between the two dependent measures.

(a) Pre-Deliberation Ratings

Table 4 graphically presents the mean guilt scale ratings at pre-deliberation for each condition, as well as the results of a series of t-tests of differences between conditions. The mean guilt scale rating for the control group of 4.88 -- or very near to "not guilty, very unsure" -- again suggests that this is an ambiguous case which should be sensitive to the addition of new evidence. Recalling Table 3, the verdict results at pre-deliberation for the control, first experimental, and comparison groups were very similar -- 40, 40 and 44 percent guilty respectively -- and there were no significant differences between them. Table 4 indicates that the mean guilt ratings in each of these conditions are also very similar -- 4.88, 5.03, and 4.66, respectively -- and that there are no statistically significant differences between them. The second experimental condition produced more guilty verdicts than both the control and comparison conditions, the differences between the second experimental and the control conditions being statistically significant, but not those between the second experimental and comparison conditions. Table 4 indicates that

Table 4: MEAN GUILT SCALE RATINGS BY CONDITION, PRE-DELIBERATION DECISIONSGuilt RatingsCondition

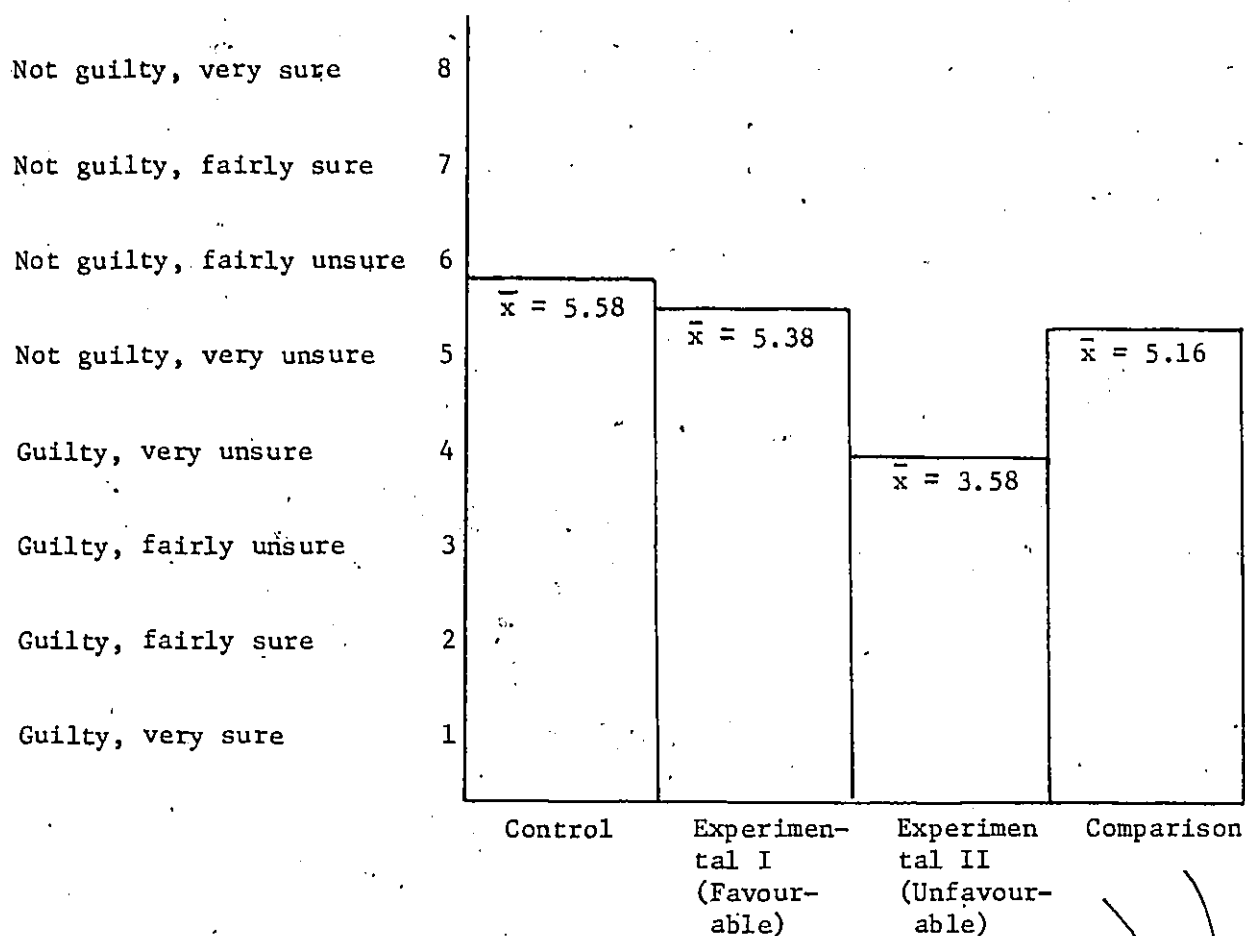
Control vs. Experimental I:	+(81) = 0.26, p = .80, n.s.
Control vs. Experimental II:	+(81) = 2.09, p < .05
Control vs. Comparison:	+(73) = 0.39, p = .70, n.s.
Experimental II vs. Comparison:	+(70) = 1.55, p = .13, n.s.
Experimental I vs. Comparison:	+(70) = 0.62, p = .54, n.s.
Experimental I vs. Experimental II:	+(78) = 2.31, p < .03

the second experimental condition also produced mean guilt ratings indicating a stronger degree of guilt than in the control and comparison conditions -- 3.73, 4.88 and 4.66 respectively -- and that the differences between the second experimental and control conditions are statistically significant ($t(81) = 2.09, p < .05$), but there are not statistically significant differences between the second experimental and comparison conditions.

In short, the results of the guilt scale ratings at pre-deliberation are, in all aspects, consistent with the results of the pre-deliberation verdicts.

(b) Final Ratings

Table 5 presents the same measures and tests for final guilt scale ratings. Again, these results are consistent with the results of the analysis of final verdict decisions: among the control, first experimental, and comparison conditions there were very similar final verdicts -- 28, 35 and 38 percent guilty respectively -- with there being no statistically significant differences between these conditions. Table 5 indicates the final mean guilt scale ratings are also very similar among these conditions -- 5.58, 5.38 and 5.16 respectively -- with there being no statistically significant differences between these conditions. Final verdicts indicated the second experimental condition generated more guilty verdicts than either the control and comparison conditions -- 60, 28 and 35 percent guilty respectively -- with the differences between both the second experimental and control conditions and the second experimental and comparison conditions being statistically significant. Table 5 indicates the mean guilt scale ratings are different among these three

Table 5: MEAN GUILT SCALE RATINGS BY CONDITION, FINAL DECISIONSGuilt RatingsCondition

Control vs. Experimental I: $t(81) = 0.32, p = 0.75, n.s.$
 Control vs. Experimental II: $t(81) = 3.12, p < .01$
 Control vs. Comparison: $t(73) = 0.63, p = 0.53, n.s.$
 Experimental II vs. Comparison: $t(70) = 2.24, p < .03$
 Experimental I vs. Comparison: $t(70) = 0.31, p = .75, n.s.$
 Experimental I vs. Experimental II: $t(78) = 2.71, p < .01$

conditions -- 3.58, 5.58 and 5.16 respectively -- and that there are statistically significant differences between the second experimental and control conditions ($t(81) = 3.12, p < .01$) and the second experimental and the comparison conditions ($t(70) = 2.24, p < .03$).

Carrying the comparison of verdicts and guilt scale ratings further, as the number of guilty verdicts increases or decreases -- either among conditions or from pre-deliberation to final decision -- so does the guilt scale correspondingly change in the appropriate direction at all times. As just one example, the first experimental group registered a slight increase (2) in the number of not guilty decisions from pre-deliberation to final decision; this change is reflected in changes in the mean guilt scale score in the appropriate direction, i.e. moving slightly closer -- from 5.03 to 5.38 -- to the "not guilty, very sure" end of the guilt scale.

In summary, there is great consistency between the results of the guilt scale ratings and verdicts such the same conclusions may be drawn by utilizing either dependent measure.

7. Evidence of Undue Influence

Undue influence has been operationally defined in four ways for the purposes of this study. These definitions will be applied to the final verdict decisions only since it is these decisions that "count". The first definition -- 100 percent decision concurrence with the findings of the polygraph -- did not, of course, occur: not one of the eight juries in the experimental conditions produced a unanimous verdict

consistent with the findings of the polygraph evidence presented. Hence the impact of the addition of both favourable and unfavourable polygraph evidence was not undue according to this definition.

The second operational definition -- a statistically significant impact at a probability level less than .01 -- requires a comparison of the decisions of the control and experimental groups. For the first experimental group the addition of the polygraph evidence did not generate additional not guilty decisions over and above the control group, but rather had a slight reverse effect. Hence the addition of polygraph evidence favourable to the accused was not undue according to this definition. The second experimental case did, however, exert an effect on decisions in the appropriate direction, the differences in decisions between this and the control group being statistically significant at a probability less than .01. Hence, according to the second definition, the addition of polygraph evidence unfavourable to the accused was undue.

The third definition of undue influence -- a significantly greater effect (at $p < .05$) for polygraph evidence when compared to character witness testimony -- requires a comparison of the experimental and comparison groups. Since the appropriate comparison for the first experimental group (i.e. character witness testimony favourable to the accused) was abandoned such a comparison cannot be made, though this is a rather moot consideration anyway since this evidence did not have an impact in the appropriate direction. However, a comparison can be made between the second experimental (unfavourable polygraph) and comparison (unfavourable character witness) conditions, and here there were differences in

decisions at a probability level less than .05. It should be noted here that the addition of the unfavourable character witness testimony did "work" in the appropriate direction, i.e. generating more (38% vs. 28%) guilty decisions than the control condition, and that the unfavourable polygraph evidence simply worked more strongly. Hence, according to this third definition of undue influence, the addition of polygraph evidence unfavourable to the accused was undue.

The fourth definition of undue influence requires the polygraph evidence to "work" in the appropriate direction and for evidence favourable to the accused to have a significantly stronger effect than evidence unfavourable to the accused. This did not occur. The favourable evidence did not work in the expected direction, generating fewer guilty decisions (65%) than the control (72%), though this was not a statistically significant difference. The unfavourable evidence did work in the expected direction, generating more guilty decisions (60%) than the control case (28%); a statistically significant difference. Hence the effect of the addition of polygraph evidence was an undue one according to this final operational definition.

8. Social Characteristics and Decision-Making

The relationship between various social characteristics and decision-making has been the subject of considerable study in simulated jury research. While some studies have revealed that there are relationships, the findings to date have been inconsistent and equivocal (Davis et. al., 1977). There are two reasons for exploring such relationships

here. The first is to contribute to the existing body of knowledge in this area. Second, recalling Table 1A, it was found that there were some significant differences between conditions for the four basic social characteristics. In the event of a finding of a relationship between one or more social characteristics and decision-making, it would be necessary to determine whether the variance in decision-making between conditions is attributable to these differences in social characteristics and not just the experimental manipulation of the evidence. Decision-making here refers to two types: final verdict decisions and final decision concurrence or non-concurrence with the polygraph evidence.

(a) Final Verdict Decisions

Tables 2A, 3A, 4A and 5A present a series of cross tabulations -- for each condition and conditions combined -- of final verdict decisions with sex, socioeconomic status, education and age respectively. Each social characteristic has been dichotomized: sex is, of course, male and female; socioeconomic status is lower and higher, arrived at by dividing at the median score; education is college education and less than college; and age is less than 33 years of age and 33 years or older, arrived at by dividing at the median age. The measure of association utilized is Yule's Q.

A summary of the associations found in these cross tabulations is presented in Table 6. The criteria for deciding whether a social characteristic has exerted an influence on decision-making would be if there is at least a moderate relationship overall and this relationship is regular across conditions. This would suggest that a social

TABLE 6: RELATIONSHIPS BETWEEN SOCIAL CHARACTERISTICS AND FINAL VERDICT DECISIONS

<u>Condition</u>	<u>Association (Yule's Q)</u>			
	<u>Sex</u>	<u>SES</u>	<u>Education</u>	<u>Age</u>
Control	0.26	0.07	0.35	-0.52
Experimental I	-0.35	0.29	-0.14	-0.46
Experimental II	-0.05	-0.37	0.30	-0.34
Comparison	-0.46	0.31	0.84	0.00
Conditions Combined	-0.12	0.05	0.37	-0.34

characteristic is exerting a consistent influence regardless of the type of evidence presented. Table 6 indicates that for sex there is, overall, only a low³ negative relationship (Yule's Q = -0.12). Moreover, there is not a consistent relationship between sex and decisions across conditions -- there is a negligible negative relationship in one condition, a low positive relationship in another, and moderate negative relationships in the remaining two conditions. Hence, sex type did not exert a regular influence on decision-making.

In regard to socioeconomic status, Table 6 indicates there is a negligible negative relationship (Yule's Q = -0.05) with decisions overall, and no consistency of relationships across conditions. There is a negligible positive relationship in one condition, a moderate negative relationship in another, and low and moderate positive relationships in the remaining two conditions. Hence there is not a regular relationship between lower and higher socioeconomic status and decisions rendered.

³ The conventions for describing the relationships found by Yule's Q are:

- | | |
|---|--|
| (a) $\pm .70$ or higher -- very strong | (d) $\pm .10$ to $\pm .20$ -- low |
| (b) $\pm .50$ to $\pm .69$ -- substantial | (e) $\pm .01$ to $\pm .09$ -- negligible |
| (c) $\pm .30$ to $\pm .49$ -- moderate | (f) $\pm .00$ -- no |

For education, Table 6 indicates that there is a moderate positive relationship (Yule's $Q = 0.37$) between educational level and decision-making. There is also a degree of consistency in this relationship across conditions: with the exception of the low negative relationship in the first experimental condition, there are positive relationships in the three remaining conditions, two moderate and one very strong. Hence it could be concluded that educational level may have exerted an influence on decision making. Table 4A illustrates the nature of this relationship: overall, college educated jurors tended to return not guilty decisions -- 66 percent of the college educated jurors voted not guilty compared to 47 percent for those with less than a college education. This is a statistically significant difference ($\chi^2(1) = 5.37$, $p = .02$).

In regard to age, Table 6 indicates that there is a moderate negative relationship (Yule's $Q = -0.34$) between age and decision-making overall. There also is a fairly consistent relationship across conditions; although there is no relationship in the comparison condition, there are positive relationships in the remaining three conditions, two moderate and one substantial. Hence, it could be concluded that age differences did exert an influence on decision-making. Table 5A illustrates the nature of this relationship. Overall, those less than the age of 33 tended to return not guilty decisions -- 69 percent of those less than 33 years of age returned not guilty decisions compared to 52 percent of those 33 years of age or older. This is a statistically significant difference ($\chi^2(1) = 4.49$, $p = .03$).

In sum, then, differences in sex and socioeconomic status apparently exerted very little influence on decision-making, but differences in educational level and age did exert some influence.⁴ In order to determine whether education and age could be confounding factors in the decision comparisons between conditions it is necessary to determine whether educational level and age are balanced between conditions. Recalling Table 1, it was found that educational level was fairly well balanced between conditions, the proportions of college-educated subjects varying from 57.5 percent to 67.5 percent in the four conditions. The differences between conditions were not statistically significant (see Table 1A). Hence, while educational level exerted an influence on decision-making, this influence would be fairly constant across conditions and not substantially affect the comparison of decisions between conditions. In regard to age, however, there was a statistically significant difference between the control and first experimental group -- the first experimental group being significantly older -- but no significant differences between the other groups (see Table 1A). The difference in age between the control and first experimental group could be a factor which confounds the comparison of decisions of these two groups. Since those less than the age

⁴ An alternate method of analysis corroborates this conclusion. Results of a step-wise multiple regression analysis with final decision as a dependent variable and sex, socioeconomic status, education, age and condition (evidence type) as independent variables is presented in Table 6A. This table indicates that while the five independent variable combined account for only a relatively small amount (8.93%) of the variance in decision-making, education accounts for the most variance (3.46%), then age (2.62%), then condition (1.46%), while socioeconomic status and sex contribute very little to the variance (0.50% and 0.21% respectively).

The procedure of utilizing cross tabulations here was chosen because it can be more informative -- it can illustrate not only whether there is a relationship, but also the nature of that relationship.

of 33 tended to vote not guilty and 54 percent of the control group were less than 33 compared to 35 percent in the first experimental group (see Table 5A), the decisions of this latter group could have been different (i.e. more not guilty) had they been younger.

There is a means of correcting the age differences between these two groups. One jury (Jury 7) in the first experimental condition, was comprised of jurors who were all 33 years of age or older. It was this jury which returned a final decision preference -- a majority favouring conviction -- at odds with the final decisions of the remaining three juries in that condition -- all majorities favouring acquittal. By removing this jury from consideration a comparison of the social characteristics and decisions of the control group and the three remaining juries in the first experimental group can be made. The results of this comparison are presented in Table 7. This table indicates that with this jury removed there are no significant differences between these two groups in terms of sex composition ($X^2(1) = 0.39$, $p < .70$), educational level ($X^2(1) = 0.43$, $p < .70$), socioeconomic status ($X^2(1) = 0.17$, $p < .70$), or age ($X^2(1) = 0.19$, $p < .70$). Thus the effects of these social characteristics on decision-making are held fairly constant. Given this, Table 7 indicates that there is not a significant difference ($X^2(1) = 0.0008$, $p < .98$) in the final decisions rendered by the control and corrected first experimental groups. In fact, the decisions rendered in these two groups are proportionately identical -- 28 percent not guilty. Hence, with this correction for age differences, a conclusion remains unaltered -- the addition of polygraph

TABLE 7: COMPARISON OF THE CONTROL GROUP AND CORRECTED FIRST EXPERIMENTAL GROUP

	Control	Corrected Experimental	χ^2	Probability
Sex: Male	21 (49%)	12 (41%)	0.39	$p < .70$
Female	22 (51%)	17 (59%)		
SES: Lower (<58)	24 (56%)	15 (52%)	0.17	$p < .70$
Higher (+58)	19 (44%)	14 (48%)		
Education: College	22 (63%)	19 (66%)	0.43	$p < .70$
Less Than College	16 (36%)	10 (34%)		
Age: Less than 33	23 (53.5%)	14 (48%)	0.19	$p < .70$
33 or older	20 (46.5%)	15 (52%)		
Decisions: Guilty	12 (28%)	8 (28%)	0.0008	$p < .98$
Not Guilty	31 (72%)	21 (72%)		

evidence favourable to the accused has no demonstrable impact on jury decision-making.⁵

(b) Concurrence with the Polygraph Findings

Social characteristics could also be related to final decision concurrence (e.g. not guilty with favourable polygraph evidence) or non-concurrence (e.g. guilty with favourable polygraph evidence) with the polygraph evidence. Tables 7A, 8A, 9A and 10A present a series of cross-tabulations -- for each experimental condition and both experimental conditions combined -- of final decision concurrence with sex, socio-economic status, education and age respectively. Yule's Q, again, is the measure of association utilized; a summary of these associations is presented in Table 8.

TABLE 8: RELATIONSHIPS BETWEEN SOCIAL CHARACTERISTICS AND FINAL DECISION CONCURRENCE WITH THE POLYGRAPH EVIDENCE

<u>Condition</u>	<u>Association (Yule's Q)</u>			
	<u>Sex</u>	<u>SES</u>	<u>Education</u>	<u>Age</u>
Experimental I	0.35	-0.29	0.14	0.46
Experimental II	-0.05	-0.36	0.29	-0.34
Total Experimental	0.15	0.32	0.22	0.03

⁵ One other possible social characteristic -- punitiveness -- was considered in this study. The measure utilized for this was having the jurors, assuming guilt, choose between six possible sentences -- ranging from twenty-five years imprisonment to no imprisonment -- after the jury deliberations, i.e. after decisions had been rendered. This measure was abandoned, however, because of the significant danger of responses being confounded by the experimental situation, i.e. that, say a final not guilty decision by a juror could result in a less severe punishment being selected. This, in fact, proved to be the case -- there was a substantial relationship between final decision and higher or lower punishment ($Q = 0.64$), jurors voting not guilty tending to select less harsh punishments.

Table 8 indicates that for sex there is, overall, a low relationship with final decision concurrence and that this relationship is inconsistent -- there is moderate positive relationship in the first experimental condition and a negligible negative relationship in the second experimental condition. Hence, sex type appears not to have exerted any influence on decision concurrence with the polygraph evidence.

Table 8 indicates that for socioeconomic status there is a moderate positive relationship with final decision concurrence overall and in the second experimental group, with there being very close (0.29) to a moderate positive relationship in the second experimental group. Given this regular moderate relationship it could be concluded that socioeconomic status may have exerted an influence on final decision concurrence with the polygraph evidence. Table 8A reveals the nature of this relationship: overall, jurors with higher socioeconomic status tended to render final decisions concurring with the polygraph findings -- 72 percent of those with higher socioeconomic status scores concurred compared to 57 percent of those with lower socioeconomic status scores. This is not, however, a statistically significant difference ($\chi^2(1) = 2.03, p < .20$). Further, any effects of this variable would not confound the findings since, recalling Table 1A, there were not any significant differences between the two experimental conditions in socioeconomic status score ($t(78) = 0.26, p = .80$).

Table 8 indicates that for education there is only a low positive relationship overall and in each individual condition. Hence,

education appears not to have exerted any substantial influence on final decision concurrence.

Finally, Table 8 indicates that for age there is, overall, a negligible positive relationship with final decision concurrence. This overall relationship is the product of inconsistent moderate relationships in each of the experimental conditions which effectively cancel each other out when totalled -- there is moderate positive relationship in the first experimental condition and a moderate negative relationship in the second experimental condition. Since these relationships are not consistent, it does not appear that age exerted a regular influence on final decision concurrence.

In sum, differences in sex, education and age apparently exerted very little influence on final decision concurrence with the polygraph evidence. Differences in socioeconomic status are moderately and regularly associated with final decision concurrence, though the differences are not statistically significant and any influence would be consistent across both experimental conditions, given the similarities of the two conditions on this dimension.

9. The Effects of Deliberation

The effects of deliberation can be studied by examining shifts in decisions and sureness of decision from pre-deliberation to final decision, with a view to determining whether there is evidence of a majority decision-making process at work. This is of considerable importance. It has been found, for example, that three of four juries in the control

condition returned majority decisions favouring acquittal at pre-deliberation while all four juries in the second experimental group returned majority decisions favouring conviction at pre-deliberation. If the majority decision-making process held for all of these juries and deliberations had been permitted to continue until unanimity was reached, then it could be concluded that the addition of polygraph evidence unfavourable to the accused could change the final outcome of a jury trial -- three of four juries without this evidence would acquit, while all juries with this evidence would convict.

Table 9 indicates the type of majority (simple or two-thirds or greater) for each jury at pre-deliberation and presents changes in decisions from pre-deliberation to final decision for each jury. This table indicates that at pre-deliberation decision there were seven simple majorities (i.e. a majority, but less than two-thirds), seven juries with a majority of two-thirds or more, and one jury -- evenly divided -- with no majority.

(a) Changes in Decisions

Table 9 indicates that there were only 13 decision changes from pre-deliberation to final decision; ninety-two percent of these jurors did not change their decisions from pre-deliberation. There were no decision changes at all in seven juries -- four with simple majorities and three with two-thirds or greater. Twelve of the thirteen decision changes occurred in the seven remaining juries with majorities, the other change occurring in the jury with no majority position at pre-deliberation. There is some evidence of a majority decision-making process at play here --

Table 9: CHANGES IN JUROR DECISIONS FROM PRE-DELIBERATION TO FINAL DECISIONS, BY MAJORITY TYPE.

<u>Condition</u>	<u>Majority Type at Pre-Deliberation</u>	<u>Decision Changes</u>		
		<u>No Change</u>	<u>To Majority</u>	<u>To Minority</u>
Control				
Jury 1	Simple	12	0	0
Jury 2	Simple	7	2	0
Jury 3	Two-thirds	11	0	0
Jury 4	Two-thirds	8	3	0
Total		38	5	0
Experimental I				
Jury 5	No majority	9	-(1 change)	-
Jury 6	Two-thirds	8	1	1
Jury 7	Simple	10	0	1
Jury 8	Two-thirds	9	0	0
Total		36	1	2
Experimental II				
Jury 9	Two-thirds	8	1	1
Jury 10	Simple	11	0	0
Jury 11	Simple	10	0	0
Jury 12	Simple	9	0	0
Total		38	1	1
Comparison				
Jury 13	Two-thirds	11	1	0
Jury 14	Simple	10	0	1
Jury 15	Two-thirds	9	0	0
Total		30	1	1
Overall Total		142 (92%)	8 (5.4%)	4 (2.6%)

of the twelve jurors who changed their decisions, eight shifted to the majority position and four to the minority. While these numbers are small they should be placed in the context of the proportion of those who could shift decisions from the minority to the majority or from the majority to the minority. Overall, 53 jurors originally stood in the minority position and the eight of these who shifted to the majority position comprise fifteen percent of those who could move in this direction. Conversely, 92 jurors originally stood in the majority position and the four of these who changed to the minority position comprise only four percent of those who could move in this direction.

There is also some evidence that a two-thirds or greater majority exerts more pressure upon the minority for change than does a simple majority. Table 9 indicates that of the twelve decision changes, four occurred in juries with simple majorities, two jurors moving to the majority position and two to the minority position. Considering that in these juries with simple majorities 43 jurors originally stood in the majority position and 28 in the minority position, the two changes to the majority comprise seven percent of those who could shift in this direction, while the two who moved to the minority constitute five percent of those who could move this way, i.e. there is not substantially greater shift to the majority either in terms of volume or proportion. The remaining eight decision changes occurred in juries with two-thirds or greater majorities at pre-deliberation, six jurors shifting to majority position and two to the minority position. Considering that in these seven juries with two thirds or greater majorities 53 jurors originally stood in the

majority position and 19 in the minority position, the two shifts to the minority position comprise only four percent of those who could move in this direction, while the six who shifted to majority position comprise .32 percent of those who could move in this direction, i.e. there is substantially greater movement to the majority position in these juries in terms of both volume and proportion. It should be noted as a qualifier, however, that half of these changes to the majority for this latter class of majorities is attributable to one jury (Jury 4). Hence, the trend in changes in decisions appears to provide some slight support for a two-thirds majority decision-making process, but not a simple majority decision-making process at work here.

Whether this trend would have continued had the deliberations run their full course is, of course, unknown. Further, the above analysis concerns trends overall; making predictions for individual juries on the basis of such a small number of decision changes would be unwise. In regard to specific juries, of the seven juries with two-thirds majorities three exhibited no change in decisions (Juries 3, 8 and 15), two exhibited changes only in the direction of the majority (Juries 4 and 13), while two exhibited changes which cancelled each other out (Juries 6 and 9). Hence, only two of these seven juries clearly suggest a two-thirds decision-making process at work. Of the seven juries with simple majorities, four exhibited no change (Juries 1, 10, 11 and 12), one exhibited changes only in the direction of the majority (Jury 2), and two exhibited changes only in the direction of the minority (Juries 7 and 14). This is added support for the conclusion that there is no evidence of a simple majority decision-making process at work here.

(b) Changes in Sureness of Decision

Another and more discriminating means of determining the effects of deliberation is to examine changes in the expressed sureness of decisions from pre-deliberation to final decisions. Table 10 describes these changes. One very evident effect of deliberation was to firm the decisions of these jurors -- Table 10 indicates that only 18.7 percent of the jurors were "very sure" of their decisions at pre-deliberation, while 56.1 percent were very sure at final decision. These changes in sureness of decision are statistically significant ($\chi^2(3) = 90.4, p < .01$).

Table 10: CHANGES IN SURENESS OF DECISION (ALL GROUPS COMBINED)

<u>Sureness</u>	<u>Pre-Deliberation Decision</u>	<u>Final Decision</u>
Very Sure	29 (18.7%)	87 (56.1%)
Fairly Sure	93 (60.0%)	53 (34.2%)
Fairly Unsure	29 (18.7%)	14 (9.0%)
Very Unsure	4 (2.6%)	1 (0.9%)
Total	155 (100%)	155 (100%)

$$\chi^2(3) = 90.4, p < .01^*$$

* Since the numbers in the cells of the "very unsure" category are less than 5, the "fairly unsure" and "very unsure" categories were collapsed for this calculation.

Changes in sureness of decision may also be examined with a view to determining whether there is evidence of a majority decision-making process at work. This may be done by plotting the direction of change in sureness of decision--either toward the majority or minority

preference established at predeliberation--as is described in Table 11. This table indicates that, overall, 34.5 percent of the jurors in the fifteen juries with an initial majority preference did not change the sureness of their decisions, 44.8 percent changed in the direction of the initial majority preference, and 20.7 percent changed in the direction of the minority preference. Clearly, when jurors do change in the sureness of their decisions there is a strong tendency to do so in the direction of the initial majority preference--of those that did change, 68.4 percent changed in the direction of the majority. The statistical significance of these changes in sureness of decision may be calculated by comparing the observed frequencies of changes in each category with theoretical changes. To determine the theoretical frequencies one should consider that these jurors had three options--no change, change to the majority, or change to the minority--and had these changes occurred by chance alone one would expect an equal distribution (i.e. one third) in each category. Comparing the observed frequencies with these theoretical or chance frequencies reveals that there are statistically significant differences between the two ($\chi^2(2) = 12.8$, $p < .01$).

The figures of 44.8 percent changes in the direction of the majority preference and 20.7 percent changes in the direction of the minority can be corrected, if one only considers those who could have changed in either direction. There were, for example, 29 jurors who were very sure of their decisions at pre-deliberation, 19 being aligned with the initial majority preference and 10 with the initial minority preference. Since these jurors were unable to change the sureness of their decisions

Table 11: DIRECTION OF CHANGES IN SURENESS OF DECISION

<u>Condition</u>	<u>Majority Type at Pre-Deliberation</u>	<u>Direction of Change in Sureness</u>		
		<u>No Change</u>	<u>To Majority</u>	<u>To Minority</u>
<u>Control</u>				
Jury 1	Simple	3	7	2
Jury 2	Simple	3	5	1
Jury 3	Two-thirds	4	5	2
Jury 4	Two-thirds	<u>3</u>	<u>8</u>	<u>0</u>
Total		13 (30.2%)	25 (58.1%)	5 (11.6%)
<u>Experimental I</u>				
Jury 5	No majority	-	-	-
Jury 6	Two-thirds	2	5	3
Jury 7	Simple	4	3	4
Jury 8	Two-thirds	<u>2</u>	<u>6</u>	<u>1</u>
Total		8 (26.7%)	14 (46.7%)	8 (26.7%)
<u>Experimental II</u>				
Jury 9	Two-thirds	2	5	3
Jury 10	Simple	4	4	3
Jury 11	Simple	4	4	2
Jury 12	Simple	<u>3</u>	<u>3</u>	<u>3</u>
Total		13 (32.5%)	16 (40%)	11 (27.5%)
<u>Comparison</u>				
Jury 13	Two-thirds	6	2	4
Jury 14	Simple	4	5	2
Jury 15	Two-thirds	<u>6</u>	<u>3</u>	<u>0</u>
Total		16 (50%)	10 (31.3%)	6 (18.8%)
<u>Overall Total</u>		50 (34.5%)	65 (44.8%)	30 (20.7%)

Condition totals only: $X^2(6) = 9.45$, $p < .20$, n.s.

any further toward the majority and minority positions respectively they can be excluded from consideration. By doing so, an even stronger tendency to move in the direction of the initial majority preference is revealed--51.6 percent of those able to move in the direction of the majority did so, compared to only 22.2 percent of those able to move in the direction of the minority. Table 11 indicates that changes in sureness of decision did vary somewhat among conditions. These differences are not, however, statistically significant ($X^2(6) = 9.45$, $p < .20$, n.s.).

Since the above analysis strongly suggests that a majority decision-making process may have had an effect on deliberating outcomes it is worthwhile to attempt to determine whether there are any differences in changes in sureness of decision between those juries with an initial simple majority preference and those with a two-thirds or greater initial majority preference. A breakdown of changes in sureness of decision is presented in Table 12.

Table 12: CROSS-TABULATION OF DIRECTION OF CHANGE IN SURENESS OF DECISION BY MAJORITY TYPE.

<u>Direction of Change</u>	<u>Type of Majority</u>		<u>Total</u>
	<u>Simple</u>	<u>Two-thirds</u>	
No change	25 (34.3%)	25 (34.7%)	50
Toward Majority	31 (42.4%)	34 (47.2%)	65
Toward Minority	<u>17 (23.3%)</u>	<u>13 (18.1%)</u>	<u>30</u>
Total	73 (100%)	72 (100%)	145

$$X^2(4) = 0.66, p > .90, \text{ n.s.}$$

Table 12 indicates that while there is a slight tendency for juries with a two-thirds or greater initial preference to produce greater changes in the direction of the majority preference than those juries with simple majority initial preferences--47.2 and 42.4 percent, respectively--the differences between these two majority types are not statistically significant. In short, there is no evidence here that a two-thirds initial majority produces greater changes toward the majority position in terms of sureness of decision than does an initial simple majority.

(c) Decision Reinforcement

At first blush, the analysis of changes in sureness of decision does strongly suggest that a majority decision-making process has taken place among these juries. However, a check is required here to ensure that these results are not solely the product of a reinforcement or strengthening of pre-deliberation decisions which, if occurring, would lead to different conclusions. As an illustration of this, assume that in a ten-man jury seven jurors initially voted "guilty, fairly sure" and three jurors "not guilty, fairly sure" and that at final decision they all maintain their initial verdict preferences, but all "firm up" or reinforce their initial decisions, i.e. seven voting "guilty, very sure" and three "not guilty, very sure". A simple count of changes in sureness of decision would indicate seven moving toward the initial majority preference and three toward the minority, this suggesting a majority decision-making process at work. However, what has really occurred here is that the deliberation has served only to reinforce the jurors' own initial preferences and there, in fact, has been a polarization of opinion. Hence it is necessary to determine

whether the observed changes in sureness of decision are the product of a simple reinforcement of pre-deliberation decisions or not.

Table 13 presents a breakdown, jury by jury and condition by condition, of changes in sureness of decision according to whether these changes reinforced or did not reinforce the individual jurors' initial preference. This table indicates that, overall, 34.5 percent did not change from their original decision, 48.3 percent reinforced their original decisions, and 17.2 percent did not reinforce their original decisions. While there are variations in these proportions between conditions, these differences are not statistically significant. Excluding those who did not change the sureness of their decisions, 73.7 percent of those who did change simply reinforced their original decisions. In short, these particular jurors did not change the "direction" of their decisions but simply expressed stronger opinions at final decision than at pre-deliberation. However, a small number of jurors--the 25 "hot reinforced"--did change the direction of their decisions after deliberation in the sense of being "pulled away" from their original positions, e.g. from "not guilty, sure" to "not guilty, fairly unsure".

One can plot these changes or movements according to where the jurors stood--either in a majority or minority position--at pre-deliberation. These movements are presented in Table 14 by majority type and in total for all juries with majorities of any kind. In reading this table one should keep in mind that a juror who originally stood in the majority position and simply reinforced his/her decision, of course, remained (more strongly) in the majority position, while one who stood in

Table 13: REINFORCEMENT OF DECISIONS AFTER DELIBERATIONS BY JURY AND CONDITION.

<u>Condition</u>	<u>Decision Reinforcement</u>		
	<u>No Change</u>	<u>Reinforced</u>	<u>Not Reinforced</u>
Control			
Jury 1	3	6	3
Jury 2	3	4	2
Jury 3	4	5	2
Jury 4	<u>3</u>	<u>5</u>	<u>3</u>
Total	13 (30.2%)	20 (46.5%)	10 (23.3%)
Experimental I			
Jury 5	-	-	-
Jury 6	2	3	5
Jury 7	4	6	1
Jury 8	<u>2</u>	<u>7</u>	<u>0</u>
Total	8 (26.7%)	16 (53.3%)	6 (20.0%)
Experimental II			
Jury 9	2	4	4
Jury 10	4	6	1
Jury 11	4	4	2
Jury 12	<u>3</u>	<u>6</u>	<u>0</u>
Total	13 (32.5%)	20 (50.0%)	7 (17.5%)
Comparison			
Jury 13	6	5	1
Jury 14	4	6	1
Jury 15	<u>6</u>	<u>3</u>	<u>0</u>
Total	15 (38.1%)	14 (33.3%)	2 (4.7%)
Overall Total	50 (34.5%)	70 (48.3%)	25 (17.2%)

Condition totals only: $\chi^2(6) = 6.71, p < .40, n.s.$

Table 14: DIRECTION OF CHANGES IN SURENESS OF DECISION BY ORIGINAL POSITION AND MAJORITY TYPE

<u>Majority Type</u>	<u>Direction of Change</u>	<u>Original Position</u>		<u>Total</u>
		<u>Majority</u>	<u>Minority</u>	
Two-thirds Majority Juries	Reinforced	27 (80%)	4 (58.3%)	32
	Not Reinforced	<u>8</u> (20%)	<u>7</u> (41.7%)	<u>15</u>
	Total	35 (100%)	12 (100%)	47
Simple Majority Juries	Reinforced	25 (86.2%)	13 (68.4%)	38
	Not Reinforced	<u>4</u> (13.8%)	<u>6</u> (31.6%)	<u>10</u>
	Total	29 (100%)	19 (100%)	48
All Juries With Majorities	Reinforced	52 (81.3%)	18 (58.1%)	70
	Not Reinforced	<u>12</u> (18.8%)	<u>13</u> (41.9%)	<u>25</u>
	Total	64 (101.1%)	31 (100%)	95

All Juries: $\chi^2(1) = 5.79, p < .02$

the majority position and did not reinforce his/her decision after deliberation was pulled away from his/her original position, i.e. toward the minority position. Similarly, a juror who stood in the minority position at pre-deliberation and reinforced his/her opinion at final decision remained (more strongly) in the minority position, while one who stood in the minority position and did not reinforce his/her initial decision was pulled away from his/her original position, i.e. toward the majority position." Examining the totals for all juries with majorities at pre-deliberation presented in Table 14 reveals that there is a much stronger tendency for those originally in the minority positions to be pulled away from their original positions than there is for those who originally stood in the majority--41.9 percent of those in the minority were pulled away from their original positions, compared to only 18.8 percent of those originally in the majority position. These differences are statistically significant ($\chi^2(1) = 5.79, p < .02$). Table 14 indicates that, breaking these results down by majority type at pre-deliberation, there is a slightly greater tendency for two-thirds majority juries to pull away a greater proportion of jurors from the minority position than for simple majority juries to do so--41.7 percent and 31.6 percent, respectively, were pulled away. These differences are not, however, statistically significant ($\chi^2(1) = 2.16, p < .20$).

While the above analysis would suggest that a majority decision-making process may have been at work among those jurors who changed the direction of their initial decisions, a significant caution must be pointed out. Since there must, by definition, be a greater number of jurors originally standing in the majority position than there are in the minority

position an examination of proportionate movement can, at times, be misleading. An examination of the simple number of movements within this small group suggests different conclusions: Table 14 indicates that, overall, thirteen jurors originally in the minority position changed direction toward the majority compared to twelve jurors in the converse situation, only a very slight difference. Among the simple majority juries these numbers were, respectively, six and four jurors, while among the two-thirds or greater majority juries there was actually greater movement to the minority position--eight jurors moving in this direction compared to seven moving to the majority position. In short, a simple count of movements provides little evidence of a majority decision-making process at work among these juries.

In summary, there were few changes in decisions from pre-deliberation to final decision, these changes providing some slight evidence of a two-thirds majority decision-making process at work, but not a simple majority one. Slightly more than one-third of these jurors did not change the sureness of their decisions, from pre-deliberation to final decision. Of those who did change the sureness of their decisions, almost three-quarters strengthened or reinforced their pre-deliberation decisions, this suggesting a polarization of opinions occurring among these jurors. Among the small proportion--less than one-fifth of the total--who did change the sureness of their decisions and did not reinforce their initial decisions there is, in proportionate terms, evidence of a majority decision-making process at work, but this is misleading--in terms of absolute numbers of movements either to the majority or minority there is no evidence of a majority decision-making process among these jurors.

10. Comparison with Previous Results

Since the same case materials and procedures were used in this study and the one reported by Markwart and Lynch (1979), a comparison is able to be made between the decisions rendered in the control and experimental groups of this study and those in the study by Markwart and Lynch, which utilized a student population.

The decisions rendered in Markwart and Lynch's study are reproduced in Table 11A (Appendix). These results may be compared with those already reported in Table 3. In regard to pre-deliberation decisions, the majority decisions rendered by the individual juries are identical in the control groups (3 guilty, 1 not guilty), first experimental or favourable polygraph groups (2 not guilty, 1 guilty, 1 evenly split), and second experimental or unfavourable polygraph groups (4 guilty). In terms of overall pre-deliberation decisions rendered by the groups there are marginal, but not statistically significant, differences in the control (40% vs. 45% guilty), first experimental (40% vs. 38% guilty) and second experimental (60% vs. 68% guilty) conditions.

In regard to final decisions rendered in the two studies, there are greater, but not very marked differences. In terms of individual juries, three juries favoured acquittal and one conviction in the control group of the present study compared to all four favouring acquittal in Markwart and Lynch's study, while there are also differences in the first experimental (2 guilty, 2 not guilty vs. 1 guilty, 3 not guilty) and the second experimental (4 guilty vs. 3 guilty, 1 evenly split) groups. In terms of overall final decisions rendered by the groups there is a moderate but not

statistically significant difference between the control groups (28% vs. 12% guilty), and only slight and statistically insignificant differences between the first experimental (35% vs. 41% guilty) and second experimental (60% vs. 66% guilty) groups. The moderate differences at final decision between the control groups here is attributable to a greater tendency for the student jurors to shift to not guilty decisions, when not given polygraph evidence.

The great similarity between the decisions rendered in these two samples would suggest either that the common complaint about potential bias in a student sample is not well-founded or that the selection process in the present study resulted in a similar bias.

IV

RESULTS -- RESPONSES TO THE EVIDENCE

1. Discussion of the Evidence During Deliberation

Jury deliberations were observed and tape-recorded. Observation of the deliberations indicated that all juries appeared to attend seriously to resolving the problem put before them.

Tape recordings of the deliberations indicated that the polygraph evidence was the subject of very little discussion, the bulk of the discussion concerning other evidence and points of law. Discussion time of the polygraph evidence in each jury ranged from 0.6 to 6.1 percent of the total deliberation time, averaging 2.7 percent (73 seconds) of the discussion time per jury.

Differing opinions of the polygraph evidence were expressed in the deliberations. The prevailing concern appeared to centre around what weight they should attach to this testimony. The statements of two of the eighty jurors in the experimental groups appear to indicate that they viewed this evidence as conclusive. One stated: "He was proved innocent by the polygraph.", while the other stated: "I don't know. When I hear that thing says he lying--well, that's it." While there were no expressions of doubt about the figure given of 90 percent accuracy, this accuracy aroused some debate about its meaning. This is summarized in the following brief exchange:

Juror 1: "Okay, don't forget the polygraph is only 90 percent."

Juror 2: "That's damn good!"

Perhaps the dominant theme in this regard was the view that the 90 percent accuracy was not sufficient for results of the test to be worthy of consideration, as in:

"I don't think we should consider that -- there's too much room for error. It doesn't prove beyond a reasonable doubt."

The logic of this argument appears to be: if the polygraph test alone is not sufficient to prove guilt or innocence, then it should not be considered at all. General agreement with this view appeared to result in a fairly quick dismissal of this evidence in most juries. Some jurors, however, adopted a less polarized stance, viewing the evidence as a "guideline", a "point" for or against the accused, or as "corroborating".

A second major theme in the discussions concerned the issue of false positives or false negatives and the chances of error. This, of course, is closely related to the issue of what weight the jurors should attach to this evidence.

A third major theme involved the expression of suspicion about the motives involved in volunteering to take the test, this being related to the belief that a "con" could "beat" the test or that taking the test was an attempt in manipulation by the defence counsel. Examples of this are:

- (a) "Well, he volunteered for it because he thought he was good at covering up, but he was found out -- he was shown to be lying."
- (b) "He may have had advice, too, from somebody that a lie detector is not always 100 percent true and he might get away with it. I mean he was a slippery guy -- right from the start."

- (c) "Of course, his lawyer says he took it voluntarily and willingly, but that could work in his favour because his lawyer knows that there's an error, and could work on the fact that he took it voluntarily and did everything to co-operate. So why shouldn't he lie, knowing full well that there's 10 percent error in that thing?"

One jury did experience some confusion regarding this evidence, engaging in a discussion about what questions the accused had been asked and what exactly he had been found to be telling the truth about. The specific questions the polygraphist asked were not given in the charge to the jury, although it was specifically stated that the polygraphist was expressing an opinion about the accused being "compelled to participate". One juror did point this out, but continuing doubt was expressed in this jury and one juror expressed a desire to clarify this with the judge. This was obviously impossible. It is possible that this confusion may have affected this jury's decision-making. This occurred in the third jury with polygraph evidence favourable to the accused, the only jury in that condition to return a final majority guilty finding.¹

In regard to character witness testimony, the addition of this testimony also evoked little discussion. Discussion of this testimony amounted, on average, to 2.6 percent of the total deliberation time, this being very similar to that accorded the polygraph evidence (2.7%). The primary topic of concern about this evidence, like the polygraph evidence, was about what weight should be attached to this testimony. None of the

¹ Transcripts of the jury comments concerning the polygraph evidence are found in Appendix E.

32 jurors in this condition appeared to place great reliance on this evidence. Rather, it appeared to be largely discounted as not very pertinent by the discussors. This appeared to arise for two reasons. First, because there was a reluctance to condemn the accused for his past and a desire to stay with the facts of the case, as in the following exchange:

Juror 1: "What about the high school principal and probation officer. They knew him and didn't have a very high view of him."

Juror 2: "So what? Just because he didn't have a good reputation for being trustworthy doesn't mean he killed anybody and doesn't mean he's not telling the truth now. We can't condemn him on the basis of his past. We have to stick to the facts."

A second expressed reason for the little apparent weight given this testimony was the conflicting evidence given by the accused's employer.

2. Juror Ratings of the Evidence

(a) Significance of the Evidence

Jurors in the two experimental conditions were asked to rate the significance of the polygraph evidence relative to other evidence presented at the trial. The results of these ratings are presented in Table 15. Overall, only five percent rated the polygraph evidence as more significant, this belying the popular belief that jurors will attach great significance to this type of evidence. Twenty-five percent considered this evidence equally as significant as other evidence, but the great majority--70 percent--of jurors regarded this evidence as having less significance or being insignificant.

Table 15: JUROR RATINGS OF THE SIGNIFICANCE OF THE POLYGRAPH EVIDENCE

<u>Rating</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
More Significant	2 (5%)	2 (5%)	4 (5%)
Equally Significant	13 (32.5%)	7 (17.5%)	20 (25%)
Less Significant	21 (52.5%)	17 (42.5%)	38 (47.5%)
Insignificant	<u>4 (10%)</u>	<u>14 (35%)</u>	<u>18 (22.5%)</u>
Total	40 (100%)	40 (100%)	80 (100%)

Recalling that the favourable polygraph evidence had no apparent impact on juror decisions, while unfavourable polygraph evidence had a statistically significant impact, one would expect that the jurors in the second experimental condition would attach at least equal, if not greater significance to the polygraph evidence compared to those in the first experimental condition. This did not occur: Table 15 indicates that while equal proportions in each condition viewed this evidence as more significant, almost twice as many jurors (32.5 versus 17.5 percent) in the first experimental condition rated the evidence as equally significant as did those in the second experimental condition. Further, the jurors in the second experimental condition described the polygraph evidence as insignificant at more than three times the rate (35 versus 10 percent) than did those in the first experimental condition. Collapsing these categories into greater (i.e. "more" plus "equal" significance) and lesser (i.e. "less" plus "insignificant") significance reveals, however, that there are no statistically significant differences ($X^2(1) = 2.14, p < .20$) in the ratings of these two experimental conditions. Despite this, these findings are somewhat anomalous, but may in part be explained by considering that

the two groups were required to rate evidence of different qualities in different contexts, i.e. the first experimental group was asked to rate evidence favourable to the accused in relation to other evidence that was predominately unfavourable to the accused, while the second experimental group was asked to rate evidence unfavourable to the accused in relation to other evidence also predominately unfavourable to the accused.

Final decision concurrence or non-concurrence with the polygraph evidence can be cross-tabulated with the ascription of greater or lesser significance to the polygraph evidence to determine if there is any relationship between the two variables. Decision concurrence here is determined by a final decision consistent with the findings of the polygraph evidence, i.e. a not guilty decision in the first experimental condition and a guilty decision in the second experimental condition. The results of this cross-tabulation for each experimental condition and in total, are presented in Table 16. This table indicates that for the two experimental conditions combined there is a much stronger propensity for those who ascribed greater significance to the polygraph evidence to produce decisions concurring with the polygraph findings than there is for those who ascribed lesser significance to the polygraph evidence--88.3 percent versus 55.4 percent respectively. This is a substantial relationship (Yule's $Q = 0.60$). Breaking this down by condition type reveals, however, that this substantial relationship overall is almost totally attributable to the second experimental condition where there is a very strong relationship (Yule's $Q = 0.88$) compared to only a low relationship (Yule's $Q = 0.12$) in the first experimental condition. In short, those in the first

Table 16: CROSS-TABULATION OF DECISION CONCURRENCE WITH THE POLYGRAPH EVIDENCE BY RELATED SIGNIFICANCE

	Decision Concurrence	Rated Significance of the Polygraph Evidence		
		Greater	Lesser	Total
Experimental I	Concurrence	14 (93.3%)	12 (48%)	26 (65%)
	Non-Concurrence	1 (6.7%)	13 (52%)	14 (35%)
	Total	15 (100%)	25 (100%)	40 (100%)
Yule's Q = +0.88				
Experimental II	Concurrence	6 (66.7%)	19 (61.3%)	25 (62.5%)
	Non-Concurrence	3 (33.3%)	12 (38.7%)	15 (37.5%)
	Total	9 (100%)	31 (100%)	40 (100%)
Yule's Q = +0.12				
Total	Concurrence	20 (83.3%)	31 (55.4%)	51 (63.8%)
	Non-Concurrence	4 (16.7%)	25 (44.6%)	29 (36.3%)
	Total	24 (100%)	56 (100%)	80 (100.1%)
Yule's Q = +0.60				

experimental condition were much more likely to ascribe greater significance to the polygraph evidence and, of these, to yield decisions concurring with the polygraph findings than were those in the second experimental group. These, again, are anomalous results which conflict with the findings on the impact of the polygraph evidence on decisions.

Finally, for comparison purposes, the jurors in the comparison group were asked to rate the significance of the character witness testimony along the same dimension. Results indicated that 6.3 percent (2) rated this evidence as more significant than other evidence presented, 34.4 percent (11) as equally significant, 46.9 percent (15) as less significant, and 12.5 percent (4) as insignificant. Recalling Table 15, these results are very similar to the ratings of the polygraph evidence given by the comparable experimental group, i.e. 37.5% of the first experimental group rated the polygraph evidence as equally or more significant, while 39.7% in the comparison group rated the character witness testimony as equally or more significant than other testimony.

(b) Evidence as a Deciding Factor

The experimental jurors were also asked to express agreement or disagreement with a statement indicating that the polygraph evidence was a deciding factor in the case for them. The results of these ratings are presented in Table 17. This table indicates that overall, 11.3 percent agreed that the polygraph evidence was a deciding factor, 12.5 percent were uncertain, and 76.3 percent disagreed, this again belying the belief that polygraph evidence will be a deciding factor for all or most jurors. Examination of the ratings in the two experimental groups again reveals

Table 17: JUROR RATINGS OF THE POLYGRAPH EVIDENCE AS A DECIDING FACTOR

<u>Rating</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
Agree	6 (15%)	3 (7.5%)	9 (11.3%)
Uncertain	6 (15%)	4 (10%)	10 (12.5%)
Disagree	<u>28 (70%)</u>	<u>33 (82.5%)</u>	<u>61 (76.3%)</u>
Total	40 (100%)	40 (100%)	80 (100.1%)

findings inconsistent with the verdict decisions: twice as many--15 versus 7.5 percent--jurors in the first experimental condition agreed that the polygraph evidence was a deciding factor compared to those in the second experimental condition. However, this again should be qualified by considerations of the different contexts in which the evidence was placed: arguably, evidence favourable to the accused is more likely to be described as deciding since favourable evidence need only raise a reasonable doubt, while one item of unfavourable evidence is less likely to be seen as deciding where proof beyond a reasonable doubt is required.

A cross-tabulation of these ratings with final decision concurrence with the polygraph findings is presented in Table 18. This table indicates that there is a strong tendency for those agreeing that the polygraph evidence was a deciding factor to concur with the findings of the polygraph--eight out of nine did so. Further nine out of ten of those who were uncertain that the polygraph evidence was a deciding factor concurred with the polygraph findings, this suggesting that the polygraph evidence could indeed have been a deciding factor for this group. In contrast, only 55.7 percent of those who disagreed that the polygraph evidence was a deciding factor concurred with the polygraph findings. This

is a very strong relationship ($\gamma = 0.72$). Table 18 indicates that, breaking these results down by experimental condition, there are relatively similar results among the two conditions: all (7) of those who agreed or were uncertain concurred with the polygraph findings compared to 54.5 percent of those who disagreed in the second experimental condition, while ten of twelve (83.3%) of those who agreed or were uncertain concurred and 67.1 percent who disagreed also concurred in the first experimental condition. The one individual in the first experimental condition who agreed but did not concur clearly suggests that the polygraph evidence worked in an unintended direction for this individual:

Finally, for comparison purposes, the jurors in the comparison group were asked to indicate agreement or disagreement with a statement that the character witness testimony was a deciding factor. Results indicated that 12.5 percent (4) agreed this evidence was a deciding factor, 15.6 percent (5) were uncertain, and 71.9 percent (23) disagreed. Recalling Table 17, these results are very similar to those given by the jurors in the first experimental condition for the polygraph evidence. Further, the final decisions of seven of nine (77.7%) of those who agreed or were uncertain concurred with the character witness testimony compared to 56.5 percent concurrence among those who disagreed, these results also being very similar to the decision concurrence breakdown presented in Table 18 for the first experimental condition.²

² One further rating item of "confidence" in the polygraph evidence has been omitted from presentation here because the item is considered redundant over those already presented and some in subsequent sections. Briefly, among experimental subjects, six percent expressed "complete confidence" in polygraph finding, 43 percent "a fair amount of confidence", 36 percent "little confidence", and 15 percent "no confidence". There was a very strong relationship ($Q = .71$) between greater and lesser confidence and final decision concurrence.

Table 18: CROSS-TABULATION OF POLYGRAPH EVIDENCE AS A DECIDING FACTOR BY FINAL DECISION CONCURRENCE

	Decision Concurrence	Polygraph Evidence as a Deciding Factor			Total
		Agree	Uncertain	Disagree	
Experimental I	Concurrence	5 (83.3%)	5 (83.3%)	16 (57.1%)	26 (65%)
	Non-Concurrence	1 (16.7%)	1 (16.7%)	12 (42.9%)	14 (35%)
	Total	6 (100%)	6 (100%)	28 (100%)	40 (100%)
Experimental II	Concurrence	3 (100%)	4 (100%)	18 (54.5%)	25 (62.5%)
	Non-Concurrence	0	0	15 (45.5%)	15 (37.5%)
	Total	3 (100%)	4 (100%)	33 (100%)	40 (100%)
Total	Concurrence	8 (88.9%)	9 (90%)	34 (55.7%)	51 (63.8%)
	Non-Concurrence	1 (11.1%)	1 (10%)	27 (44.3%)	29 (36.3%)
	Total	9 (100%)	10 (100%)	61 (100%)	80 (100.1%)

Gamma = 0.72

3. Familiarity with and Opinions of the Polygraph

(a) Familiarity with the Polygraph

All jurors were asked the nature of their familiarity with the polygraph technique prior to taking part in the experiment. These results are presented in Table 19 by condition and in total.

Table 19: JUROR FAMILIARITY WITH THE POLYGRAPH.

<u>Familiarity</u>	<u>Control</u>	<u>Experi- mental I</u>	<u>Experi- mental II</u>	<u>Comparison</u>	<u>Total</u>
Read or heard scientific accounts	15 (35%)	20 (50%)	17 (42.5%)	10 (31%)	62 (40%)
Only familiar through popular media (e.g. crime dramas)	25 (58%)	19 (47.5%)	23 (57.5%)	22 (69%)	89 (57.4%)
Never heard of it	3 (7%)	1 (2.5%)	0 (0%)	0 (0%)	4 (2.6%)
Total	43 (100%)	40 (100%)	40 (100%)	32 (100%)	155 (100%)

Table 19 indicates that; overall, a fairly large proportion--40 percent--had read or heard scientific accounts of the polygraph, 57.4 percent were only familiar with it through popular media such as crime dramas, and 2.6 percent had never heard of it before. In short, almost all prospective jurors could be expected to be familiar in some manner with the polygraph technique and likely could have developed attitudes about its accuracy and use.

Table 19 indicates there are some variations in the type of prior familiarity with the polygraph among conditions. However, excluding

the few unfamiliar with the polygraph, cross-tabulations indicate no significant differences in type of prior familiarity between either the two conditions experimentally exposed to the polygraph evidence and the two conditions not exposed to this evidence ($X^2(1) = 0.99, p < .30$), nor between the two experimental conditions ($X^2(1) = 0.66, p < .70$). The latter finding suggests the results of the two experimental conditions were not confounded by differences in prior familiarity.

A cross-tabulation of prior familiarity type among the combined experimental conditions by final decision concurrence with the polygraph evidence is presented in Table 20.

Table 20: PRIOR POLYGRAPH FAMILIARITY BY FINAL DECISION CONCURRENCE.

<u>Decision Concurrence</u>	<u>Scientific Accounts</u>	<u>Popular Media</u>	<u>Unknown</u>	<u>Total</u>
Concurrence	26 (70.3%)	24 (57.1%)	1 (100%)	51 (63.8%)
Non-Concurrence	11 (29.7%)	18 (42.9%)	0 (0%)	29 (36.3%)
Total	37 (100%)	42 (100%)	1 (100%)	80 (100.1%)

This table indicates that there is a slightly greater tendency for those who had read or heard scientific accounts of the polygraph to concur with its findings than for those familiar with it through the popular media (70.3% vs. 57.1% concurrence respectively). There is, however, a low ($\gamma = 0.23$) relationship between these variables.

(b) Belief in the Polygraph as Conclusive Proof

All jurors were asked to indicate agreement or disagreement with a statement that a polygraph test can provide conclusive proof that a person is innocent or guilty. The results of responses are presented

in Table 21. In this table the "non-experimental" group refers to the control and comparison conditions combined, while the experimental groups are presented separately. These groups should be considered separately because the opinions of the two experimental groups could have been confounded by the experimental situation itself, i.e. the exposure to polygraph information and the decision-making process could have affected these opinions. Hence the responses of the non-experimental groups--not exposed to polygraph evidence--might be considered reflective of the opinions jurors may bring into a courtroom situation, while those of the experimental groups may in part be a product of the courtroom situation.

Table 21: JUROR OPINIONS OF THE POLYGRAPH TEST AS CONCLUSIVE PROOF.

<u>Response</u>	<u>Non- Experimental</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
Agree	4 (5.3%)	0 (0%)	1 (2.5%)	5 (3.2%)
Uncertain	14 (18.7%)	3 (7.5%)	0 (0%)	17 (11%)
Disagree	<u>57 (76%)</u>	<u>37 (92.5%)</u>	<u>39 (97.5%)</u>	<u>133 (85.8%)</u>
Total	75 (100%)	40 (100%)	40 (100%)	155 (100%)

Table 21 indicates that among the non-experimental jurors only 5.3 percent agreed that the polygraph test provides conclusive proof of innocence or guilt, 18.7 percent were uncertain, and 87 percent disagreed. This again belies the common belief that polygraph evidence will be viewed as conclusive by all or most jurors. In the experimental conditions only one--from the unfavourable polygraph evidence condition--of eighty jurors agreed and this juror's final decision concurred with the polygraph evidence. Only three of eighty jurors--all from the first experimental condition--were uncertain in their opinions, two of these three concurring with

the polygraph evidence at final decision. Overall, 95 percent of the jurors in the two experimental conditions disagreed with this statement compared to 76 percent in the non-experimental conditions, this suggesting that exposure to and consideration of polygraph evidence may slightly diminish and clarify juror views about its conclusive or non-conclusive nature. Clearly then, very few jurors who could be exposed to polygraph evidence or have been exposed to it view it as conclusive in nature.

(c) Juror Opinions of the Accuracy of the Polygraph Test

All jurors were asked to express agreement or disagreement with two mirror statements, one indicating the polygraph test is accurate in detecting truth-telling and the other that it is accurate in detecting lying. The separation here of accuracy in detecting both the truth and lying was designed to test the hypothesis presented by Markwart and Lynch (1979) that unfavourable polygraph evidence has a greater impact on jurors than favourable polygraph evidence because the polygraph is known as a lie-detector rather than a truth-detector. The responses to these questions are summarized in Table 22. Again, the non-experimental and experimental groups should be regarded separately since the responses of the experimental groups could have been affected by the experimental situation itself.

Table 22 indicates that among the non-experimental jurors an equal proportion of jurors--17.3 percent--agree that the polygraph test is accurate in detecting both the truth and lying, these results then offering no support for the hypothesis advanced by Markwart and Lynch. This table also indicates that about two in five jurors who have not been exposed to polygraph evidence disagree that the test is accurate in detecting either

Table 22: JUROR OPINION OF THE ACCURACY OF THE POLYGRAPH TEST

(a) Accuracy in Detecting the Truth	Non-Experimental			Experimental I		Experimental II		Total
Agree	13	(17.3%)		8	(20%)	4	(10%)	25 (16.1%)
Uncertain	31	(41.3%)		9	(22.5%)	6	(15%)	46 (29.7%)
Disagree	31	(41.3%)		23	(57.5%)	30	(75%)	84 (54.2%)
Total	75	(99.9%)		40	(100%)	40	(100%)	155 (100%)

(b) Accuracy in Detecting Lying	Non-Experimental			Experimental I		Experimental II		Total
Agree	13	(17.3%)		11	(27.5%)	5	(12.5%)	29 (18.7%)
Uncertain	33	(44%)		6	(15%)	4	(10%)	43 (27.7%)
Disagree	29	(38.7%)		23	(57.5%)	31	(77.5%)	83 (53.5%)
Total	75	(100%)		40	(100%)	40	(100%)	155 (99.9%)

truth or lying. Further, about two in five are uncertain of the test's accuracy in determining truth or lying, this group with unformulated opinions likely being susceptible to influence by the presentation of information about the polygraph test in a courtroom situation.

Table 22 indicates that among the two experimental groups there is a slight tendency for the jurors to more readily agree in both conditions that the polygraph test is more accurate in detecting lying than the truth--overall, 20 percent agreed the test is accurate in detecting lying compared to 15 percent who agreed it is accurate in detecting the truth. This table also reveals another anomalous finding that conflicts with the verdict results in the two experimental conditions: while 20 percent or eight jurors--the final decisions of seven of these concurring with the polygraph evidence--in the first experimental condition agreed the polygraph test is accurate in detecting the truth, only 12.5 percent or five jurors--all of whom concurred with the polygraph evidence presented--in the second experimental condition agreed that the test is accurate in detecting lying. However, the potential for confounding influences, particularly in the first experimental condition are substantial: clearly the trend of the non-polygraph evidence favoured the accused--72% of the control group rendered final not guilty decisions--and since the second experimental group was presented with polygraph evidence consonant with this trend this greater consonance could have affected the opinions about the accuracy of the test more so than for those in second experimental group, where there was not such consonance. For this reason further exploration of this variable would be unwise.³

3

One item--requiring agreement or disagreement with a statement indicating the polygraph "cannot be relied upon"--has been omitted because it is considered redundant over items already presented.

4. Evidence of Cynical Attitudes Among Jurors

In finding that polygraph evidence favourable to the accused did not produce expected effects but rather reverse effects on juror decision-making Markwart and Lynch (1979) posited that certain cynical attitudes held by some jurors about polygraph evidence may have fostered this phenomenon. In the current experiment favourable polygraph evidence also did not produce effects in the intended direction and cynicism among jurors was evident in the juror deliberations. Given this, an exploration of the attitude items designed to measure this apparent cynicism is warranted.

(a) "A con can beat a polygraph test"

All jurors were asked to indicate agreement or disagreement with the statement indicating that a "real con can beat a polygraph test". Arguably, such a belief could serve to counteract a polygraph finding favouring the accused and perhaps even produce a negative reaction to the defendant's case. The results of responses to this item are presented in Table 23.

Table 23: JUROR OPINIONS ON A "CON BEATING" A POLYGRAPH TEST.

<u>Response</u>	<u>Non- Experimental</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
Agree	15 (20%)	15 (37.5%)	15 (37.5%)	45 (29%)
Uncertain	35 (46.7%)	17 (42.5%)	16 (40%)	68 (43.9%)
Disagree	<u>25 (33.3%)</u>	<u>8 (20%)</u>	<u>9 (22.5%)</u>	<u>42 (27.1%)</u>
Total	75 (100%)	40 (100%)	40 (100%)	155 (100%)

Table 23 indicates that among the non-experimental jurors one in five agree with this statement and one in three disagree, the remainder

being uncertain: This could reflect the attitudes jurors may bring into a courtroom situation regarding this. It seems, however, that being confronted with polygraph evidence may change this opinion: more--three of every eight--jurors in both the first and second experimental conditions agreed with this statement and fewer--about one in five in each experimental condition--disagreed, i.e. more cynical attitudes are displayed by those who have considered and discussed this type of evidence. The differences here between the non-experimental group and the first experimental condition--the condition of primary interest--approach statistical significance ($\chi^2(2) = 4.9, p < .10$). If this belief did have an effect on decisions one might expect a greater tendency for those in the first experimental condition who agreed with this statement not to concur at final decision with the polygraph test results. This did not occur: the decisions of eight of fifteen in this condition who agreed with this statement concurred with the polygraph evidence presented. This would not, however, necessarily rule out an effect on the remaining seven who did not concur, though again these results could have been confounded by the experiment itself.

(b) The Action of Volunteering for a Polygraph Test.

Markwart and Lynch also posited that favourable polygraph evidence may have no impact or an unintended impact because a defendant's actions in volunteering for a polygraph test may be regarded suspiciously--as a form of manipulation--by some jurors and hence negatively affect decisions. On the other hand, the very action of volunteering for such a test could--regardless of the results--be viewed positively by some jurors and positively affect decisions, i.e. only an innocent person would be

courageous enough to submit to such a test. To test this, all jurors were asked to indicate agreement or disagreement with two statements, one stating that a polygraph test volunteer should be regarded suspiciously and the other stating that anyone who would volunteer for such a test must be telling the truth. The results of responses to these two items are presented in Table 24.

• Table 24 indicates that there is little support for the argument advanced by Markwart and Lynch; in fact, the results indicate that there is a greater potential for some jurors to view the action of volunteering for a polygraph test in a positive manner, rather than in a cynical manner: in the non-experimental groups only 2.7 percent agreed that a polygraph volunteer should be regarded suspiciously, while 12 percent agreed that such a volunteer must be telling the truth. However, the vast majority disagreed with both statements--84 and 74.7 percent respectively.

Examining the responses of the two experimental groups in Table 24, and again keeping in mind possible confounding influences of the experimental situation, reveals that slightly more jurors in the first and second experimental groups--five and ten percent respectively--agreed that a polygraph volunteer should be regarded suspiciously. Should this belief have had any affect at all on decision-making in either experimental groups one would expect those who indicated agreement to render guilty final decisions. Of the six jurors who agreed four (67%)--one of two from the first experimental group and three of four from the second experimental group--did produce final guilty decisions, this being greater than the overall guilty voting pattern (37%) among those in the two experimental conditions who disagreed with this statement.

Table 24: JUROR OPINIONS OF THE ACTION OF VOLUNTEERING FOR A POLYGRAPH TEST

	<u>Non-Experimental</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
(a) Volunteer should be regarded suspiciously				
Agree	2 (2.7%)	2 (5%)	4 (10%)	8 (5.2%)
Uncertain	10 (13.3%)	4 (10%)	4 (10%)	18 (11.6%)
Disagree	63 (84%)	34 (85%)	32 (80%)	129 (83.2%)
Total	75 (100%)	40 (100%)	40 (100%)	155 (100%)
(b) Volunteer must be telling the truth				
Agree	9 (12%)	6 (15%)	1 (2.5%)	16 (10.3%)
Uncertain	10 (13.3%)	5 (12.6%)	4 (10%)	19 (12.3%)
Disagree	56 (74.7%)	29 (72.5%)	35 (87.5%)	120 (77.4%)
Total	75 (100%)	40 (100%)	40 (100%)	155 (100%)

In regard to the belief that a polygraph volunteer must be telling the truth, Table 24 indicates that that only one juror (2.5%) in the second experimental condition agreed with this view, compared to 15 percent and 12 percent respectively in the first experimental and non-experimental groups. Given this belief, this juror's final decision was anomalous—he voted guilty. Five of six (83%) of the jurors in the first experimental condition who agreed with this statement voted not guilty at final decision, i.e. there is a consistency, for most, between their decisions and expressed attitudes. The not guilty voting pattern among this small group is greater than that among those in the first experimental group who disagreed with this statement--83 versus 69 percent respectively.

(c) Distrust of the Defence and Prosecution

Markwart and Lynch also posited that the introduction of polygraph evidence by the defence may be perceived by some jurors as a form of manipulation of the trial process and hence negatively impact the defendant's case. To test this, jurors were asked to indicate agreement or disagreement to a statement expressing a distrust of defence counsel and, for comparison purposes, to a very similar statement expressing a distrust of prosecutors. The results of responses to those two statements are presented in Table 25.

Table 25(a) indicates that, in total, a considerable degree of distrust of defence counsel was expressed by those jurors--39.4 percent agreed defence counsel are untrustworthy, while 40.6 percent disagreed, the remainder being uncertain. In contrast, only 19.4 percent of all jurors

Table 25: JUROR DISTRUST OF THE DEFENSE AND PROSECUTION.

	Control	Comparison	Experimental I	Experimental II	Total
(a) Defense Lawyers					
Cannot be Trusted					
Agree	12 (27.9%)	13 (40.6%)	18 (45%)	18 (45%)	61 (39.4%)
Uncertain	8 (18.6%)	6 (18.8%)	7 (17.5%)	10 (35%)	31 (31%)
Disagree	23 (53.5%)	13 (40.6%)	15 (37.5%)	12 (30%)	63 (40.6%)
Total	43 (100%)	32 (100%)	40 (100%)	40 (100%)	155 (100%)
(b) Prosecutors					
Cannot be Trusted					
Agree	5 (11.6%)	9 (21.9%)	10 (25%)	8 (20%)	30 (19.4%)
Uncertain	10 (23.3%)	5 (15.6%)	6 (15%)	9 (22.5%)	30 (19.4%)
Disagree	28 (65.1%)	20 (62.5%)	24 (60%)	23 (57.5%)	95 (61.3%)
Total	43 (100%)	32 (100%)	40 (100%)	40 (100%)	155 (100.1%)
(c) Cross Tabulation of Totals					
	Distrust of Prosecution			Row Total	
	Agree	Uncertain	Disagree		
Distrust of Defense					
Agree	27	8	26	41	
	44.3%	13.1%	42.6%	39.4%	
90.9%		26.7%	27.4%		
Uncertain					
1	21	9	31	20.0%	
	3.2%	67.7%	29.0%		
3.3%		70.0%	9.5%		
Disagree					
2	1	60	63	40.6%	
	3.2%	1.6%	95.2%		
6.7%		3.3%	31.6%		
Column					
30	30	95	155	100.1%	
19.4%	19.4%	61.3%			
Total					

agreed that prosecutors are untrustworthy, 61.3 percent disagreed, the remainder being uncertain. These differences, excluding the uncertain response category, are statistically significant ($\chi^2(1) = 17.06, p < .01$). The differences in distrust of the defence versus the prosecution are also fairly constant across individual conditions--in each condition the jurors agreed that the defence is untrustworthy at roughly twice the rate that they agreed the prosecution is untrustworthy. These differences approach statistical significance in the control ($\chi^2(1) = 3.32, p < .10$) and comparison ($\chi^2(1) = 3.27, p < .10$) conditions and, notably, are statistically significant in the first ($\chi^2(1) = 4.35, p < .05$) and second ($\chi^2(1) = 7.29, p < .01$) experimental conditions. While the responses to these statements could have been confounded by the experimental situation the constant differences in expressed distrust through all conditions, regardless of final voting preferences and evidence type, suggests that these differences in the perceptions of the defence and prosecution may reflect true differences.

Table 25 also indicates that there are some differences in expressed distrust of the defence among individual conditions. In the control group, only 27.9 percent expressed a distrust of the defence compared to greater than 40 percent in each of the remaining conditions. The difference between the control and the remaining conditions, of course, is that in each of the remaining conditions the defence played a more active role in terms of either proffering evidence favourable to the accused or, in the case of the second experimental and comparison conditions, attempting to rebut evidence unfavourable to the accused, i.e. this more

active involvement could more readily invite a perception of attempted manipulation or being untrustworthy. While the differences in responses between the control and comparison conditions are not statistically significant ($X^2(1) = 1.52$, $p < .30$), they approach statistical significance between the control and first experimental condition ($X^2(1) = 3.08$, $p < .10$) and are statistically significant between the control and second experimental conditions ($X^2(1) = 4.29$, $p < .05$). It is this latter condition where perceived manipulation by the defence may be most apparent to jurors, i.e. the defence initially agreed to the test and, finding negative results, must attempt to rebut the evidence.

Table 25(b) also indicates a similar pattern among conditions with regard to expressed distrust of the prosecution--only 11.6 percent in the control group expressed distrust of the prosecution compared to greater than 20 percent in each of the remaining conditions. There are, however, no statistically significant differences between the responses of the control and any of the remaining three conditions.

To determine whether an expressed distrust of the defence may have had an impact on decision-making it is necessary to isolate those who express a sole distrust of the defence without a concurrent distrust of the prosecution. Table 25(c) indicates that while 90 percent of the 30 jurors who expressed a distrust of the prosecution also expressed a distrust of the defence, 34 jurors expressed a distrust of the defence without a concurrent distrust of the prosecution. Should this sole distrust of the defence have had an effect on decision-making one would expect the jurors who expressed this opinion to vote guilty at final decision more often

than those who did not. A breakdown of sole distrust and no sole distrust of the defence by final decision is presented in Table 26.

Table 26 indicates that overall there is a stronger tendency for those expressing a sole distrust of the defence to vote guilty at final decision than for those who do not--64.7 percent of those who expressed sole distrust of the defence voted guilty, compared to 33.9 percent guilty decisions among the remaining groups. This is a substantial relationship (Yule's $Q = 0.56$) and a statistically significant difference ($\chi^2(1) = 10.45, p < .001$). Table 26 also indicates that this tendency is constant through all conditions, with there being similar substantial relationships in the control ($Q = 0.66$), comparison ($Q = 0.53$), first experimental ($Q = 0.51$) and second experimental ($Q = 0.57$) conditions. In sum, it appears that a more active involvement by the defence in, effectively, attempting to prove the accused's innocence may generate some greater distrust of the defence, this in turn negatively affecting the accused's case. A similar breakdown of sole distrust of the prosecution is not worthwhile because of small numbers: only three jurors indicated a sole distrust of prosecutors.

(d) Distrust of Experts

In the trial situation the polygraphist was presented as an expert. It is possible that a distrust of experts by jurors could impact decision-making, this particularly assisting in explaining the results of the decisions of the first experimental condition. To test this all jurors were asked to express agreement or disagreement to a statement

Table 26: FINAL DECISION BY SOLE DISTRUST OF THE DEFENCE.

	Final Decision	Control	Comparison	Experimental I	Experimental II	Total
(a) Sole Distrust of Defense	Guilty	3 (60%)	5 (55.5%)	5 (55.5%)	9 (81.8%)	22 (64.7%)
	Not Guilty	2 (40%)	4 (44.5%)	4 (44.5%)	2 (18.2%)	12 (35.3%)
	Total	5 (100%)	9 (100%)	9 (100%)	11 (100%)	34 (100%)
(b) No. Sole Distrust of Defense	Guilty	9 (23.7%)	7 (30.4%)	9 (29%)	16 (55.2%)	41 (33.9%)
	Not Guilty	29 (76.3%)	16 (69.9%)	22 (71%)	13 (44.8%)	80 (66.1%)
	Total	38 (100%)	23 (100%)	31 (100%)	29 (100%)	121 (100%)
	TOTAL	43	32	40	40	155

indicating experts are unreliable and their opinions untrustworthy. The results of responses to this item are presented in Table 27.

Table 27: JUROR DISTRUST OF EXPERTS

<u>Response</u>	<u>Control</u>	<u>Comparison</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
Agree	7 (16.3%)	7 (21.9%)	5 (12.5%)	10 (25%)	29 (18.7%)
Uncertain	13 (30.2%)	1 (3.1%)	9 (22.5%)	8 (20%)	31 (20%)
Disagree	23 (53.5%)	24 (75%)	26 (65%)	22 (55%)	95 (61.3%)
Total	43 (100%)	32 (100%)	40 (100%)	40 (100%)	155 (100%)

Table 27 indicates that, overall, 18.7 percent of the jurors agreed that the opinions of reports cannot be trusted, but 61.3 percent disagreed, the remainder being uncertain. There are variations in responses between conditions, but there are no significant differences in responses between those not exposed to expert evidence (i.e. control plus comparison) and those exposed to expert evidence (the experimental conditions), i.e. it might be expected that about one in five jurors could be expected to take a distrust of experts into the courtroom, and this proportion of distrust does not significantly increase or decrease when jurors are exposed to a (polygraph) expert. Further, Table 27 indicates that twice as many-- 25 versus 12.5 percent--jurors in the second experimental condition as in the first experimental condition indicated a distrust in expert's opinions, but the differences in responses between those two groups are not statistically significant.

Should the expressed distrust of the opinions of experts by this small proportion of jurors have had any effect on decision-making

one would expect that these jurors would not concur with the expert's opinion (i.e. the polygraph evidence) at final decision at a greater rate than those who do not express such distrust. A breakdown of the responses to this item, excluding the uncertain category, by final decision concurrence with the polygraph evidence for the two experimental groups is presented in Table 28.

Table 28: JUROR DISTRUST OF EXPERTS BY FINAL DECISION CONCURRENCE.

	<u>Decision Concurrence</u>	<u>Experimental I</u>	<u>Experimental II</u>	<u>Total</u>
(a)				
Distrust of Experts	Concurrence	4 (80%)	4 (40%)	8 (53.5%)
	Non-concurrence	<u>1 (20%)</u>	<u>6 (60%)</u>	<u>7 (46.7%)</u>
	Total	5 (100%)	10 (100%)	15 (100%)
(b)				
No Distrust of Experts	Concurrence	18 (69.2%)	17 (77.3%)	35 (72.9%)
	Non-Concurrence	<u>8 (30.8%)</u>	<u>5 (22.7%)</u>	<u>13 (27.1%)</u>
	Total	26 (100%)	22 (100%)	48 (100%)

Table 28 indicates that in the first experimental group there is actually a slightly stronger tendency for those who express a distrust of expert's opinions to concur with the expert's opinion than for those who express no distrust--80 percent of those who express a distrust of experts actually concurred with the expert's opinion compared to 69.2 percent of those who did not express a distrust. Hence, a distrust of experts' opinions does not assist in explaining the anomalous decisions of this group. In contrast, for the second experimental group, where the decisions of the group were not anomalous, expressed distrust of experts is associated

with non-concurrence with expert's opinion--60 percent of those who expressed distrust did not concur with the expert's opinion compared to only 22.7 percent of those who expressed no distrust. This is a substantial relationship (Yule's $Q = 0.67$) and an anomalous finding.⁴

⁴ A contrasting attitude item here--belief that "progress in science is man's best hope"--has been omitted since it is rather nebulous, not a mirror image of the statement on experts and hence a poor comparison. Briefly, 27.1 percent agreed, 27.1 percent were uncertain, and 45.8 percent disagreed, while there was a negligible relationship ($Q = 0.002$) between agreement/disagreement and final decision concurrence with the polygraph evidence.

V
SUMMARY AND CONCLUSIONS

The argument that polygraph evidence will be regarded as conclusive proof of guilt or innocence and hence, usurp the jury's function is predicated upon the assumption that the test will be regarded as infallible, or nearly so, by jurors; this producing virtual automatic juror decision concurrence with the test results. The results of this experiment provide no support at all for this argument: less than one in five jurors agreed the test is even accurate in detecting truth or deception, only about one in ten jurors exposed to the evidence agreed it was a deciding factor in their decisions, and only one or two¹ in eighty experimental jurors regarded the evidence as conclusive proof of guilt or innocence. Most importantly, this generally skeptical regard of the evidence was reflected in the jurors' decision-making: favourable polygraph evidence had no impact on the jurors' decisions and, while unfavourable polygraph evidence did impact the jurors' decisions, it did not result in complete removal of these jurors' discretion, nor even nearly so. Hence the impact of the added polygraph test results was not undue according to this first operational definition.²

¹ In the attitude items, only one experimental subject agreed that the evidence was conclusive proof, but the transcripts of the jury deliberations indicated one additional juror may have regarded it as conclusive.

² The fact that only one or two in eighty jurors--or one out of every 2.5 to five juries--exposed to this evidence may regard it as conclusive could still present problems in jury trials. If such ardent believers are able to resist the strong social pressures to conform (e.g. Asch, 1952) in cases where the polygraph evidence contradicts the strong trend of the other evidence, then there could be an increased number of hung juries created. Such persons could, perhaps, be selected out during the voire dire process for the selection of jurors, if it is known that polygraph evidence may be presented at trial.

This conclusion must, however, be qualified by the consideration that the juror deliberations were, due to time limitations, truncated -- only one of the fifteen juries (none in the experimental conditions) was able to arrive at a unanimous verdict. Hence the "final" decisions of these juries are, in fact, unknown. Had deliberations been permitted to proceed to a unanimous conclusion different results could have obtained, this affecting the conclusion about the first operational definition. For example,--it is known that the addition of unfavourable polygraph evidence did change the initial majority preferences of the juries considering this evidence, while favourable polygraph evidence did not -- three of four juries in both the control and favourable polygraph evidence conditions favoured acquittal, while all four juries in the unfavourable polygraph evidence condition favoured conviction. Even though there was no strong evidence of a majority decision-making process at work among these juries, it could still be possible that this would arise at a later stage in the deliberations and, if so, the juries exposed to unfavourable polygraph evidence would all return unanimous verdicts for conviction, i.e. 100 percent decision concurrence with the polygraph results.

Since favourable and unfavourable polygraph evidence had differential impacts on jurors' decisions they must be regarded separately in considering two other operational definitions of undue influence. The addition of unfavourable polygraph evidence did have a statistically significant impact (at $p < .01$), in the appropriate direction, on juror decisions when compared to the control group and, further, had a significantly greater impact than the addition of character witness testimony.

Hence this evidence did have an undue influence on juror decisions according to these two operational definitions. However, the impact of the added unfavourable polygraph evidence, when compared to the control group, could have been enhanced by the apparent ambiguity of the control case, i.e. this particular control case should be sensitive to the addition of this evidence. Hence the impact of unfavourable polygraph evidence added to control cases that vary in the strength and direction of the decisions they elicit (i.e. more or less favouring conviction or acquittal), or which deal with different types of charges, could be the subject of further research. Further, the relative impact of this evidence compared to other types of evidence (e.g. additional witnesses, other scientific tests) could also be the subject of future research.

Favourable polygraph evidence here, even when added to a control case that should be sensitive to the addition of new evidence, did not have an impact on decision-making when compared to the control group decisions. Hence its impact was not undue according to this operational definition. While the relative impact of this evidence was not able to be established because a comparison condition was not proceeded with, a probable result, had it proceeded, would be a due impact, except in the unlikely occurrence of favourable character witness testimony producing a statistically significant negative impact on decisions. It seems, however, a rather moot and ironic conclusion that no influence on decisions by this evidence could be construed as a due influence.

The final and perhaps most important operational definition of undue influence did obtain in this experiment -- favourable polygraph

evidence did not have a stronger impact, in the appropriate direction, than unfavourable polygraph evidence, as one would logically expect, but rather the reverse occurred.³ This replicates the results of Markwart and Lynch's study and is a rather important finding insofar as it suggests that jurors may have difficulty properly assessing the merits of this evidence.

At a practical level, these results, if generalizable to an actual trial situation, cast some doubts on the appropriateness and value of introducing this type of evidence in criminal jury trials. Admission of this evidence could result in only three ways. First, in stipulation agreements, where neither the defence nor prosecution are aware of the test results prior to the agreement, the defence may learn that such an agreement may produce no benefit (i.e. favourable results having no influence) and only potential harm (i.e. unfavourable test results, whether actual or due to a false positive). Hence such agreements could be abandoned by the defence. Second, admission of known favourable results over the objection of the prosecution could occur, but if these results have no influence on jury decisions, then the net effect would be an unnecessary attenuation of the trial process. Third, admission of unfavourable results over the objection of the defence would, of course, be very unlikely, given the protections provided in law against self-incrimination.⁴

³ Ironically, it is typical that the defence (e.g. Bailey and Rothblatt, 1977) argues for admission of this evidence and the prosecution opposes it (e.g. Abell, 1977).

⁴ While the suitability of admitting this type of evidence in criminal jury trials is questioned here, the possibility of inclusion in non-jury trials, of course, remains a possibility.

Explaining why unfavourable polygraph evidence has a significant impact on juror decisions while favourable polygraph evidence has no impact is a difficult problem. Some tentative explanations offered by Markwart and Lynch regarding cynical juror attitudes were tested through attitude items administered to the jurors. While these cynical juror attitudes were apparent to some small degree, they were not widely evident, nor was a direct connection between these and juror decisions able to be firmly established. There was, however, somewhat stronger evidence in the finding that one-quarter of those exposed to polygraph evidence expressed a sole distrust of the defence and the majority of these -- in contradistinction to those who did not express such sole distrust -- returned guilty verdicts. This distrust of the defence could be a product of preconceived attitudes brought into the jury situation⁵ and/or the "ingratiator's dilemma". In regard to the latter, Jones (1972) hypothesizes that favourable self-presentations may be dangerous, especially when it is apparent to the target person that the ingratiator may have something to gain. Jones suggests that the target person may conclude the ingratiator is being deceitful and manipulative, this having negative consequences for him.

⁵ Public opinion polls, while not discriminating between criminal and civil lawyers or the defence and prosecution, indicate that 23 percent of Canadians (Gallup, 1976) and 27 percent of Americans (Gallup, 1981) rank lawyers as low or very low in honesty and ethical standards. Arguably, potential jurors may perceive the defence as having more to gain (e.g. reputation, pecuniary incentives) than the prosecution, who may be viewed as a disinterested party just "doing his job"; hence a greater degree of distrust. Further, the general knowledge that some actually guilty persons escape justice due to legal technicality or persuasive argument by the defence may result in more negative attitudes toward the defence.

There is experimental validation of this hypothesis in a decision-making context somewhat similar to a simulated jury experiment (Frankel and Morris, 1976).⁶ Applying this to the present study, an ingratiating agent (i.e. the defence) who makes a favourable presentation (e.g. favourable polygraph results) or failing in an attempt to do so and then explaining away the results (e.g. unfavourable polygraph results) could have resulted in negative consequences for the defence. This possible phenomena is worthy of further research in simulated jury experiments and, of course, need not only be studied with respect to the profferal of polygraph evidence.

While cynical juror attitudes about the defence in particular may, debatably, assist in explaining these results, other cynical juror attitudes (e.g. suspiciousness about volunteering for the test, etc) need not be dismissed outright even though they were not widely evident -- at least a few expressed these other cynical attitudes and some of these returned guilty verdicts. Further, the difference in verdicts between the favourable and unfavourable polygraph evidence conditions amounted to only eleven more guilty verdicts in the latter condition. To present an explanation, let us assume that in the favourable polygraph condition a small number were sufficiently impressed by the evidence itself and/or the favourable perception created by volunteering for the test, this group

⁶ This study involved students deciding punishment for a fellow student found guilty of academic plagiarism. The ingratiating plagiarist who offered exculpatory mitigating circumstances was punished significantly more harshly than one who offered nothing in defence.

returning verdicts for acquittal over and above what would be expected without this evidence. However, it is possible that an equivalent number of jurors could be sufficiently impressed by the unfavourable factors surrounding this test (e.g. distrust of the defence, etc.) to change their decisions in favour of conviction. The net effect here is that these positively influenced and negatively influenced decisions cancel each other out, producing no effect. On the other hand, the direct and negative effects of the polygraph evidence in the unfavourable condition would combine with the negative effects of cynical attitudes to yield more guilty verdicts. This explanation is, admittedly, a somewhat searching one and could be the subject of further research.

There are other findings in this study that are not particular to the impact of polygraph evidence on jury decisions, but rather are pertinent to simulated jury research in general. These, in brief, include:

- 1) There may be discrepancies between the actual influence of evidence on juror decisions and juror self-reports about that influence. For example, jurors in the favourable polygraph condition reported a more favourable view of the accuracy of the polygraph test than those in the unfavourable polygraph evidence condition, but actual decisions reflected impacts different than these self-reports. This suggests that methods involving post-deliberation juror self-reports (e.g. Barnett, 1973; Carlson et al., 1977) may be of limited utility.
- 2) Jury deliberations appear to serve to reinforce or strengthen the initial preferences of most jurors. Since the deliberations

were truncated it is unknown whether this decision reinforcement process would have persisted or not, or whether this represents a stage in the group decision-making process that largely precedes the onset of a majority decision-making process. In short, there may be a patterning of decision-making processes in jury deliberations. This could be the subject of future research.

- 3) Unfavourable character witness testimony appears to have no significant influence on jury decisions. While this evidence was intended for comparative purposes only in this study, it is a previously unstudied area and can be isolated for its own merits. Future research in this area could involve varying the degree and sources of this type of evidence, as well as examining the impact of favourable character witness testimony.
- 4) There was a great similarity in the decisions rendered by a student volunteer sample and a community volunteer sample hearing the same trial materials. This, of course, has methodological implications since the use of student samples has been criticized (e.g. Davis et al., 1977; Wilson, 1977).
- 5) Two demographic or "extra-legal" variables -- age and educational level -- did apparently significantly affect juror decisions, but sex and socioeconomic status did not. This contributes to the existing body of knowledge in this area (e.g., see Davis et al., 1977).

Finally, there are some limitations to this study which should be noted. Perhaps the foremost limitation involves the lack of opportunity

to directly observe the testimony of the polygraph expert and hence be provided a more thorough description of the polygraph technique. While it is true that the lack of opportunity to directly observe witnesses was constant for all the evidence, the polygraph evidence appeared to lack credibility among many -- most jurors disagreed that the test was accurate in detecting truth and deception even though they had been told the test was ninety percent accurate. This could mean that these jurors did not consider ninety percent accuracy to be "accurate" or that they simply did not believe the information provided. If the latter, a capable and articulate polygraph examiner in the witness box might have created a more favourable impression of the validity and reliability of the test, this possibly affecting the impact of the test results on decisions. Alternatively, however, polygraphy methods are certainly subject to challenge -- a well-versed cross-examining attorney or an adversary expert witness presenting conflicting opinions could offset any potential impact. This is an area worthy of further research.

There are other limitations to this study. The subjects were not randomly selected, but rather were volunteers and may not be representative of those found in a typical jury pool. Further, most juries were not complete 12-person juries, this having unknown effects on the decisions rendered. In a more general sense, an experiment is obviously a highly artificial situation and the degree of generalizability to an actual jury situation that obtains is open to question. For example, there are some studies which suggest that the behaviour and decisions of actual and simulated jurors may differ (Kirkby, 1974; Diamond and Zeisel, 1974; McCabe,

and Purves, 1974). By extension, there may also be differences in the way that the addition of evidence to a case affects the decision-making of actual and simulated jurors.

Davis et al. (1977) have discussed the limitations of simulated jury research and a comment by them appropriately captures the implications of the limits of this experiment:

"It thus seems prudent to avoid any imputations that principles inferred directly from an empirical study should guide legal practice ... on a one-to-one basis. An alternative is to view empirical studies as 'demonstrations' that may reveal that assumptions inherent in law do not always hold or that the legal system sometimes works in a way other than that officially prescribed." (p. 327)

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APPENDIX A

1. Judge's Introductory Remarks

You have been selected as the judges of fact by the accused and prosecution. It is your duty carefully, calmly and dispassionately to consider and weigh the evidence without the slightest trace of sympathy or prejudice for or against any party to this trial. It is important not only that justice be done but also that it be seen to be done. It is important that all concerned with this trial--counsel, witnesses, the people in this courtroom and in the community--be convinced that there has been a fair trial. Therefore, how you conduct yourselves in and out of this courtroom during every hour of the day while this trial is going on, is important to you and to the administration of justice.

You must not discuss this case with anyone nor let anyone tell you anything about it outside this courtroom. If anyone tries, politely refuse to listen, and if he or she insists, report it to me. The law imposes severe penalties on anyone who attempts to, or does, communicate with a juror respecting a matter on trial. I warn you especially in respect to your own families and your friends, since they very naturally will be curious to hear about the case. And what is more, I advise you not to discuss the case amongst yourselves, because of the great danger of coming to a premature conclusion. Your role should be one of patient, careful listening to the evidence. The time to discuss the case is when you have retired to consider your verdict. At that time you will have heard all the evidence, the arguments of counsel and my direction on the law, and you will be in a much better position to exchange views and to arrive at a fair conclusion. If you have heard or read anything about this case it is your duty to banish such information from your mind. You must decide whether the accused is innocent or guilty solely from the evidence you hear in this courtroom during the trial of the accused.

I shall now give you an outline of the procedure that is usually followed in a criminal trial. Our system of justice is known as the adversary system, which means that the presentation and examination of the witnesses is substantially in the control of the Crown Attorney and counsel for the defence. And subject to certain rules which I shall enforce, you and I, as impartial judges, will sit and listen to what the parties, their witnesses and counsel have to say. The case will begin with the Crown Attorney outlining to you the evidence he intends to present. The sole purpose of this is to assist you to understand the evidence for the Crown. What the Crown Attorney says when outlining to you the evidence he intends to present is not proof of anything, and is only a statement of what he hopes to prove. Subject to my control, he may also comment on the law.

Having outlined his case, the Crown Attorney will then call his witnesses. He will ask them questions in what is known as his examination-in-chief, by which is meant that he cannot suggest the answers in controversial matters, although he may do so in unimportant details. After the Crown Attorney has finished his examination of a Crown witness, counsel for the defence may cross-examine such Crown witness, and by that is meant he can ask questions to test the memory of the witness and the accuracy of his evidence. The purpose of cross-examination by counsel for the defence is to test the truth, to aid the witness in recalling other facts he may have forgotten, and also to bring out evidence in favour of the defence. When counsel for the defence has concluded his cross-examination of such Crown witness, the Crown Attorney will then be entitled to ask such Crown witness further questions to explain fresh matters which may have been brought out in cross-examination by counsel for the defence.

After the witnesses for the Crown have given their evidence and have been cross-examined, counsel for the defence may then outline to you the evidence he intends to present. The sole purpose of this is to assist you to understand the evidence for the defence. What counsel for the defence says when outlining to you the evidence he intends to present is not proof of anything, but only a statement of what he hopes to prove. Subject to my control, he may also comment on the law.

As the case proceeds, you will notice that from time to time I shall be called upon to rule on the admissibility of evidence tendered by the parties. We have a well-developed body of law which guides us as to what evidence is admissible and what evidence is inadmissible and you must be guided by my ruling. On some occasions I shall rule in your presence, but on others I may ask you to retire because it may be necessary for me to hear the evidence before ruling on it. When I ask you to retire, do not speculate on what is going on in your absence. Rest assured that anything that is proper for you to hear, you shall hear.

I suggest that sometime today you choose from among yourselves a juror who will act as foreman, and who will assist you to conduct your deliberations in a businesslike way. When you make this choice, please give to the Clerk of the Court the name of the juror whom you have chosen.

If any juror has difficulty in hearing any of the evidence, it will be his duty to advise your foreman, who in turn will give me this information.

It is now our duty to hear the evidence, and as I said at the beginning, it is your duty and mine to listen objectively without prejudice and without sympathy. If we listen in this manner, our task will be fulfilled.

The indictment against the accused reads that:

"Bernard O. Leary, on the eighteenth day of March, 1977, at the city of Ottawa, in the Judicial District of Ottawa-Carleton, during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit murder."

2. Case Summaries

2(a) Control Case

REGINA V. BERNARD O'LEARY

INDICTMENT: "Bernard O'Leary on the eighteenth day of March, 1977, at the City of Ottawa, in the Judicial District of Ottawa-Carleton, during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit murder".

SYNOPSIS: On March 18, 1977, a Sunday, two men drove up to a Pop Shoppe in Ottawa. The driver remained in the car and the other man, with a revolver, entered the Pop Shoppe where there were two customers, Mr. and Mrs. John Schulman. A robbery ensued and in the course of the robbery John Schulman unsuccessfully attempted to disarm the robber. Schulman was shot by the robber and died of those wounds.

Both the robber, André Rivard, and the driver of the car, Bernard O'Leary, were apprehended and charged with murder. Rivard initially pleaded not guilty but changed his plea and has been sentenced for murder. This is O'Leary's trial. The issue in this trial is whether O'Leary freely participated in the offence. The Crown alleges that he was the driver of the get-away car and thus a party to the offence. If he is proved to be a party to the offence, he is guilty of second degree murder even though he did not enter the shop or do any shooting.

COURT TESTIMONY: O'Leary previously worked at the Pop Shoppe, but due to a back injury was laid off. He was a casual friend of Rivard's. He has a girlfriend, Suzanne James, whom he intends to marry.

While the robbery was in progress two other customers, Mr. and Mrs. Ross Wright, drove up to the Pop Shoppe. Mr. Wright in approaching the shop saw the robbery in progress through the window, returned to his car and drove a short distance to the nearest telephone booth to call the police. Mr. Wright testified that as he was returning to his car he observed O'Leary parked in his car behind the Pop Shoppe and at that time O'Leary drove away from the scene. The victim had not been shot at this time.

After Rivard had shot the victim and completed the robbery he left the store and proceeded to the back of the building. Mrs. Wright and a number of other witnesses testified that they observed Rivard cross the road behind the Pop Shoppe and observed O'Leary driving slowly along the road toward Rivard. O'Leary drove by him however. Witnesses further testified that O'Leary drove about a quarter of a mile up the road, but did a U-turn and proceeded back in Rivard's direction. He passed him however and continued on. About this time a police car, sirens on, was proceeding to the scene, arrived, and apprehended Rivard.

O'Leary's girlfriend and her mother testified that O'Leary came to dinner that evening and made some reference to seeing a man with a pistol running along the road earlier in the day, but otherwise O'Leary appeared to be normal at dinner. She also testified that in a telephone call to her from the police station after his arrest, and in subsequent conversations, O'Leary has consistently told her of his innocence.

Rivard, who has an extensive criminal record, testified that he and O'Leary had planned the robbery together and that O'Leary was a willing participant. He also testified that O'Leary was quite nervous and apprehensive on the day of the robbery.

O'Leary, who has one previous conviction for a minor theft, also testified in his own behalf. His testimony and earlier statements to the police were consistent with the assertion that while he had briefly discussed a possible robbery with Rivard at an earlier time he only did so jokingly and when Rivard appeared to take him seriously he clearly communicated to him that he was not serious. He also testified that on the day of the robbery he was at his girlfriend's home and that Rivard called there for some help with some car trouble. This phone call was corroborated by his girlfriend. O'Leary testified that when he met Rivard and drove him to Hull, Rivard invited him to rob the Pop Shoppe and when he refused Rivard held him at gunpoint and compelled him to participate in the robbery. He stated that he waited for a while in the car and twice drove by Rivard because Rivard threatened to "get him" if he did not cooperate and he was frightened and indecisive. He also stated he did not tell his girlfriend immediately because her mother was there and he did not call the police, nor stop when he heard police sirens, for fear they would not believe him.

Crown's Theory

That O'Leary was a willing participant in the offence. It is suggested that O'Leary drove away when the Wrights approached the Pop Shoppe only because he knew the police were going to be called and he wanted to avoid detection. O'Leary's participation in the offence is underlined by him driving down the back road to meet Rivard, but when he saw that there would be witnesses to this, he again drove away to save his skin. When O'Leary did a U-turn he did so in the hope he was out of sight of the witnesses and he could pick up Rivard without detection, but when he heard police sirens he took off. The Crown's contention is that O'Leary's free participation is corroborated by Rivard's testimony and Rivard has no reason to lie. O'Leary's behaviour is not consistent with a person in fear of his life. Any reasonable person in fear of his life would have driven immediately away from the scene once Rivard left the car, surely would have contacted the police, at least would have told his girlfriend, and would not have acted normally at his girlfriend's that same evening.

Defence Theory

That O'Leary, in genuine fear of his life, was compelled to participate in the robbery. O'Leary's action of leaving the scene is consistent with being forced to participate. O'Leary speeded up when Rivard approached the car the first time not for fear of detection but to avoid him. He turned around to see if Rivard had been picked up by the police in order to allay his fears, but seeing he had not, he continued on. He did not contact the police because of fear he would not be believed and to give him time to collect his wits. All of O'Leary's testimony, statements to the police, and a telephone statement to his girlfriend from the police station have been consistent with him having been compelled to participate. While his behaviour at the time may not have been the most logical, one cannot expect that a person under threat of his life and great stress will act in the most reasonable fashion.

2(b) Favourable Polygraph Evidence

REGINA V. BERNARD O'LEARY

INDICTMENT: "Bernard O'Leary on the eighteenth day of March, 1977, at the City of Ottawa, in the Judicial District of Ottawa-Carleton, during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit murder".

SYNOPSIS: On March 18, 1977, a Sunday, two men drove up to a Pop Shoppe in Ottawa. The driver remained in the car and the other man, with a revolver, entered the Pop Shoppe where there were two customers, Mr. and Mrs. John Schulman. A robbery ensued and in the course of the robbery John Schulman unsuccessfully attempted to disarm the robber. Schulman was shot by the robber and died of those wounds.

Both the robber, André Rivard, and the driver of the car, Bernard O'Leary, were apprehended and charged with murder. Rivard initially pleaded not guilty but changed his plea and has been sentenced for murder. This is O'Leary's trial. The issue in this trial is whether O'Leary freely participated in the offence. The Crown alleges that he was the driver of the get-away car and thus a party to the offence. If he is proved to be a party to the offence, he is guilty of second degree murder even though he did not enter the shop or do any shooting.

COURT TESTIMONY: O'Leary previously worked at the Pop Shoppe, but due to a back injury was laid off. He was a casual friend of Rivard's. He has a girlfriend, Suzanne James, whom he intends to marry.

While the robbery was in progress two other customers, Mr. and Mrs. Ross Wright, drove up to the Pop Shoppe, Mr. Wright in approaching the shop saw the robbery in progress through the window, returned to his car and drove a short distance to the nearest telephone booth to call the police. Mr. Wright testified that as he was returning to his car he observed O'Leary parked in his car behind the Pop Shoppe and at that time O'Leary drove away from the scene. The victim had not been shot at this time.

After Rivard had shot the victim and completed the robbery he left the store and proceeded to the back of the building. Mrs. Wright and a number of other witnesses testified that they observed Rivard cross the road behind the Pop Shoppe and observed O'Leary driving slowly along the road toward Rivard. O'Leary drove by him however. Witnesses further testified that O'Leary drove about a quarter of a mile up the road, but did a U-turn and proceeded back in Rivard's direction. He passed him however and continued on. About this time a police car, sirens on, was proceeding to the scene, arrived, and apprehended Rivard.

O'Leary's girlfriend and her mother testified that O'Leary came to dinner that evening and made some reference to seeing a man with a pistol running along the road earlier in the day, but otherwise O'Leary appeared to be normal at dinner. She also testified that ~~in~~ a telephone call to her from the police station after his arrest, and in subsequent conversations, O'Leary has consistently told her of his innocence.

Rivard, who has an extensive criminal record, testified that he and O'Leary had planned the robbery together and that O'Leary was a willing participant. He also testified that O'Leary was quite nervous and apprehensive on the day of the robbery.

O'Leary, who has one previous conviction for a minor theft, also testified in his own behalf. His testimony and earlier statements to the police were consistent with the assertion that while he had briefly discussed a possible robbery with Rivard at an earlier time, he only did so jokingly and when Rivard appeared to take him seriously he clearly communicated to him that he was not serious. He also testified that on the day of the robbery he was at his girlfriend's home and that Rivard called there for some help with some car trouble. This phone call was corroborated by his girlfriend. O'Leary testified that when he met Rivard and drove him to Hull, Rivard invited him to rob the Pop Shoppe and when he refused Rivard held him at gunpoint and compelled him to participate in the robbery. He stated that he waited for a while in the car and twice drove by Rivard because Rivard threatened to "get him" if he did not co-operate and he was frightened and indecisive. He also stated that he did not tell his girlfriend immediately because her mother was there and he did not call the police, nor stop when he heard police sirens, for fear they would not believe him.

Testimony from a polygraph ("lie detector") expert was introduced. The court was advised that experimental testing has revealed that the polygraph is 90% accurate in detecting truth and deception and that when errors are made the preponderance of errors tend to be "false positive", that is, that when an error is made, most often the test tends to show an actually innocent person to be found lying. O'Leary was tested by the polygraph expert, who expressed the opinion that he was telling the truth.

Crown's Theory

That O'Leary was a willing participant in the offence. It is suggested that O'Leary drove away when the Wright's approached the Pop Shoppe only because he knew the police were going to be called and he wanted to avoid detection. O'Leary's participation in the offence is underlined by him driving down the back road to meet Rivard, but when he saw there would be witnesses to this he again drove away to save his skin. When O'Leary did a U-turn he did so in the hope he was out of sight of the witnesses and he could pick up Rivard without detection, but when he

heard police sirens he took off. The Crown's contention is that O'Leary's free participation is corroborated by Rivard's testimony and Rivard has no reason to lie. Although the polygraph evidence favours O'Leary it should be remembered that the polygraph makes relatively frequent errors and the circumstances of the case point to O'Leary's guilt and Rivard's testimony contradicts the polygraph results. O'Leary's behaviour is not consistent with a person in fear of his life. Any reasonable person in fear of his life would have driven immediately away from the scene once Rivard left the car, surely would have contacted the police, would at least have told his girlfriend, and would not have acted normally at his girlfriend's the same evening.

Defence Theory

That O'Leary, in genuine fear of his life, was compelled to participate in the robbery. O'Leary's action of leaving the scene is consistent with being forced to participate. O'Leary speeded up when Rivard approached the car the first time, not for fear of detection, but to avoid him. He turned around to see if Rivard had been picked up by the police in order to allay his fears, but seeing that he had not he continued on. He did not contact the police because of fear he would not be believed and to give him time to collect his wits. All of O'Leary's testimony, statements to the police, and a telephone statement to his girlfriend from the police station have been consistent with him having been compelled to participate and have been corroborated by the testimony of the polygraph expert. While his behaviour at the time may not have been the most logical, one cannot expect that a person under threat of his life and great stress will act in the most reasonable fashion.

2(c) Unfavourable Polygraph Evidence

REGINA V. BERNARD O'LEARY

INDICTMENT: "Bernard O'Leary on the eighteenth day of March, 1977, at the City of Ottawa, in the Judicial District of Ottawa-Carleton, during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit murder".

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COURT TESTIMONY: O'Leary previously worked at the Pop Shoppe, but due to a back injury was laid off. He was a casual friend of Rivard's. He has a girlfriend, Suzanne James, whom he intends to marry.

While the robbery was in progress two other customers, Mr. and Mrs. Ross Wright, drove up to the Pop Shoppe. Mr. Wright in approaching the shop saw the robbery in progress through the window, returned to his car and drove a short distance to the nearest telephone booth to call the police. Mr. Wright testified that as he was returning to his car he observed O'Leary parked in his car behind the Pop Shoppe and at that time O'Leary drove away from the scene. The victim had not been shot at this time.

After Rivard had shot the victim and completed the robbery he left the store and proceeded to the back of the building. Mrs. Wright and a number of other witnesses testified that they observed Rivard cross the road behind the Pop Shoppe and observed O'Leary driving slowly along the road toward Rivard. O'Leary drove by him however. Witnesses further testified that O'Leary drove about a quarter of a mile up the road, but did a U-turn and proceeded back in Rivard's direction. He passed him however and continued on. About this time a police car, sirens on, was proceeding to the scene, arrived, and apprehended Rivard.

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O'Leary's girlfriend and her mother testified that O'Leary came to dinner that evening and made some reference to seeing a man with a pistol running along the road earlier in the day, but otherwise O'Leary appeared to be normal at dinner. She also testified that in a telephone call to her from the police station after his arrest, and in subsequent conversations, O'Leary has consistently told her of his innocence.

Rivard, who has an extensive criminal record, testified that he and O'Leary had planned the robbery together and that O'Leary was a willing participant. He also testified that O'Leary was quite nervous and apprehensive on the day of the robbery.

O'Leary, who has one previous conviction for a minor theft, also testified in his own behalf. His testimony and earlier statements to the police were consistent with the assertion that while he had briefly discussed a possible robbery with Rivard at an earlier time he only did so jokingly and when Rivard appeared to take him seriously he clearly communicated to him that he was not serious. He also testified that on the day of the robbery he was at his girlfriend's home and that Rivard called there for some help with some car trouble. This phone call was corroborated by his girlfriend. O'Leary testified that when he met Rivard and drove him to Hull, Rivard invited him to rob the Pop Shoppe and when he refused Rivard held him at gunpoint and compelled him to participate in the robbery. He stated that he waited for a while in the car and twice drove by Rivard because Rivard threatened to "get him" if he did not co-operate and he was frightened and indecisive. He also stated that he did not tell his girlfriend immediately because her mother was there and he did not call the police, nor stop when he heard police sirens, for fear they would not believe him.

Testimony from a polygraph ("lie detector") expert was introduced. The court was advised that experimental testing has revealed that the polygraph is 90% accurate in detecting truth and deception and that when errors are made the preponderance of errors tend to be "false positive", that is, that when an error is made, most often the test tends to show an actually innocent person to be found lying. O'Leary was tested by the polygraph expert, who expressed the opinion that he was not telling the truth.

Crown's Theory

That O'Leary was a willing participant in the offence. It is suggested that O'Leary drove away when the Wright's approached the Pop Shoppe only because he knew the police were going to be called and he wanted to avoid detection. O'Leary's participation in the offence is underlined by him driving down the back road to meet Rivard, but when he saw there would be witnesses to this he again drove away to save his skin. When O'Leary did a U-turn he did so in the hope he was out of sight of the witnesses and he could pick up Rivard without detection, but when he

heard police sirens he took off. The Crown's contention is that O'Leary's free participation is corroborated by Rivard's testimony and Rivard has no reason to lie. Moreover, O'Leary's story has been clearly shown to be false by the polygraph evidence. O'Leary's behaviour is not consistent with a person in fear of his life. Any reasonable person in fear of his life would have driven immediately away from the scene once Rivard left the car, surely would have contacted the police, would at least have told his girlfriend, and would not have acted normally at his girlfriend's the same evening.

Defence Theory

That O'Leary, in genuine fear of his life, was compelled to participate in the robbery. O'Leary's action of leaving the scene is consistent with being forced to participate. O'Leary speeded up when Rivard approached the car for the first time, not for fear of detection, but to avoid him. He turned around to see if Rivard had been picked up by the police in order to allay his fears, but seeing that he had not he continued on. He did not contact the police because of fear he would not be believed and to give him time to collect his wits. All of O'Leary's testimony, statements to the police, and a telephone statement to his girlfriend from the police station have been consistent with him having been compelled to participate. While his behaviour at the time may not have been the most logical, one cannot expect that a person under threat of his life and great stress will act in the most reasonable fashion. The polygraph evidence should be looked at skeptically because the test makes relatively frequent errors and most of the errors show truly innocent persons to be guilty. It is suggested that this is the case here. The only value of the polygraph here is that O'Leary's willingness to take the test is a measure of his true sincerity. An actually guilty person would not volunteer to take such a test.

2(d) Unfavourable Character Witness Evidence

REGINA V. BERNARD O'LEARY

INDICTMENT: "Bernard O'Leary on the eighteenth day of March, 1977, at the City of Ottawa, in the Judicial District of Ottawa-Carleton, during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit murder".

SYNOPSIS: On March 18, 1977, a Sunday, two men drove up to a Pop Shoppe in Ottawa. The driver remained in the car and the other man, with a revolver, entered the Pop Shoppe where there were two customers, Mr. and Mrs. John Schulman. A robbery ensued and in the course of the robbery John Schulman unsuccessfully attempted to disarm the robber. Schulman was shot by the robber and died of those wounds.

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COURT TESTIMONY: O'Leary previously worked at the Pop Shoppe, but due to a back injury was laid off. He was a casual friend of Rivard's. He has a girlfriend, Suzanne James, whom he intends to marry.

While the robbery was in progress two other customers, Mr. and Mrs. Ross Wright, drove up to the Pop Shoppe, Mr. Wright in approaching the shop saw the robbery in progress through the window, returned to his car and drove a short distance to the nearest telephone booth to call the police. Mr. Wright testified that as he was returning to his car he observed O'Leary parked in his car behind the Pop Shoppe and at that time O'Leary drove away from the scene. The victim had not been shot at this time.

After Rivard had shot the victim and completed the robbery he left the store and proceeded to the back of the building. Mrs. Wright and a number of other witnesses testified that they observed Rivard cross the road behind the Pop Shoppe and observed O'Leary driving slowly along the road toward Rivard. O'Leary drove by him however. Witnesses further testified that O'Leary drove about a quarter of a mile up the road, but did a U-turn and proceeded back in Rivard's direction. He passed him however and continued on. About this time a police car, sirens on, was proceeding to the scene, arrived, and apprehended Rivard.

O'Leary's girlfriend and her mother testified that O'Leary came to dinner that evening and made some reference to seeing a man with a pistol running along the road earlier in the day, but otherwise O'Leary appeared to be normal at dinner. She also testified that in a telephone call to her from the police station after his arrest, and in subsequent conversations, O'Leary has consistently told her of his innocence.

Rivard, who has an extensive criminal record, testified that he and O'Leary had planned the robbery together and that O'Leary was a willing participant. He also testified that O'Leary was quite nervous and apprehensive on the day of the robbery.

O'Leary, who has one previous conviction for a minor theft, also testified in his own behalf. His testimony and earlier statements to the police were consistent with the assertion that while he had briefly discussed a possible robbery with Rivard at an earlier time he only did so jokingly and when Rivard appeared to take him seriously he clearly communicated to him that he was not serious. He also testified that on the day of the robbery he was at his girlfriend's home and that Rivard called there for some help with some car trouble. This phone call was corroborated by his girlfriend. O'Leary testified that when he met Rivard and drove him to Hull, Rivard invited him to rob the Pop Shoppe and when he refused Rivard held him at gunpoint and compelled him to participate in the robbery. He stated that he waited for a while in the car and twice drove by Rivard because Rivard threatened to "get him" if he did not co-operate and he was frightened and indecisive. He also stated that he did not tell his girlfriend immediately because her mother was there and he did not call the police, nor stop when he heard police sirens, for fear they would not believe him.

In addition to this testimony about the circumstances of the offence, two character witnesses were called by the prosecution. Character witnesses are often called in trials to give evidence about an accused's reputation in the community, this being used as a measure of the accused's credibility. In this case, O'Leary's former high school principal, who is also a neighbour, and O'Leary's former probation officer gave evidence. Both were familiar with O'Leary and stated that he had acquired a reputation for not being reliable nor trustworthy.

Crown's Theory

That O'Leary was a willing participant in the offence. It is suggested that O'Leary drove away when the Wrights approached the Pop Shoppe only because he knew the police were going to be called and he wanted to avoid detection. O'Leary's participation in the offence is underlined by him driving down the back road to meet Rivard, but when he saw that there would be witnesses to this, he again drove away to save his skin. When O'Leary did a U-turn he did so in the hope he was out of sight of the witnesses and he could pick up Rivard without

detection, but when he heard police sirens he took off. The Crown's contention is that O'Leary's free participation is corroborated by Rivard's testimony and Rivard has no reason to lie. Moreover, the credibility of O'Leary's testimony about being compelled is clearly undermined by the testimony of the character witnesses who indicate that O'Leary is known to be unreliable and not trustworthy. O'Leary's behaviour is not consistent with a person in fear of his life. Any reasonable person in fear of his life would have driven immediately away from the scene once Rivard left the car, surely would have contacted the police, at least would have told his girlfriend, and would not have acted normally at his girlfriend's that evening.

Defence Theory

That O'Leary, in genuine fear of his life, was compelled to participate in the robbery. O'Leary's action of leaving the scene is consistent with being forced to participate. O'Leary speeded up when Rivard approached the car the first time not for fear of detection but to avoid him. He turned around to see if Rivard had been picked up by the police in order to allay his fears, but seeing he had not, he continued on. He did not contact the police because of fear he would not be believed and to give him time to collect his wits. All of O'Leary's testimony, statements to the police, and a telephone statement to his girlfriend from the police station have been consistent with him having been compelled to participate. While his behaviour at the time may not have been the most logical, one cannot expect that a person under threat of his life and great stress will act in the most reasonable fashion.

3. Judge's Charge to the Jury

3(a) Control Case

Ladies and Gentlemen of the jury, as I mentioned to you at the opening of this trial, I will be instructing you at this time on the law that applies to this case, and show you how to apply the law to the facts as you find them.

Before I begin, I would like to thank the counsel in this case for the very excellent manner in which it has been presented to us. Their fairness and co-operation have been appreciated by me. Secondly, I want to thank you, the members of the jury, for your attentiveness and for your punctuality. Your help in the orderly conduct of this trial has been greatly appreciated by me.

Trial by jury is one of the cornerstones of our democratic system of government and we must do all in our power to ensure that it operates properly, fairly and efficiently.

As has been so often said in this trial, you are created the judges to decide the guilt or innocence of the accused. Your responsibility as judges is a heavy one, not to be undertaken lightly or capriciously, but seriously and courageously, having in mind your duty to the state, to the community, and to the accused.

One of the functions of the state is to protect the life and property of all its citizens. Crime must be suppressed, and when detected, the offender must be dealt with according to the law. Your responsibility and duty in this case is to ascertain whether a crime has been committed and if so, whether the accused committed it. You also owe a high duty to the accused to see that he is not improperly convicted and that he receives the full benefit of all defences which are afforded to him by the law.

This may be the first time that some of you have sat on a jury and, therefore, to the best of my ability, I will explain the relevant aspects of a trial by jury. I propose to break my charge into sections and I will announce the section headings in the hope that it will make it easier for you to follow what I have to say.

The Functions of the Judge and Jury

I want to review with you the functions which you and I must perform in this trial. As I told you at the outset, you are the sole judges of the facts and I am the sole judge of the law. It is my duty to

instruct you concerning the law which applies to this case, and it is your duty to follow the law as I state it to you. You will not be guided by your own views of what the law is; you must accept the law as I outline it for you.

On the other hand, you are the sole judges of the facts. It is your duty to decide what the facts are in this case from the evidence that you have heard in this courtroom. In determining the guilt or innocence of the accused, you are to be governed by the evidence that you have heard during this trial and by nothing else, and you must rely upon your own recollection of the evidence.

To assist you, I propose in this address, to review some of the evidence for you, but I may fail to mention something that you believe to be important or I may mention something which to you is not important, and that is as it should be, because it is not my view of the evidence, nor the lawyers' view of the evidence which is decisive. You and you alone will decide what is the important and relevant evidence in this case.

Now, in approaching your duties, I would ask that you act in the same manner that you would expect a fair and impartial judge to act. You will behave objectively; you will decide the guilt or innocence of the accused without pity, sympathy, prejudice or passion. No amount of sympathy will make an accused innocent, and no amount of prejudice will make an accused guilty. An accused is either guilty or not guilty on the evidence and on the evidence alone.

During my remarks, I may consciously or unconsciously express an opinion with regard to the evidence. Under our law, a judge is entitled to do that. But if I do so, I want to emphasize that you are in no way bound to follow my opinion on the facts. You and you alone are the sole judges of the facts.

The Evidence

I want to discuss certain matters of evidence. You must of course consider the evidence as a whole, and you must consider it fully, honestly, and impartially. But there are certain points that I want to refer to in the hope that it will make it easier when you are considering your verdict.

The Credibility of Witnesses

You are the sole judges of the credibility or truthfulness of witnesses and of the weight to be given to the testimony of each witness. In deciding the credibility or truthfulness of a witness, you should bring to bear your common everyday experience in such matters; in other words,

use good common sense. If you have a reasonable doubt as to the accuracy of the evidence given by a witness or the weight that you should give to the evidence of a witness, you must give the benefit of that doubt to the accused not to the prosecution.

Direct and Circumstantial Evidence

In court proceedings, a fact may be established by direct or circumstantial evidence. Direct evidence consists of the testimony of a witness who with any of the physical senses perceived the act in question. For example, the evidence of Mrs. Wright that she saw the man coming over the fence behind the Pop Shoppe, that is direct evidence.

However, you are not required to rely only upon direct evidence. The law does not demand that you act on certainties alone. In all our activities, we act on just and reasonable circumstances, and in court proceedings also, a fact may be proved by circumstantial evidence.

To prove a fact by circumstantial evidence involves this: there being no or insufficient direct evidence of a fact, you may infer it from evidence of other surrounding facts. Let me illustrate that for you by a very commonplace example: if I get up in the morning and look out my window and see the leaves blowing and people bending with the wind and their coat collars turned up, it is a reasonable conclusion that it is a cold, windy morning outside. I have not been outside yet, but it is reasonable to conclude that it is a cold, windy day, and that conclusion is inconsistent with any other reasonable conclusion.

You are entitled, in this case, to draw inferences, but your inferences must be based on the evidence, not on hunches, guesses or surmises and to the extent that you do rely on circumstantial evidence, the circumstances must be consistent with the guilt of the accused and inconsistent with any other rational conclusion.

Statements by the Accused.

I have permitted certain oral and written statements alleged to have been made by the accused O'Leary to be given in evidence before you. The fact that I have permitted those statements to be admitted does not mean that the statements were made or that they are true. It is for you to decide whether the statements were made and, as in the case of all other evidence, if you have a reasonable doubt as to whether or not a statement was made, you will reject it.

If you find that a statement was made, you can believe all of the statement, part of it, or you can reject it entirely. You are the sole judges as to whether or not a statement, in whole or in part, is an

acknowledgment by the accused of the truth of the matters contained in it. So much of the statement as you find to be an acknowledgment of the truth, you will take into consideration as evidence in this case, and you will decide the weight to be given to that evidence.

The Evidence Generally

I have dealt with certain specific matters regarding the evidence and I would like to conclude with certain general remarks about the evidence. You are to decide what evidence you believe and what you disbelieve. You will remember that you can believe all of the evidence given by a witness, none of it, or part of it. You are not obliged to accept any part just because there is no denial of it. Remember also, if you have a reasonable doubt about any of the evidence, you will give the benefit of that doubt to the accused and you will reject it.

The Presumption of Innocence

Simply put, this means that an accused person is presumed to be innocent until the Crown have satisfied you beyond a reasonable doubt of his guilt. That presumption remains with the accused from the beginning of this case until the end.

The Burden of Proof

The onus or burden of proving the guilt of an accused beyond a reasonable doubt rests upon the Crown and never shifts. There is no burden on an accused person under our system of law to prove his innocence.

The Crown must prove beyond a reasonable doubt that an accused person is guilty of the offence with which he is charged before he can be convicted. If you have a reasonable doubt as to whether the accused committed the offence with which he is charged, it is your duty to give the accused the benefit of that doubt and find him not guilty.

When I speak of a reasonable doubt, I use those words in their ordinary natural meaning, not as a legal term having some specific connotation. To be effective, the doubt should be real, honest, and sensible. It should not be a capricious or foolish doubt which might be conceived by an irresponsible juror to avoid doing his plain duty.

The Offence Charged

Before I deal with the offence with which the accused is charged, I think it may assist you if I review very briefly the events that took place on March 18, 1977. You will remember that if there is anything that I do not mention that you think is important, it is your decision, not mine, that is the thing to be followed.

At 1560 Triole Street in the City of Ottawa, there is a store which sells soft drinks, known as the Pop Shoppe. The premises of the Pop Shoppe are divided into two halves: the north half is a retail store; the south half is the warehouse section, and it contains the machinery for bottling drinks.

On Sunday, March 18, 1977, at about 5:15 p.m., Harry Reis, an employee of the Pop Shoppe, was working the the store part of the premises. Over the entrance to the store is a small office. David Merton, the manager of the Pop Shoppe, was working in that office. At about 5:15 p.m., two customers John Schulman and his wife Claudette Schulman, entered the Pop Shoppe to purchase some soft drinks. Shortly after the Schulmans entered, the accused O'Leary parked his 1965 green Pontiac at the rear of the Pop Shoppe.

In the written statement that has been put in as an exhibit, O'Leary said, "He...(and he was referring to his alleged co-accused Rivard) ...wanted me to wait beside the building and I told him 'no'. It was too close. I would park near where the body shop is." Now, the body shop is not shown in exhibit 2 the sketch of the area, but as the Defence mentioned, it does appear in exhibit 3 a photograph of the intersection of Belfast Road and St. Laurent Boulevard, and there is no doubt that it is located at the rear of the Pop Shoppe.

In the Pontiac automobile with O'Leary was André Rivard. Rivard had both a revolver and a rifle. Rivard entered the Pop Shoppe. In the course of the robbery, John Schulman attempted to grab Rivard, and Rivard shot Schulman in the chest with his rifle. Schulman died from those wounds. Rivard has already admitted to his role in the murder and has been appropriately dealt with by this court. The issue to decide here is O'Leary's involvement.

As the robbery was in progress, an automobile driven by Ross Wright drove up to the front of the Pop Shoppe. Wright was also intending to buy some drinks. As he was about to get out of his automobile, Wright saw the robbery in progress through the front window of the store. Wright backed out of the parking lot; he went to the Sun Light Service Station at the corner of Belfast Road and St. Laurent Boulevard, and he called the police.

In his written statement, O'Leary said, "He...(that is, Rivard) ...left the car and went into the store, about 15 seconds later, the other car pulled in the yard and I seen them, the people in the other car took off just as fast as they came. When I saw that, I left him. He had told me if I didn't wait for him there, he would catch up with me later. Then I didn't know what to do. I was nervous. I went around the block once, then I seen him coming, running, he had a rifle and a bag. I was going about 15 m.p.h. and Rivard with the rifle came to grab the door, when I saw this, I took off. He hit my car when I took off."

Now, the Defence suggested to you that there is nothing to prove that the car that O'Leary saw was the Wright car; nothing to link the two together. On the other hand, the Crown submit that the only reasonable inference is that the car that O'Leary is referring to is the Wright car.

While her husband was calling the police at the Sun Light Service Station, Mrs. Wright waited outside. She saw Rivard come over the fence at the back of the Pop Shoppe. She observed the one man cross the road towards the Sun Light Station. Both Mr. and Mrs. Wright saw the O'Leary automobile coming along in a westerly direction on Belfast Road. They say that the car was proceeding slowly. Both Mr. and Mrs. Wright saw Rivard try to grab the handle of the rear door of the O'Leary automobile, and they both confirmed that O'Leary speeded up and went along Belfast Road, through the intersection of St. Laurent and Belfast.

A number of witnesses saw Rivard running along Belfast Road, and those witnesses all confirmed that Rivard appeared to be looking for something. There seems little doubt that Rivard was looking for O'Leary's automobile.

As to O'Leary's actions at this time, O'Leary in his statement said, "I kept going straight on Belfast and I went about a quarter of a mile. I made a U-turn and I came back to see what was going to happen, and on the way back, just at the railroad tracks, he tried to stop me, but I kept going, then I met the police car and I got scared and I took off."

The witnesses who were watching Rivard running along Belfast Road saw the O'Leary vehicle come back in an easterly direction on Belfast just at the time the police were arriving. They saw O'Leary turn right at St. Laurent and proceed south on St. Laurent Boulevard.

Now, having given you that short summary of the facts, let me now turn to the charge against the accused O'Leary. The indictment charges that:

"Bernard O'Leary on the eighteenth day of March, A.D. 1977, at the City of Ottawa, in the Judicial District of Ottawa-Carleton during the commission of an armed robbery did unlawfully kill John Schulman and did thereby commit non-capital murder."

At the outset, let me tell you that you do not have to concern yourselves about the words "non-capital murder". The difference between capital and non-capital murder is of no consequence in this case. To make matters easier for you, I will simply refer to the alleged offence as murder.

Under our Criminal Code, if a person uses a weapon during the commission of a robbery and death results to someone from the use of that weapon, the person who fires the firearm is guilty of murder. You will recall that in his closing address to you, counsel for the accused O'Leary acknowledged that when Rivard fired the rifle and killed John Schulman, he committed murder. You do not have to worry about that. It is admitted that when Rivard fired the rifle and killed Schulman that that constituted the offence of murder.

However, let me repeat what I said to you yesterday: because Rivard pleaded guilty to murder, you must not assume that O'Leary is guilty of murder. I am going to outline for you in detail what you must find in order to return a verdict of guilty against O'Leary. But in arriving at your verdict, you must not be influenced by the guilt of Rivard.

Let me read to you Section 21(2) of the Criminal Code of Canada. It provides:

"Where two or more persons form an intention in common to carry out an unlawful purpose...(in this case robbery)...and to assist each other therein, and any one of them in carrying out the common purpose...(that is, the robbery)...commits an offence...(in this case murder)...each of them knew or ought to have known that the commission of the offence...(that is, murder)...would be a probable consequence of carrying out the common purpose, is a party to that offence."

You will see that it is possible under that section for you to find O'Leary guilty of murder even though he did not kill John Schulman or assist in any way in the killing. It is sometimes referred to as constructive murder.

For you to find O'Leary guilty of murder as a party to the offence within the provisions of the section that I have just read to you, the Crown must first prove beyond a reasonable doubt that O'Leary and Rivard formed an intention in common to rob the Pop Shoppe and to assist each other therein.

Now, the parties to this affair did not reduce their agreement to writing. That is not the way in which people who engage in activities of this type act. To determine if there was a common intention between Rivard and O'Leary to rob the Pop Shoppe, you will have to look at all the evidence. In particular you will consider the conduct of the parties leading up to and subsequent to the robbery, and you will also consider what took place at the scene of the events.

The evidence indicates that O'Leary worked in the warehouse part of the Pop Shoppe until about three weeks prior to the robbery. It appears that O'Leary hurt his back and that is the reason he left his employment. Apparently the receipts of the Pop Shoppe are not as large on a Sunday as on certain days of the week, but unlike other days, no deposits are made during the course of the day so that the amount of money taken in on Sunday would be in the store at about 5:00 o'clock in the afternoon. The evidence indicates that O'Leary did not work in the store; he worked in the warehouse, and he never worked on a Sunday. Mr. Merton, the manager, says O'Leary was a good employee; he was a trustworthy person.

Now the defence are asserting that O'Leary participated in this robbery because he was compelled to do so, and in that connection I charge you that if O'Leary joined in the common plot to rob the Pop Shoppe under threats of death or grievous bodily harm, that would negative his having a common intention with Rivard to rob the Pop Shoppe, and you must find O'Leary not guilty.

I wish to make it quite clear to you that there is no onus on O'Leary to show that he acted under that type of compulsion. The onus in this case is on the Crown throughout. The Crown must establish beyond a reasonable doubt that O'Leary formed a common intention with Rivard to rob the Pop Shoppe, and they must also prove that he did not act under compulsion. If on the evidence you have a reasonable doubt as to whether O'Leary joined in the common plan under threats of death or grievous bodily harm, then you must find him not guilty. By a threat of grievous bodily harm I mean a threat of really serious bodily harm.

Now, I do not intend to review with you all the evidence on compulsion, but let me remind you of certain parts of it. You will remember the evidence of Suzanne James, the girlfriend of Bernard O'Leary, who testified about O'Leary receiving a telephone call about 3:00 p.m. on Sunday, March 18. O'Leary told Suzanne that he had to pick up a guy who was having trouble with his car; and then O'Leary drove Suzanne to her home and left her. Then about 6:00 p.m. on Monday, March 19, that is the day after the robbery, O'Leary telephoned Suzanne from the police station and told her not to worry, that Rivard had pointed a gun at him and forced him to do it.

The defence reviewed with you in considerable detail the statement that Mr. O'Leary gave the police. You will see in that statement that O'Leary in several places asserted that he was forced to participate in this robbery. He said that Rivard pulled out the gun and told O'Leary that if he did not participate, he would blow his head off, and O'Leary said that Rivard told him that if he did not wait for him after he had gone in to commit the robbery, when he caught up to him, he would do him in.

There is no doubt in the evidence that when Rivard came out of the Pop Shoppe that O'Leary had left, and there is also no doubt on the evidence that when O'Leary drove past Rivard on Belfast Road and Rivard tried to open the back door, that O'Leary speeded up. Then there is O'Leary's statement that when he came back driving east on Belfast Road that Rivard tried to get in again, he drove past him and did not allow him to get into the car.

After the arrest of Rivard, O'Leary went to the James house and he had his supper. In their evidence, Suzanne James and Mrs. James said that O'Leary mentioned that he had seen a guy with a gun running on Belfast Road. However, Mrs. James said that O'Leary seemed quite normal that evening. There is no doubt that O'Leary made no endeavour to contact the police about his involvement in the robbery.

The Crown submit that on the evidence, you cannot find that O'Leary was compelled to participate in the robbery; rather, the Crown submit that the evidence all points to the fact that O'Leary was the one who set up the robbery. He knew about the Pop Shoppe; he had worked there. The Pop Shoppe was not a large operation. It is true that O'Leary had not worked on a Sunday, but in an operation of this size, it would be known about the receipts on Sunday and what was done with them.

The Crown submitted to you that O'Leary's part of the operation was to drive the get-away car. He did not go into the store because he was afraid he would be recognized by Reis or Merton, so it was arranged that he was to stay outside. When O'Leary saw the Wright automobile and saw Mr. Wright back out, he knew that the police were going to be called and he decided to get out of there to save his own skin. The Crown submitted to you that, if O'Leary had actually been forced, just as soon as Rivard went into the Pop Shoppe, he would have driven away, but he did not do that. He did not leave until he saw the car coming. If he had actually been in fear of his life as he says, he would not have driven slowly along Belfast Road where Rivard was coming out. He would go as far away from that area as he could. The Crown submitted to you that the reason he did not pick up Rivard was because he saw the people standing on Belfast Road and he did not want them to know that he was involved in this affair. If he could have got Rivard in the car without anyone seeing it, then he would have picked him up. When O'Leary came back along Belfast Road, he was coming back to try and pick Rivard up, but he could see the police coming and that is the reason he did not pick him up the second time.

The Crown says that the truth is contained in O'Leary's statement in the cells to Rivard when he said, "I told you if there was trouble I was scrambling, and there was trouble". In effect, the Crown says, O'Leary was saying, "If there is no trouble, I'll stay. If there is trouble, I'll leave."

The Crown asked you to consider O'Leary's conduct in not going to the police on Sunday evening, but going to the James home, having his supper and acting as though nothing was out of the way. He also asked you to consider that the police arrested O'Leary or took him to the cells about 6:00 a.m. on March 19, and it was not until noon that O'Leary came up with this story about being forced. On this evidence, the Crown says that there is no compulsion; that the accused participated in this robbery and his actions were only taken to try and save his skin.

(Further to this, Rivard, who has admitted to his involvement in these events and pleaded guilty to murder, has testified that he and O'Leary did plan to commit the robbery and that he did not force O'Leary at gunpoint to carry out his part in the offence. The Crown points to this testimony as clear evidence of O'Leary's guilt.

On the other hand, O'Leary also testified in his own behalf and his testimony clearly contradicts that of Rivard. O'Leary asserted that he was compelled at gunpoint to participate in the events. The defence submits that Rivard's testimony is not to be believed as he has an extensive criminal record and is of questionable character. Further to this, the defence submits that while O'Leary entertained the notion of a robbery at an earlier time with Rivard he did not do so seriously and clearly communicated this to Rivard. Rivard acknowledged that O'Leary was nervous and frightened on the day of the robbery and it is suggested by the defence that Rivard is resentful of O'Leary, who Rivard mistakenly perceived as a partner, for not carrying through with the plan and "blowing it" for him. The Crown here maintains that Rivard, already guilty of murder, has little to gain by deceiving this court, while O'Leary has much to gain.

It was stated earlier that you, as jurors, are the sole judges of the credibility of the witnesses in this trial. It seems appropriate at this point, however, to make some comment about factors that may be considered in weighing the credibility of the testimony given by Rivard and O'Leary in particular. Under section 12 of the Canada Evidence Act a witness may be queried as to his past criminal record and in this regard it was found that Rivard has an extensive record and O'Leary one previous conviction for a minor theft. In regard to Rivard's testimony you are under advisement to carefully scrutinize the credibility of his testimony considering his criminal record and his recent plea of guilty to murder. In regard to O'Leary, evidence of his past conviction for a minor theft should not be taken as an indication of his propensity to commit a crime, but as a measure of his credibility. It is to be pointed out here that his previous conviction was for only a minor theft, a shoplifting charge, some two years ago, a conviction which he freely and honestly admitted to on the witness stand. Also in O'Leary's favour here is the evidence given by Mr. Merton, O'Leary's employer at the Pop Shoppe, that O'Leary was considered a good employee and a trustworthy person.)*

* The bracketed section here represents the only major addition to the original charge.

Now the defence submitted to you that O'Leary's actions after he drove away from the back of the Pop Shoppe are consistent with him having been forced to participate. His speeding away, not permitting Rivard to get in the car, the defence says that was not because of the police sirens, because the evidence indicates that no one heard the police sirens at that time. The defence says that O'Leary came back along Belfast Road because he wanted to see what had happened to Rivard and to see if the police had picked him up, in view of the threats that had been made to him. The defence submitted to you that perhaps the actions of the accused were not the wisest, but of course this man is acting in an emergency and he does not do the things that perhaps he should have done, but that does not make him guilty of murder.

With regard to the conduct at the James home, the defence says he did tell both Suzanne and her mother about seeing the man with the rifle on Belfast Road. That indicates that he was concerned about what happened. In connection with the failure to telephone the police, the defence says that the evidence indicates that it was O'Leary who sent down to have the detectives come up so he could tell them that he had been forced to participate, and that his statement, and all the statements throughout, are consistent with his having been compelled to participate in this robbery. The defence says to you there is no reason for this man to have participated in this robbery. He did not leave the Pop Shoppe with any ill will; he was starting a new job on Monday; he had plans for being married. There was no reason at all why he should rob the Pop Shoppe. The defence submits to you that everything points of O'Leary having been forced to participate in this robbery under threats of death or grievous bodily harm.

Now, you will consider all the evidence and see if the Crown has satisfied you beyond a reasonable doubt that O'Leary formed an intention in common with Rivard to rob the Pop Shoppe. Remember that the onus is on the Crown to satisfy you beyond a reasonable doubt that O'Leary did not join in the robbery by reason of threats of death or grievous bodily harm. If you have a reasonable doubt that O'Leary acted under compulsion, you will give the benefit of this doubt to the accused and you will find him not guilty.

Even if you conclude that the Crown have proved that O'Leary formed an intention in common with Rivard to rob the Pop Shoppe, and even if you conclude that there was no compulsion, if O'Leary abandoned that common intention prior to the killing, you must find him not guilty. You see, if a person has got involved in a scheme for wrong doing, it is permissible for him to change his mind and to decide to abandon that wrongful scheme. If he does that before any killing takes place, he cannot be found guilty of murder as a party to a common plan.

To constitute abandonment it needs more than just a change of heart. Ordinarily, the person who is abandoning a joint venture for wrong doing, should clearly communicate to the other persons involved that he is

pulling out. But in this case it was not possible for O'Leary to do that as Rivard was in the Pop Shoppe. However, the defence submit that even if you find that there was no compulsion--and the defence says there was compulsion--the evidence bears out that O'Leary abandoned the venture.

Now, let us look at some of the evidence on abandonment. According to Ross William Wright, when he drove up and looked in the window of the Pop Shoppe, a man with a rifle was herding a male and female to the right-hand side of the store, and we know from Reis' evidence that Rivard herded Mr. and Mrs. Schulman and Reis to the area in the store where the safe was located. The safe was just under the stairs that led up to the manager's office. According to O'Leary's statement, it was when he saw the car back out that he left. Now, there is no doubt that at the time that Wright looked in the window that Schulman was still alive. The killing did not occur for some minutes after that. So if you find that when O'Leary backed his car out from where it was parked near the body shop, that he had abandoned the scheme at that time; then you will find O'Leary not guilty.

On the other hand, the Crown says that O'Leary did not leave because he was abandoning the robbery; he left because he saw that Mr. Wright was going to call the police. What O'Leary did was to drive around the area looking for an opportunity to pick up Rivard where he would not be seen. If he had abandoned the plan, the Crown says, why didn't he get out of that area at once?

Now, again, you will consider all the evidence on that issue. If you conclude that O'Leary abandoned the plan for the robbery in such a way that he made it clear that he was no longer involved prior to the shooting of Schulman, or if you have a reasonable doubt that he abandoned the plan prior to that time, you will find him not guilty.

Now, Ladies and Gentlemen, if you find that the Crown has proved beyond a reasonable doubt that O'Leary and Rivard formed an intention in common to rob the Pop Shoppe and to assist each other therein, and that O'Leary did not enter into that common plan under threats of death or grievous bodily harm, and if you find there was no abandonment of the common plan, then the Crown must next prove that it was in fact a probable consequence of the carrying out of the robbery that Rivard for the purpose of facilitating the commission of the robbery would intentionally cause bodily harm to some person, in this case, John Schulman. You will note that Section 21(2) speaks of a probable consequence. A thing is probable if it is more likely to happen than not. Under Section 21(2), as the defense mentioned to you, a possible consequence is not sufficient.

Now, the Crown does not have to prove that it was a probable consequence that Rivard would kill somebody who resisted the robbery. It is sufficient if the Crown proves that it was a probable consequence of the carrying out of the common intention that Rivard would intentionally cause bodily harm to someone.

Let me illustrate that matter of probability for you by two examples: If A and B go out to commit a robbery and they have no weapons and they have a clear understanding that they are not going to use any violence, and if A, without B's knowledge, slips a loaded revolver in his pocket and commits murder with that weapon in the course of that robbery, B could not be guilty of murder as a party to the offence as it would not be a probable consequence of that common intention that A would cause bodily harm to someone.

On the other hand, if A and B arm themselves with loaded weapons to commit a robbery and they are determined to use those weapons to overcome any opposition to the robbery, then if A commits murder in the course of the robbery, B could be guilty of murder as it would be a probable consequence of the carrying out of that common intention that bodily harm would be caused to some person.

In this case, Rivard had a rifle, and the Crown submits that it is probable that a person who carries a rifle to carry out a robbery is going to use that rifle if resistance is encountered and is going to cause bodily harm to some person.

On the other hand, the defence submits that there is no evidence to indicate that Rivard planned to use his rifle if resistance was encountered, and on the evidence you can have a reasonable doubt whether or not it was a probable consequence of this robbery that Rivard would intentionally cause bodily harm to someone who tried to resist it. You will look at the evidence and decide if, in fact, it was a probable consequence of the carrying out of the common intention that Rivard would intentionally cause bodily harm to someone who resisted.

If you find that all those requirements have been met, the Crown must next prove that O'Leary knew, or ought to have known, that it was probable that Rivard would intentionally cause bodily harm to someone who resisted the robbery. The Crown does not have to prove that O'Leary actually knew that was so; it is sufficient if the Crown proves that in the circumstances he ought to have known that that was a probable consequence.

The Crown submit to you that when O'Leary participated in this robbery with a man who had a rifle, he ought to have known that that rifle would be used if resistance were met in carrying out the robbery.

On the other hand, so far as the defence is concerned, there is no evidence to indicate that O'Leary knew that the rifle was loaded. The only evidence is O'Leary's statement that he drove Rivard to a place in Hull where a rifle was picked up, and the defence submit on this evidence, you must have a reasonable doubt that O'Leary knew or ought to have known that Rivard would intentionally cause bodily harm to someone who resisted the robbery.

I want to sum this up for you and I will read you the section again, then I will sum up what the Crown must prove. Section 21(2) provides: Where two or more persons form an intention in common to carry out an unlawful purpose and to assist each other therein, and any one of them in carrying out the common purpose commits an offence, each of them who knew or ought to have known that the commission of the offence would be a probable consequence of the carrying out the common purpose is a party to that offence. Now, in this summary, where I speak of the Crown proving something or satisfying you, I mean, as I have throughout this charge, proof by the Crown beyond a reasonable doubt.

In order for you to find O'Leary guilty of murder as a party to the offence within the provisions of Section 21(2) of the Criminal Code, the Crown must prove that O'Leary and Rivard formed an intention in common to rob the Pop Shoppe and to assist each other therein. The Crown must satisfy you that O'Leary was not compelled by threats of death or grievous bodily harm to join in such common intention.

If you find that there was a common intention between O'Leary and Rivard to rob the Pop Shoppe and that O'Leary was not compelled to join in the common plan, the Crown must satisfy you that O'Leary did not abandon the common plan prior to the killing of Schulman. The Crown must also prove that it was a probable consequence of the carrying out of the robbery that Rivard for the purpose of facilitating the commission of the robbery would intentionally cause bodily harm to someone who resisted the robbery.

If you are satisfied on all those points, the Crown must prove that O'Leary knew or ought to have known that the causing of bodily harm by Rivard to someone who resisted the robbery was the probable consequence of the carrying out of the common intention. If the Crown has proved those matters beyond a reasonable doubt, you will find O'Leary guilty of murder as charged, and even though he was not the person who killed John Schulman, and even though he was outside the premises at the time that the killing took place. If the Crown has not met that onus, you must--I emphasize "you must"--you must find O'Leary not guilty.

There are only two verdicts in this case: (1) guilty of murder as charged, or (2) not guilty.

Your Duties in the Jury Room

This is the end of my charge to you, and I want now to deal with your duties as jurors in the jury room. When you go back to your jury room, it is your duty to consult with one another and to deliberate with a view to arriving at a just verdict. Do not take a dogmatic position; keep an open mind, listen in a calm and impartial manner to what is said by your fellow jurors and put your own views forward in the same way.

Since this is a criminal trial, you must be unanimous in your verdict. In other words, it is necessary that each and all of you agree on any verdict that you see fit to return. It is the right of a jury to disagree, but I know that you will do your best to arrive at an agreement.

As I mentioned to you earlier, I will be discussing with counsel, as soon as you have left, any matters that they would like further instructions on. If I call you back for that purpose, I do not want you to put any special emphasis on what I say at that time.

In considering your verdict, you must not concern yourselves with the consequences of it. That is completely irrelevant to your discussions. In determining the guilt or innocence of the accused, the subject of penalty or punishment should not be discussed or considered by you.

If there is anything in the charge about which you are not clear, if your foreman would come back and tell me, I will do my best to clear that up for you.

At the beginning of this case you took an oath to well and truly try this charge and to render a true verdict. If you honour that oath, you will have performed your duty.

You may now retire and consider your verdict.

Following are transcripts of additions to the judge's charge for the experimental and comparison groups. These additions were inserted immediately following page 173.

(a) Favourable Polygraph Insert

As stated earlier, you are the sole judges of the credibility of these witnesses, however another element has been introduced into this trial through the admission of the evidence of a polygraph or lie-detector expert. There is precedent for admission of such evidence in Canadian law. I have been satisfied by the evidence that the polygraph test was administered by a sufficiently expert person and was administered under proper conditions. The particular reason I have for admitting this evidence is that the evidence favours the accused. In every trial the accused should be given every advantage and any evidence that may be of benefit to him must not be withheld without very good reason.

Polygraph testing or lie-detection is based on the theory that there is a relationship between lying or truth-telling and emotional state, and further, that there is a detectable relationship between emotional states and bodily states. To simplify, this theory is simply a sophisticated extension of what we know in our own experience: when a person lies, he may feel guilty or anxious about being discovered and this shows up in bodily reactions--his palms may sweat, his mouth may become dry, his heart-rate increases, etc. To detect such bodily changes the polygraph measures heart-rate, blood pressure, respiration rate and sweat gland activity. By measuring such states of bodily arousal during a carefully constructed interview, the polygraph expert can measure changes in arousal when certain critical questions are asked and thus determine whether the person is being truthful or deceptive.

Although such evidence has been allowed for your consideration it is necessary to make some cautionary remarks. The evidence indicates that the polygraph test is approximately 90% accurate in detecting truth and deception. It thus is in error 10% of the time and the preponderance of these errors tend to be what is called "false positive"; that is, when an error is made in the testing a larger percentage of these errors tend to indicate that an actually innocent person is guilty. The opposite, false negatives, also occur though. You must not be overimpressed with the technical nature of this evidence. The test is quite fallible. Also, because this test is fallible it should not be viewed as, by any means, conclusive, but rather as a guide and must be considered in the light of all the other evidence you have heard. Ultimately, however, it is your decision as to what weight you attach to this testimony.

Now it is the considered opinion of the polygraph expert who tested O'Leary that O'Leary is telling the truth when he says he was compelled to participate in the robbery. The defence of course suggests that this points to the innocence of the accused. The Crown suggests that this is clearly a case of the polygraph being in error as the circumstances of the case and the testimony of Rivard contradict this polygraph evidence.

(b) Unfavourable Polygraph Insert

In regard to credibility of testimony, a further element has been introduced into this trial through the admission of the evidence of a polygraph or lie-detector expert. There is precedent for admission of such evidence in Canadian Law. In this case the accused volunteered to undergo such testing prior to the trial and the Crown and the defence agreed to admit the results of the test no matter what the results were--whether the results favoured the accused or not. I have been satisfied by the evidence that the polygraph test was administered under proper conditions by a sufficiently expert person.

Polygraph testing or lie-detection is based on the theory that there is a relationship between lying or truth-telling and emotional state, and further, that there is a detectable relationship between emotional state and bodily states. To simplify, this theory is simply a sophisticated extension of what we know in our own experience: when a person lies, he may feel guilty or anxious about being discovered and this shows up in bodily reactions--his palms may sweat, his mouth may become dry, his heart rate increases, etc. To detect such bodily changes the polygraph measures heart rate, blood pressure, respiration rate and sweat gland activity. By measuring such states of bodily arousal during a carefully constructed interview, the polygraph expert can measure changes in arousal when certain critical questions are asked and thus determine whether the person is being truthful or deceptive.

Although such evidence has been allowed for your consideration it is necessary to make some cautionary remarks. The evidence indicates that the polygraph test is approximately 90% accurate in detecting truth and deception. It is thus in error 10% of the time and the preponderance of such errors tend to be what is called "false positive", that is, when an error is made in the testing, a larger percentage of these errors tend to indicate that an actually innocent person is guilty. The opposite, false negatives, also occur though. You must not be overimpressed with the technical nature of this evidence. The test is quite fallible. Also, because the test is fallible it should not be, by any means, viewed as conclusive but rather as a guide and must be considered in the light of all the other evidence you have heard. Ultimately, however, it is your decision as to what weight you attach to this testimony.

Now it is the considered opinion of the polygraph expert who tested O'Leary that O'Leary is not telling the truth when he says he was compelled to participate in the robbery. The Crown of course suggests that this points to the guilt of the accused. The defence however suggests that this is a clear cut case where the polygraph is in error, where a false positive has been produced; where an actually innocent person has been shown to be deceptive. The defence suggests that the actual sincerity of the accused should not be measured by the results of the test, but rather by his volunteering to undergo the test.

(c) Unfavourable Character Witnesses Insert

In rebuttal to the testimony of Mr. Merton, however, the prosecution called for the testimony of two character witnesses. Character witnesses are sometimes introduced in trials where the accused has testified in order to shed some light on the accused's general reputation in the community and thus his credibility. As a result of his previous shoplifting charge O'Leary was placed on probation for one year and supervised by Mr. Bell, a probation officer, who had frequent contact with O'Leary and had contact with community members and agencies that were familiar with O'Leary. Mr. Bell testified that through these contacts he determined that O'Leary did not have a reputation in the community as a reliable and trustworthy person, further adding that while on probation O'Leary was not co-operative and often impressed him as being evasive in interviews. In addition to this, the prosecution called Mr. Patterson, a neighbourhood associate of the O'Leary family and the principal of the high school O'Leary attended. Mr. Patterson testified that, to his knowledge, O'Leary was not co-operative with his family or at school and had not established a reputation as a reliable or trustworthy person.

The prosecution suggests that while O'Leary's employer considered O'Leary trustworthy, there is conflicting, and the prosecution asserts, stronger evidence that O'Leary has not been considered by reputable witnesses to be trustworthy. This, the prosecution maintains, casts a further shadow on the credibility of O'Leary's testimony. The defence argues that O'Leary was honest in admitting his previous theft charge, that his employer, who had more recent experience with him, considered him trustworthy, and that O'Leary's past unreliability attested to by Mr. Bell and Mr. Patterson, may well be true but has no direct bearing on O'Leary's credibility in this particular instance.

This issue of the credibility of the accused, O'Leary, is of course central to this case and the testimony of these character witnesses is available to assist you in such a determination. You should be advised however that O'Leary's reputation in the community should be taken only as a measure of credibility and not as an indication of a propensity to commit a crime or not.

APPENDIX B

Number _____

Personal Characteristics

Please place a check (✓) beside the appropriate response. In order that this information required be treated anonymously, please do not write your name on this page.

1. Sex:

☒ 1. Male☐ 2. Female

2. Age: _____

3. Language spoken at home:

☐ 1. English☐ 2. French☐ 3. Other (Please specify _____)

4. Marital Status:

☐ 1. Single☐ 2. Married☐ 3. Separated☐ 4. Divorced☐ 5. Widowed

5. Education:

☐ 1. Grade 8 or less☐ 2. Some high school☐ 3. Completed Grade 12 or 13☐ 4. Some college or university☐ 5. Completed university degree (Please specify degree and subject _____)

6. What is (or was) your main occupation?

(Please be as specific as possible. If you are a salesperson give type of product sold. If a civil servant, give job classification.)

7. If you are (or were) married, state your spouse's occupation. Please be as specific as possible.
-

8. What is (or was) your father's main occupation? Please be as specific as possible.
-

9. Have you ever been called to court for possible jury duty?

☐ 1. Yes

☐ 2. No

10. Have you ever actually served on a jury?

☐ 1. Yes

☐ 2. No

11. Have you ever participated in a mock jury experiment before?

☐ 1. Yes

☐ 2. No

Number _____

Pre-Deliberation Questionnaire

1. How realistic did you find the case presentation?

- ☐ 1. Very realistic
- ☐ 2. Fairly realistic
- ☐ 3. Only a little realistic
- ☐ 4. Not at all realistic

2. How well do you think you understand the judge's instructions?

- ☐ 1. Completely
- ☐ 2. Fairly well
- ☐ 3. Only a little
- ☐ 4. Not at all

3. What is your preliminary decision?

- ☐ 1. Guilty
- ☐ 2. Not guilty

4. How sure are you of this decision?

- ☐ 1. Very sure
- ☐ 2. Fairly sure
- ☐ 3. Fairly unsure
- ☐ 4. Very unsure

5. Were you previously familiar with this court case?

- ☐ 1. Yes
- ☐ 2. No

If yes, do you know the actual result?

- ☐ 1. Yes
- ☐ 2. No

Number _____

Post-Deliberation Questionnaire
(Control Group)

1. At this point what do you think the verdict should be?

- ___ 1. Guilty
- ___ 2. Not guilty

2. How sure are you of this decision?

- ___ 1. Very sure
- ___ 2. Fairly sure
- ___ 3. Fairly unsure
- ___ 4. Very unsure

3. Imagine that O'Leary was in fact guilty, that you are the judge and now have to sentence him. What sentence would you choose? (Check one only)

- ___ 1. Twenty-five years imprisonment
- ___ 2. Fifteen years imprisonment
- ___ 3. Ten years imprisonment
- ___ 4. Five years imprisonment
- ___ 5. Two years of less imprisonment
- ___ 6. No imprisonment (any combination of fines, probation, community treatment)

Number _____

Post-Deliberation Questionnaire
(Experimental Groups)

1. At this point what do you think the verdict should be?
 - ____ 1. Guilty
 - ____ 2. Not guilty
2. How sure are you of this decision?
 - ____ 1. Very sure
 - ____ 2. Fairly sure
 - ____ 3. Fairly unsure
 - ____ 4. Very unsure
3. How much confidence do you have in polygraph test results?
 - ____ 1. Complete confidence
 - ____ 2. A fair amount of confidence
 - ____ 3. Only a little confidence
 - ____ 4. No confidence
4. How do you rate the significance of the polygraph expert's testimony as compared to the other evidence given?
 - ____ 1. More significant
 - ____ 2. Equally significant
 - ____ 3. Less significant
 - ____ 4. Insignificant
5. Polygraph evidence was a deciding factor in this case for me.
 - ____ 1. Agree
 - ____ 2. Uncertain
 - ____ 3. Disagree

6. How familiar were you with the polygraph before coming here?

- ☐ 1. I've read or heard scientific accounts on the subject
- ☐ 2. I was only familiar with it through the popular media (e.g. T.V., crime dramas, newspaper stories)
- ☐ 3. I had never heard of it

7. If the polygraph expert had testified that O'Leary was (lying, telling the truth) it would have: (check one only)

- ☐ 1. Changed my decision from guilty to not guilty
- ☐ 2. Changed my decision from not guilty to guilty
- ☐ 3. Had no effect on my decision
- ☐ 4. Not changed my decision, but made it more certain
- ☐ 5. Not changed my decision, but made it less certain

8. Imagine that O'Leary was in fact guilty, that you are the judge and now have to sentence him. What sentence would you choose? (Check one only)

- ☐ 1. Twenty-five years imprisonment
- ☐ 2. Fifteen years imprisonment
- ☐ 3. Ten years imprisonment
- ☐ 4. Five years imprisonment
- ☐ 5. Two years or less imprisonment
- ☐ 6. No imprisonment (any combination of fine, probation, community treatment)

Number _____

Post-Deliberation Questionnaire
(Comparison Group)

1. At this point what do you think the verdict should be?
 - ___ 1. Guilty
 - ___ 2. Not guilty
2. How sure are you of this decision?
 - ___ 1. Very sure
 - ___ 2. Fairly sure
 - ___ 3. Fairly unsure
 - ___ 4. Very unsure
3. How much confidence do you have in character witness testimony?
 - ___ 1. Complete confidence
 - ___ 2. A fair amount of confidence
 - ___ 3. Only a little confidence
 - ___ 4. No confidence
4. How do you rate the significance of the character witnesses' testimony in this case as compared to the other evidence given?
 - ___ 1. More significant
 - ___ 2. Equally significant
 - ___ 3. Less significant
 - ___ 4. Insignificant
5. Character witness testimony was a deciding factor in this case for me.
 - ___ 1. Agree
 - ___ 2. Uncertain
 - ___ 3. Disagree

6. If the character witnesses had testified that O'Leary had a (good, bad) reputation in the community, it would have: (check one only)

- ☐ 1. Changed my decision from guilty to not guilty
- ☐ 2. Changed my decision from not guilty to guilty
- ☐ 3. Had no effect on my decision
- ☐ 4. Not changed my decision, but made it more certain
- ☐ 5. Not changed my decision, but made it less certain

7. Imagine that O'Leary was in fact guilty, that you are the judge and now have to sentence him. What sentence would you choose? (Check one only)

- ☐ 1. Twenty-five years imprisonment
- ☐ 2. Fifteen years imprisonment
- ☐ 3. Ten years imprisonment
- ☐ 4. Five years imprisonment
- ☐ 5. Two years of less imprisonment
- ☐ 6. No imprisonment (any combination of fine, probation, community treatment)

Number _____

Attitudes Questionnaire

Please read the statements below and indicate whether you agree or disagree with the statement by placing the appropriate number beside the statement according to the following choices:

1. Strongly agree
2. Agree
3. Uncertain
4. Disagree
5. Strongly disagree

(The polygraph referred to in the statements refers to what is commonly known as a "lie-detector". It is a machine which measures heart-rate, blood pressure, breathing rate and sweat gland activity with a view to determining whether someone is lying or telling the truth when he answers questions.)

- ____ 1. Defence lawyers cannot be trusted; they'll use any trick possible to get their client off.
- ____ 2. Polygraph tests cannot be relied upon because they are quite inaccurate.
- ____ 3. A real con can beat a polygraph test.
- ____ 4. Anyone who would volunteer to take a polygraph test must really be telling the truth.
- ____ 5. Evidence that an accused person has a good or poor reputation in the community, that he is or is not reliable and trustworthy, makes him a more believable witness and is a better test of his credibility than the polygraph.
- ____ 6. A polygraph test can accurately determine whether a person is telling the truth.
- ____ 7. Anyone who needs to resort to taking a polygraph test to defend himself should be viewed suspiciously.
- ____ 8. Prosecutors cannot be trusted, they'll use every trick possible to convict a person.
- ____ 9. A polygraph test is conclusive proof that a person is innocent or guilty.

- ___ 10. Evidence that a person does not have a good reputation in the community, that he is not reliable or trustworthy, makes him a less believable witness.
- ___ 11. A polygraph test can accurately determine whether a person is lying.
- ___ 12. Progress in science is man's best hope for survival.
- ___ 13. Experts tell you one thing one day and a different thing the next, their opinions cannot be trusted.
- ___ 14. If a person has a good reputation in the community, if it is known that he is reliable and trustworthy, it can be inferred that he is less likely to commit a criminal offence.

APPENDIX C

Table 1A: SIGNIFICANCE OF DIFFERENCES IN SOCIAL CHARACTERISTICS BETWEEN CONDITIONS

<u>Condition</u>	<u>Number of Cases</u>	<u>Mean</u>	<u>S.D.</u>	<u>T-value</u>	<u>Df.</u>	<u>Probability (two-tailed)</u>
(a) <u>Sex</u>						
Control	43	1.51	0.51	0.12	81	.90
Experimental I	40	1.53	0.51			
Control	43	1.51	0.51	0.35	81	.73
Experimental II	40	1.55	0.50			
Control	43	1.51	0.51	1.83	73	.07
Comparison	32	1.72	0.48			
Experimental I	40	1.53	0.51	0.22	78	.83
Experimental II	40	1.55	0.50			
Experimental I	40	1.53	0.51	1.69	70	.10
Comparison	32	1.72	0.46			
Experimental II	40	1.55	0.50	1.47	70	.15
Comparison	32	1.72	0.46			
(b) <u>Age</u>						
Control	43	34.1	12.8	2.21	81	.03
Experimental I	40	40.7	14.7			
Control	43	34.1	12.8	0.69	81	.49
Experimental II	40	36.0	12.8			
Control	43	34.1	12.8	0.23	73	.81
Comparison	32	34.8	12.1			
Experimental I	40	40.7	14.7	1.54	78	.13
Experimental II	40	36.0	12.8			
Experimental I	40	40.7	14.7	1.85	70	.07
Comparison	32	34.8	12.1			
Experimental II	40	36.0	12.8	0.42	70	.67
Comparison	32	34.8	12.1			

Table 1A: SIGNIFICANCE OF DIFFERENCES IN SOCIAL CHARACTERISTICS BETWEEN CONDITIONS (Cont.)

<u>Condition</u>	<u>Number of Cases</u>	<u>Mean</u>	<u>S.D.</u>	<u>T-value</u>	<u>Df.</u>	<u>Probability (two-tailed)</u>
<u>(c) Education</u>						
Control	43	1.63	0.49	0.44	81	.66
Experimental I	40	1.68	0.48			
Control	43	1.63	0.49	0.49	81	.63
Experimental II	40	1.58	0.50			
Control	43	1.63	0.49	0.25	73	.80
Comparison	32	1.66	0.48			
Experimental I	40	1.68	0.47	0.92	78	.36
Experimental II	40	1.58	0.50			
Experimental I	40	1.68	0.47	0.17	70	.87
Comparison	32	1.66	0.48			
Experimental II	40	1.58	0.50	-0.70	70	.49
Comparison	32	1.66	0.48			
<u>(d) Socioeconomic Status</u>						
Control	43	50.9	14.7	0.49	81	.63
Experimental I	40	52.4	13.9			
Control	43	50.9	14.7	0.75	81	.45
Experimental II	40	53.2	13.1			
Control	43	50.9	14.7	3.96	73	.000
Comparison	32	62.8	9.8			
Experimental I	40	52.4	13.9	0.26	78	.80
Experimental II	40	53.2	13.1			
Experimental I	40	52.4	13.9	3.56	70	.001
Comparison	32	62.8	9.8			
Experimental II	40	53.2	13.1	3.43	70	.001
Comparison	32	62.8	9.8			

Table 2A: CROSSTABULATIONS OF SEX WITH FINAL DECISIONS

<u>Decision</u>	<u>Sex</u>		<u>Total</u>
	<u>Male</u>	<u>Female</u>	
(a) <u>Control Group</u>			
Guilty	7 (33%)	5 (23%)	12 (28%)
Not Guilty	14 (67%)	17 (77%)	31 (72%)
Total	21	22	43
Yule's Q = 0.26			
(b) <u>Experimental Group I</u>			
Guilty	5 (20%)	9 (43%)	14 (35%)
Not Guilty	14 (64%)	12 (57%)	26 (65%)
Total	19	21	40
Yule's Q = -0.35			
(c) <u>Experimental Group II</u>			
Guilty	11 (61%)	14 (64%)	25 (62.5%)
Not Guilty	7 (39%)	8 (36%)	15 (37.5%)
Total	18	22	40
Yule's Q = -0.05			
(d) <u>Comparison Group</u>			
Guilty	2 (22%)	10 (43%)	12 (37.5%)
Not Guilty	7 (78%)	13 (57%)	20 (62.5%)
Total	9	23	32
Yule's Q = -0.46			
(e) <u>Total</u>			
Guilty	25 (37%)	38 (43%)	63 (41%)
Not Guilty	42 (63%)	50 (57%)	92 (59%)
Total	67	88	155
Yule's Q = -0.12			
$\chi^2 (1) = 0.543, p = .46$			

Table 3A: CROSSTABULATIONS OF SOCIOECONOMIC STATUS AND FINAL DECISIONS

<u>Decision</u>	<u>Socioeconomic Status</u>		<u>Total</u>
	<u>Lower (<58)</u>	<u>Higher (58+)</u>	
(a) <u>Control Group</u>			
Guilty	7(29%)	5(26%)	12(28%)
Not Guilty	<u>17(71%)</u>	<u>14(74%)</u>	<u>31(72%)</u>
Total	24	19	43
Yule's Q = 0.07			
(b) <u>Experimental Group I</u>			
Guilty	9(41%)	5(28%)	14(35%)
Not Guilty	<u>13(59%)</u>	<u>13(72%)</u>	<u>26(65%)</u>
Total	22	18	40
Yule's Q = 0.29			
(c) <u>Experimental Group II</u>			
Guilty	12(50%)	13(72%)	25(62.5%)
Not Guilty	<u>10(46%)</u>	<u>5(28%)</u>	<u>15(37.5%)</u>
Total	22	18	40
Yule's Q = -0.37			
(d) <u>Comparison Group</u>			
Guilty	3(50%)	9(35%)	12(37.5%)
Not Guilty	<u>3(50%)</u>	<u>17(65%)</u>	<u>20(62.5%)</u>
Total	6	26	32
Yule's Q = 0.31			
(e) <u>Total</u>			
Guilty	31(42%)	32(40%)	63(41%)
Not Guilty	<u>43(58%)</u>	<u>49(60%)</u>	<u>92(49%)</u>
Total	74	81	155
Yule's Q = 0.05			
$\chi^2(1) = 0.09, p = .76$			

Table 4A: CROSSTABULATIONS OF EDUCATION WITH FINAL DECISIONS

<u>Decision</u>	<u>Education Less Than College</u>	<u>College</u>	<u>Total</u>
(a) <u>Control Group</u>			
Guilty	6(37.5%)	6(22%)	12(28%)
Not Guilty	<u>10(62.5%)</u>	<u>21(78%)</u>	<u>31(72%)</u>
Total	16	27	43
Yule's Q = 0.35			
(b) <u>Experimental Group I</u>			
Guilty	4(31%)	10(37%)	14(35%)
Not Guilty	<u>9(69%)</u>	<u>17(63%)</u>	<u>26(65%)</u>
Total	13	27	40
Yule's Q = -0.14			
(c) <u>Experimental Group II</u>			
Guilty	12(71%)	13(57%)	25(62.5%)
Not Guilty	<u>5(29%)</u>	<u>10(43%)</u>	<u>15(37.5%)</u>
Total	17	23	40
Yule's Q = 0.30			
(d) <u>Comparison Group</u>			
Guilty	8(73%)	4(19%)	12(37.5%)
Not Guilty	<u>3(27%)</u>	<u>17(81%)</u>	<u>20(62.5%)</u>
Total	11	21	32
Yule's Q = 0.84			
(e) <u>Total</u>			
Guilty	30(53%)	33(34%)	63(41%)
Not Guilty	<u>27(47%)</u>	<u>65(66%)</u>	<u>92(59%)</u>
Total	57	98	155

Yule's Q = 0.37

 $\chi^2(1) = 5.37; p = .0205$

Table 5A: CROSSTABULATIONS OF AGE WITH FINAL DECISIONS

<u>Decisions</u>	<u>Age</u>		<u>Total</u>
	<u>Less than 33 years</u>	<u>More than 33 years</u>	
(a) <u>Control Group</u>			
Guilty	4 (17%)	8 (40%)	12 (28%)
Not Guilty	<u>19 (83%)</u>	<u>12 (60%)</u>	<u>31 (72%)</u>
Total	23	20	43
Yule's Q = -0.52			
(b) <u>Experimental Group I</u>			
Guilty	3 (21%)	11 (42%)	14 (35%)
Not Guilty	<u>11 (79%)</u>	<u>15 (58%)</u>	<u>26 (65%)</u>
Total	14	26	40
Yule's Q = -0.46			
(c) <u>Experimental Group II</u>			
Guilty	9 (53%)	16 (70%)	25 (62.5%)
Not Guilty	<u>8 (47%)</u>	<u>7 (30%)</u>	<u>15 (37.5%)</u>
Total	17	23	40
Yule's Q = -0.34			
(d) <u>Comparison Group</u>			
Guilty	6 (37.5%)	6 (37.5%)	12 (37.5%)
Not Guilty	<u>10 (62.5%)</u>	<u>10 (62.5%)</u>	<u>20 (62.5%)</u>
Total	16	16	32
Yule's Q = 0.00			
(e) <u>Total</u>			
Guilty	22 (31%)	41 (48%)	63 (41%)
Not Guilty	<u>48 (69%)</u>	<u>44 (52%)</u>	<u>92 (59%)</u>
Total	70	85	155
Yule's Q = -0.34			
$\chi^2(1) = 4.49, p = .034$			

Table 6A: STEP-WISE MULTIPLE REGRESSION WITH FINAL DECISION AS A DEPENDENT VARIABLE.

<u>Variable</u>	<u>Multiple R</u>	<u>R Square</u>	<u>RSQ Change</u>	<u>Simple R</u>	<u>Beta</u>
Education	0.18611	0.03464	0.03464	0.18611	0.16414
Age	0.24662	0.06082	0.02618	-0.17147	-0.17600
Condition	0.28680	0.08225	0.02144	-0.14597	-0.16079
Socioeconomic Status	0.29533	0.08722	0.00496	0.03200	0.07421
Sex	0.29884	0.08930	0.00208	-0.05919	-0.04611

Table 7A: CROSS-TABULATIONS OF SEX WITH FINAL DECISION CONCURRENCE WITH THE POLYGRAPH

	<u>Sex</u>		<u>Total</u>
	<u>Male</u>	<u>Female</u>	
(a) <u>Experimental I</u>			
Concurrence	14 (74%)	12 (57%)	26
Non-concurrence	<u>5 (26%)</u>	<u>9 (43%)</u>	<u>14</u>
Total	19 (100%)	21 (100%)	40

$$Q = +0.35$$

(b) <u>Experimental II</u>			
Concurrence	11 (61%)	14 (64%)	25
Non-concurrence	<u>7 (39%)</u>	<u>8 (36%)</u>	<u>15</u>
Total	18 (100%)	22 (100%)	40

$$Q = -0.05$$

(c) <u>Total</u>			
Concurrence	25 (68%)	26 (60%)	51
Non-concurrence	<u>12 (32%)</u>	<u>17 (40%)</u>	<u>29</u>
Total	37 (100%)	43 (100%)	80

$$Q = +0.15$$

Table 8A: CROSS-TABULATIONS OF SOCIOECONOMIC STATUS WITH FINAL DECISION
CONCURRENCE WITH THE POLYGRAPH

	<u>SES</u>		<u>Total</u>
	<u>Lower (58)</u>	<u>Higher (58)</u>	
(a) <u>Experimental I</u>			
Concurrence	13 (59%)	13 (72%)	26
Non-concurrence	<u>9 (51%)</u>	<u>5 (28%)</u>	<u>14</u>
Total	22 (100%)	18 (100%)	40

$$Q = -0.29^D$$

(b) Experimental II

Concurrence	12 (54.5%)	13 (72%)	25
Non-concurrence	<u>10 (45.5%)</u>	<u>5 (28%)</u>	<u>15</u>
Total	22 (100%)	18 (100%)	40

$$Q = -0.36$$

(c) Total

Concurrence	25 (57%)	26 (72%)	51
Non-concurrence	<u>19 (43%)</u>	<u>10 (28%)</u>	<u>29</u>
Total	44 (100%)	36 (100%)	80

$$Q = -0.32$$

Table 9A: CROSS-TABULATIONS OF EDUCATION BY FINAL DECISION CONCURRENCE
WITH THE POLYGRAPH

	<u>Education</u>		<u>Total</u>
	<u>Less than College</u>	<u>College</u>	
(a) <u>Experimental I</u>			
Concurrence	9 (65%)	17 (71%)	26
Non-Concurrence	4 (35%)	10 (29%)	14
Total	13 (100%)	27 (100%)	40

$$Q = +0.14$$

(b) <u>Experimental II</u>			
Concurrence	12 (71%)	13 (56.5%)	25
Non-Concurrence	5 (29%)	10 (43.5%)	15
Total	17 (100%)	23 (100%)	40

$$Q = +0.29$$

<u>Total</u>			
Concurrence	21 (70%)	30 (60%)	51
Non-Concurrence	9 (30%)	20 (40%)	29
Total	30 (100%)	50 (100%)	80

$$Q = +0.22$$

Table 10A: CROSS-TABULATIONS OF AGE WITH FINAL DECISION CONCURRENCE WITH THE POLYGRAPH

	<u>Age</u>		<u>Total</u>
	<u>Less than 33 years</u>	<u>More than 33 years</u>	
(a) <u>Experimental I</u>			
Concurrence	11 (79%)	15 (58%)	26
Non-Concurrence	<u>3 (21%)</u>	<u>11 (42%)</u>	<u>14</u>
Total	14 (100%)	26 (100%)	40

$$Q = +0.46$$

(b) Experimental II

Concurrence	9 (63%)	16 (70%)	25
Non-Concurrence	<u>8 (47%)</u>	<u>7 (30%)</u>	<u>15</u>
Total	17 (100%)	23 (100%)	40

$$Q = -0.34$$

Total

Concurrence	20 (64.5%)	31 (63%)	51
Non-Concurrence	<u>11 (35.5%)</u>	<u>18 (37%)</u>	<u>29</u>
Total	31 (100%)	49 (100%)	80

$$Q = +0.03$$

Table 11A: DECISIONS RENDERED IN MARKWART AND LYNCH'S (1979) STUDY*

<u>Evidence</u>	<u>Pre-Deliberation Decisions</u>		<u>Final Decisions</u>	
	<u>Guilty</u>	<u>Not Guilty</u>	<u>Guilty</u>	<u>Not Guilty</u>
No Polygraph				
Jury 1	3	7	2	8
Jury 2	8	4	0	12
Jury 3	4	5	0	9
Jury 4	<u>4</u>	<u>7</u>	<u>3</u>	<u>8</u>
Total	19 (45%)	23 (55%)	5 (12%)	37 (88%)
Favourable Polygraph				
Jury 1	5	3	7	1
Jury 2	1	8	0	9
Jury 3	5	5	6	4
Jury 4	<u>4</u>	<u>8</u>	<u>3</u>	<u>9</u>
Total	15 (38%)	24 (62%)	16 (41%)	23 (59%)
Unfavourable Polygraph				
Jury 1	6	3	6	3
Jury 2	7	1	8	0
Jury 3	8	4	7	5
Jury 4	<u>7</u>	<u>5</u>	<u>6</u>	<u>6</u>
Total	28 (68%)	13 (32%)	27 (66%)	14 (34%)

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ABSTRACT

One primary argument against admitting polygraph -- or "lie detector" -- results into criminal court evidence is the fear that juries will be so impressed by the scientific value of this evidence that it would become the sole or primary determinant of the eventual outcome; thus the jury system would be usurped and replaced by a "trial by polygraph". To assess the merits of this argument, a simulated jury experiment was designed to measure the impact of polygraph evidence on jury decision making. This involved having fifteen deliberating juries, comprised of community volunteers, deciding four criminal trial cases: a control case which was derived from the evidence of an actual case; two experimental cases which were the same as the control case with the exception that polygraph evidence that was either favourable or unfavourable to the accused's case was added; and a comparison case which again was the same as the control but has character witness testimony added.

Results indicated that the favourable polygraph evidence had no statistically significant impact on jurors' decisions when compared to the control decisions, but unfavourable polygraph evidence, while not producing automatic decision concurrence with the polygraph results, did produce a statistically significant greater number of guilty decisions when compared to both the control case decisions and the decisions of the unfavourable character witness testimony case. Further, post-test questionnaires indicated the polygraph was not perceived as being very accurate by most jurors; the polygraph evidence was not perceived as being

very influential in most jurors' decision; and some jurors expressed cynical attitudes about the defendant's involvement in submitting to the polygraph test, this possibly assisting in explaining why favourable polygraph evidence had no impact on decisions while unfavourable polygraph evidence did.

It is concluded that the polygraph evidence did not unduly influence the decisions of these jurors, but that polygraph evidence unfavourable to the accused may have sufficient influence to change the outcome of a jury trial, and that jurors apparently have difficulty properly weighing the merits of this type of evidence.