

EXPERIMENTAL PSYCHOLOGY AND LAW  
Psych 703 Fall 2004 Thurs 2-4:30 North Hall  
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Course Objective: a complete, submittable experimental research proposal for NSF/NIH

RL= Ries, J.B. & Leukefeld, C. G. *Applying for Research Funding*. Thousand Oaks, CA: Sage.

LSS= Locke, L. F., Spiduso, W. W. & Silverman, S. J. *Proposals that Work*. Thousand Oaks, CA: Sage.

Weekly: 1. Readings plus any assignment specified  
2. Email one-page [300 word] commentary on readings/draft proposals to everyone (rotate among proposals, commenting on three per week)—do this for 11 of 14 classroom weeks -- distribute by 7pm night before class.

Other submissions: everyone submits other written work on weeks 2-14

Reading/Writing Assignments:

- 9/2 Overview and orchestration of course
- 9/9 RL: 1-2 (25 pp), LSS 1, 3, 9 (65pp)  
Penrod NSF Proposal to study [Reducing Eyewitness Identification Errors](#): Procedural Strategies [Abstract](#)  
Identify the area in which you want to write a proposal--secure initial reading lists
- 9/16 No class
- 9/23 RL: 3 (19pp), LSS: 4 (30pp)  
Read three articles from initial reading lists  
Garcia and Penrod NSF proposal to study [Eyewitness Guessing](#) [Abstract](#)
- 9/30 RL: 4, 7, 10 (47pp), LSS: 8 (21pp)  
Read three more articles from initial reading lists  
Submit first lit search (Ingenta/PSYCHINFO/Medline)  
Groscup NSF proposal to study: [Daubert in the Juryroom](#): Juror Assessments of Scientific Validity and Reliability  
[Abstract](#)
- 10/7 RL: 11-13 (36pp), LSS: 6 (11pp)  
Read a lot more articles from reading/search lists  
Identify 15-20 core studies—submit the list
- 10/14 RL: 14-16 (39pp) submit brief reviews of your 15-20 core studies
- 10/21 5-page (single-spaced) reviews of literature--identification of researchable questions
- 10/28 Draft 10-page literature reviews
- 11/4 Polished 10-page reviews & outline of half of studies, design Halloween costume
- 11/11 More polished review & outline of second half of studies
- 11/18 15-page draft proposal with review & draft of all proposed studies

11/25 **NO CLASS** Holiday

12/2 More polished text of full proposals due (15 pp)

12/9 Polished proposals and supporting documents and budgets completed—proposal complete

**(abstracts for sample proposals are below)**

O'Neil and Penrod NSF Proposal to study Jury Assessments of [Cost-Benefit Analysis](#) in Civil Cases (funded) [Abstract](#)

Bornstein and Penrod NSF Proposal to Conduct an [Eyewitness Meta-Analysis](#) (funded) [Abstract](#)

Groscup and Penrod NSF Proposal to study the effect of the [Kumho](#) decision (funded) [Abstract](#)

NSF Proposal to Improve Jury Comprehension of [Death Penalty Instructions](#) (under revision) [Abstract](#)

Gottdiener PHS proposal 2004 -- pwd: grant [Therapy, Drugs, PTSD](#)

**Eyewitness Guessing and Accuracy: Subjective Experience and Objective Determinants**

Eyewitness researchers have long been interested in factors that influence identification accuracy; however, experiential nature of witness decisions has gone largely unstudied. Cognitive researchers on the other hand are only investigating different ways to retrieve information from memory but also how different states of subjective awareness of the processes used to retrieve memories might be associated with those retrievals. The Remember/Know/Guess (RKG) paradigm in particular has provided insight into the retrieval experience. We argue that judgments based on Knowing may be the source of the vast majority of eyewitness errors and that Guess responses are critical insofar as they serve to purify Know responses and reduce mistaken identifications.

The proposed studies look at witness guessing from an objective and a subjective perspective. We seek to understand whether and to what extent different forms of guessing are (differentially) influenced by substantive and procedural manipulations explored in prior eyewitness research and the extent to which RKG judgments by themselves and in combination with other subjective and objective measures, can predict accuracy and account for the effects of substantive and procedural manipulations.

**Reducing Eyewitness Identification Errors: Procedural Strategies**

Eyewitness researchers have recently started examining the impact on eyewitness accuracy of a variety of alternative lineup and photoarray procedures which might be employed by the police. One major procedural innovation is the sequential array. Instead of being presented all at one time—the traditional simultaneous method—the sequential method presents lineup/array members one at a time and requires witnesses to identify or reject each individual. It is clear that sequential procedures can appreciably reduce mistaken identifications (at the cost of some lost correct identifications) and there are indications that the reason for the improvement is a change in the decisionmaking strategies employed by witnesses (a shift from a relative process in which simultaneous faces are compared to one another) to an absolute process in which array members are compared with memory for the perpetrator. However, existing research on these processes simply does not resolve the theoretical question of whether the salutary effects of sequential procedures are realized in part or wholly through simple shifts in decision criteria produced by changes in procedure or are exclusively the result of actual (and/or reported) changes in decision strategies.

Because existing research does not answer the process question authoritatively, we do not know answers to the following questions—the targets of the proposed research:

1. Effects of Instructions. Can the substantial reductions in false identifications (but smaller loss in correct identifications) achieved with sequential procedures (which draw objections from practitioners—particularly prosecutors) be achieved with simple caution-inducing or decisionmaking instructions?
2. Lineup Size. How much does lineup size matter with respect, particularly, to sequential procedures. Can lineup instructions offset any size effects?

3. Knowledge of Lineup Size. Does knowledge of the number of faces to be viewed sequentially affect performance and are such effects reduced with larger arrays or alternative instructions?
4. Position Effects. Are there (substantial) position effects in simultaneous procedures that might weigh against the procedure—or weigh in favor of placing suspects relatively early in a sequence?
5. Reviewing. How much do stopping rules—whether witnesses are permitted to "go back" and reexamine faces if they do not (or do) make a selection on the first pass affect performance?
6. Multiple Choices. Should witnesses should be permitted to make multiple choices from sequential lineups? Do instructions affect the patterns of multiple choices?
7. Blindness. Do multiple selection or re-examination procedures make sequential lineups even more vulnerable to non-blind presentation biases (possible suggestion by police conducting the procedures)? Do instructions that the presenting officer does not know who the suspect is reduce non-blind effects?

### **Daubert in the Juryroom: Juror Assessments of Scientific Validity and Reliability**

Expert testimony has been a special problem in the law, and recent Supreme Court decisions have emphasized the trial court judge's role as the gatekeeper of scientific evidence and have required them to evaluate the reliability of expert evidence to determine its admissibility. If admitted, jurors have the responsibility of evaluating the influence that evidence will have in their verdict decisions. Reliability could be the means by which jurors determine if and how they will be influenced by expert testimony. Concerns have been raised about whether or not judges are capable of appropriately evaluating the reliability of complex expert testimony. Even if judges are able to distinguish reliable from unreliable evidence, reliability could be an issue argued by the attorneys. Therefore, reliability could be an issue for jurors to evaluate when determining the weight to give to expert testimony. Jurors also may be unable to distinguish between reliable and unreliable testimony. Unreliable testimony might not only be admitted, but it might be heavily relied upon in jurors' verdict decision making. Recognizing this potential problem, the Court suggested several legal safeguards to prevent jurors from relying on unreliable experts. These safeguards included cross-examination, jury instructions, and opposing expert testimony. The purpose of the proposed studies is to determine if jurors are sensitive to reliability, to examine the effectiveness of each of the Court's suggested safeguards, to maximize the increase in juror sensitivity to scientific reliability due to the use of these safeguards, and to provide additional information about jurors' information processing. This will be accomplished by manipulating various indicia of reliability for psychological expert testimony and by manipulating the use and type of the safeguards to determine if and to what degree their presence increases juror sensitivity to evidentiary reliability. In these studies, the type of cross-examination, jury instructions, and opposing expert testimony will be manipulated such that these safeguards will: 1. not be present, or 2. a standard version not discussing reliability will be present, or 3. a version discussing the *Daubert* factors will be present, or 4. a version discussing psychological research validity will be present, or 5. some combination of these will be present. The reliability of the testimony will be manipulated by whether or not the *Daubert* factors are met by the testimony and whether or not several indicia of reliability in psychological research are met by the testimony. Hypotheses are advanced about the interplay of safeguards and evidence reliability in light of theories about the processes underlying juror decision making based on the elaboration likelihood model and on the use of heuristics. To test these theories, complexity will be manipulated to determine when information about the reliability of expert testimony is processed peripherally or centrally. The intellectual merit of the proposal is in its potential to answer these crucial questions about jurors' abilities and about the effectiveness of the safeguards proposed by the Court.

### **Risk Management and Juries: How Jurors React to Cost-Benefit Analyses**

When making a decision whether a company was negligent and therefore liable for harm to the plaintiff, juries are frequently have investigated the workings of the civil jury system, and frequently claim that its purposes are not being fulfilled. However, moderating and mediating variables, and jurors' attitudes and perceptions into a comprehensive model of civil jury decision making.

Also, the law of negligence (and to a lesser degree the law of product liability) has integrated cost-benefit analyses into the perform such analyses has not received much attention. The second goal of this proposal is to investigate variables associated with such cases as a background for building a comprehensive model of civil jury decision making. Such cases include elements defendant's behavior in face of such a risk, jurors' attitudes and perceptions of the case, and jurors' outrage. This project will investigate the factors that contribute to such cases, and how that outrage might be mitigated.

### **Eyewitness Meta-Analysis**

A growing body of evidence indicates that one of the principal sources of erroneous convictions is mistaken eyewitness identifications. At the same time, a growing body of empirical research by psychologists is providing better insights into the factors that can contribute to mistaken identifications.

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With increasing frequency, psychologists are called upon to provide courtroom testimony about those factors, but such expert testimony is often criticized as unreliable. The questions of reliability and generalization of findings are ultimately empirical questions. This study will use a meta-analysis of (approximately 500) existing studies of face recognition, in both the eyewitness and laboratory research paradigms, to examine the strength and reliability of research findings concerning a large number of factors thought to influence identification accuracy and to examine the relationships among research methods and the magnitude of effects produced by manipulations of substantive variables. Factors to be addressed include stable (e.g., sex, race) and malleable characteristics (e.g., stress, disguise) of both participants and targets, as well as situational (e.g., exposure duration) and procedural (e.g., lineup presentation) variables.

The meta-analysis will use the latest available techniques to cumulate findings across studies, with careful attention given to the different types of study characteristics and independent variables (and their operationalization) employed in the research. Basic goals are to provide a thorough overview of the state of existing research, including chronological trends; to identify research and theoretical domains where findings are on the strongest and weakest footings; and most importantly, to test a series of hypotheses about methodological and substantive factors that enhance or limit the generalizability and theoretical implications of research results. The database and analytic results will be made available to other researchers for replication and policy usage.

### **Kumho**

A Continuing Empirical Analysis of the Admissibility of Expert Testimony: Investigating the Effects of *Kumho Tire v. Carmichael*

The Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals* (1993) regarding the admissibility of scientific testimony resulted in a barrage of commentary in response to questions raised by the opinion. These questions addressed in the commentaries included whether the decision would result in greater or lesser admission of scientific evidence, whether lower courts would afford attention to the four criteria for admissibility detailed in *Daubert*, the degree to which various Federal Rules of Evidence would influence admissibility decisions, the appellate standard of review to be applied to admissibility decisions, and the appropriate standard of admissibility to be applied to non-scientific evidence. In *General Electric Co. v. Joiner* (1997), the Court answered the question of the appropriate level of appellate review to be utilized. The question of the appropriate standard to determine the admissibility of non-scientific evidence remained open until the Court's recent decision in *Kumho Tire Co. v. Carmichael* (1999), which dictated that a reliability analysis must be performed by the trial judge on all types of expert testimony, including technical and specialized testimony. However, this decision may have raised more questions than it answered.

Many questions raised by the *Daubert* opinion, including those listed above, have been addressed by our previous empirical research on the effects of that decision conducted with the support of the National Science Foundation. It is proposed that this research be extended to include an investigation of the effects of the *Kumho* decision. Among the questions to be answered are: 1) will *Kumho* lead to an increased or a decreased exclusion of non-scientific expert testimony? 2) how will the courts distinguish between testimony which is scientific and nonscientific? 3) which domains of expert testimony will be most affected by the decision? 4) will the effects of the decision be felt more strongly by the criminal or by the civil justice systems? 5) what types of parties will experience the most difficulty offering expert testimony? 6) will the four *Daubert* factors continue to have an impact on the admissibility of expert testimony? Will they only affect testimony characterized as "scientific" or will courts follow *Kumho's* advice and apply the criteria to non-scientific testimony as well? 7) will trial judges increased gatekeeping responsibilities be reflected in their opinions? Will this expanded duty result in a greater use of Rule 104? Therefore, empirical investigation of these effects would inform the legal community and the community of experts, both scientific and non-scientific, on the aftermath of *Kumho*.

### **Beyond Pattern Instruction Revision: Teaching Jurors to Apply and Follow the Law in Death Penalty Cases**

Jury instructions are one of the primary vehicles through which the law is communicated to jurors who must decide the appropriate sentence in a death penalty case. Creating death penalty jury instructions that are understandable to jurors and that consistently express the law has challenged courts, legislatures, and researchers. Research suggests that instruction comprehension is poor, often suggesting that jurors understand only around 50% of the instructions. Some researchers have recommended psycholinguistic revision of the instructions to make them more understandable. Courts, however, have not tended to support instruction modification, suggesting that such changes may sacrifice legal accuracy. And, researchers have noted that even with psycholinguistic revision, sometimes comprehension rates remain

accuracy. And, researchers have noted that even with psycholinguistic revision, sometimes comprehension rates remain poor. This has led some to suggest that juror's preconceptions may prevent them from understanding the law and that there might be a level beyond which comprehension cannot be improved. Applying teaching and learning research to the jury instruction process may offer a new avenue for improving juror instruction comprehension and understanding the processes underlying that comprehension. Over the past 30 years, teaching and instruction research has offered new insights about how individuals learn and how learning situations can best be designed to facilitate maximum learning. This literature focuses on the importance of actively engaging the learner in the to-be-learned activities, the importance of the learner generating and monitoring their learning process as a means of increasing competence and mastery, the importance of accounting for the prior conceptions and knowledge base of the learner, and the benefits focused and relevant technology lend to the learning process. It is hypothesized that instructional methods that attempt to improve comprehension while integrating juror's prior knowledge as part of the instruction process and actively engaging the juror in the instruction process will result in gains in instruction comprehension to a greater degree than typically shown through psycholinguistic revision attempts, without sacrificing the legal accuracy of the instructions.

This proposal consists of five main studies and a capstone study to explore the application of teaching and learning methods to the death penalty jury instruction process. Each of the five main studies will examine one instructions method variable (these are: an overview of the instruction process, cued reading, deliberate practice, expert coaching, practice providing a sentence, and an interactive deliberation session) and evidentiary manipulations. The final experiment will be a capstone study including the most effective instructional methods variables drawing from the five main studies, evidentiary manipulations, and a jury deliberation manipulation. The studies will include a battery of dependent variables designed to thoroughly assess instruction comprehension. The project data will be analyzed through a theory-grounded path/structural equation model that will contain case features, juror attitudes, and mediating variables.

It is anticipated that this project will lead to a better understanding of processes that improve and impede jury instruction comprehension. Ultimately, understanding these processes can improve the jury instruction system and lead to more consistent death penalty sentencing, and may have broad applications to instructing juries in other contexts. The instructional methodologies developed may lead to advances in the pedagogical literature by providing information about how to facilitate the transfer of learning from textual instruction materials. This project will also add to the growing literature on technologically assisted educational programs. Application of the results of these studies may lead to increased confidence in the efficacy of the legal system in the United States, and ultimately, the development of a more sophisticated jury pool.