EFFECTS OF ENVIRONMENT ON CHILDREN'S TESTIMONY AND PERCEIVED STRESS

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Effects of Environment on Children's Testimony and Perceived Stress

With mandatory reporting of child abuse, children are becoming involved more frequently in the judicial system, a system that is often unresponsive to the needs and limitations of young children (Whitcomb, 1992). To accommodate child witnesses, modifications of the courtroom environment have been proposed, such as testimony via closed circuit television (Maryland v. Craig, 1990) and closing the courtroom to spectators (Globe Newspaper Co. v. Superior Court, 1982). Such legal reforms are thought to facilitate reliable testimony and reduce system-related stress. However, there is little empirical research to guide reform efforts. In response to this need, we conducted two studies to explore the effect of courtroom environment on the quality of evidence children offer and the level of system-induced stress that they experience.

Until recently, guidance from traditional investigations of children's memory has been limited because researchers strove to study memory in its purest form, uninfluenced by emotional and contextual factors. Recently, researchers have begun to investigate the notion that context is not simply the place in which remembering occurs, but it is a constituent of memory itself (Ceci, Bronfenbrenner & Baker, 1988). The physical and psychological setting in which remembering transpires influences ability to recall. For example, researchers found that children's uses of prospective memory strategies were far less efficient in an unfamiliar laboratory than in the child's home. They speculated that the laboratory setting induced anxiety incompatible with the deployment of the memory strategy under study. Studies such as these call into question the ecological validity of previous results for generalization to cases of child abuse. Also, these data imply that children's competence to testify will be, in part, a function of the setting in which questioning occurs.

There has been much speculation that stress is a likely mediator of memory performance

in the forensic context. High levels of stress are thought to decrease attention, to reduce motivation, or to interfere with efficient memory searches (Dent, 1977; Goodman, Hirschman, Hepps & Rudy, 1991; Saywitz & Snyder, in press). Most studies have focused on children's memories for stressful events rather than the effects of stressful recall environments. However, different mental processes may be operative when the locus of stress is the retrieval context as opposed to the event to be remembered (Davies & Thomson, 1988).

There are few ecologically valid studies germane to this issue. Those that exist suggest that children's ability to identify an unfamiliar adult may be impaired by characteristics of the physical and social setting (Dent, 1977; Peters, 1991, Experiment 4). These studies begin to suggest that children may be unable to testify at their highest level of competence in anxiety-provoking, unfamiliar settings, such as the courtroom (Hill & Hill, 1987). On the other hand, free recall and responses to questions about past autobiographical events may be robust in the face of transient emotional states, and little differences would be noted as a function of setting. This may be especially true of children's responses to direct questions, which offer ample recall cues. In contrast, the formality of the courtroom is assumed to promote testimony by underscoring the seriousness of the task. This could result in improved performance by children.

Today we will present the results of two studies conducted to examine the premise that the courtroom environment affects children's ability to testify, their perceptions of the stress of testifying and in the latter study, physiological correlates of anxiety during testimony as well. In both studies, eight to ten year olds participated in a classroom activity and two weeks later

were questioned regarding their memory for the activity. Half were questioned in a courtroom and half were questioned in an informal setting. Memory performance, state anxiety, perceptions of court-related stress, and heartrate patterns were compared across interview conditions.

EXPERIMENT I

Method

In the first study, thirty-four 8 to 10 year old children recruited from local public elementary schools in middle to upper middle class suburban areas in Southern California participated in a staged event involving body-touch play between an unfamiliar adult male and small groups of children. During the staged event, children were taught about the parts and functions of the human body. The event included activities that involved touch, such as, measurement of heart rate, visual inspection of the esophagus, and listening to the lungs, so that later questioning of the children could resemble questions typically asked of children suspected of being abused. For example, "Where did he touch you?" or "Did he put anything in your mouth?".

Two weeks after participating in the staged event, all children were individually interviewed about the event. Children, matched on age, sex and SES, were assigned to one of two interview conditions. Half the children were questioned in a simulated trial environment in a mock courtroom (court interview). The other half were interviewed in an empty unfamiliar classroom at their schools (school interview).

Children in the school interview condition were interviewed in an empty classroom

where they were seated across a table from the interviewer. Children in the court interview condition were interviewed in a courtroom at the Law School of a major University, which simulated a trial environment, including the use of actors for the judge, attorney, bailiff, and jurors/spectators. The children were aware, however, that they were participating in an experiment, not an actual trial. Prior to questioning, the bailiff walked the child to the witness stand where each child took an oath to tell the truth.

A structured interview was comprised of a free recall task followed by 53 specific questions that required short answers; six of which were misleading, such as, "He said he was a doctor, didn't he?" were administered.

At the conclusion of the interview, data were collected regarding children's perceptions of the level of stress associated with various courtroom experiences (e.g., talking in front of strangers, not understanding the questions). For the purpose of this experiment, the "What Do You Think?" Questionnaire (Byrnes & Yamamoto, 1985) was modified by embedding ten court-related experiences into the original twenty general life experiences, resulting in a thirty item scale. All children rated each experience on a 5-point scale, with 5 being the most stressful. Stressful was defined as something that "might be upsetting" or "might bother you." Variously grimacing human faces were used instead of numbers to represent ratings from not stressful to very very stressful. Each experience was read aloud, one at a time, by an interviewer, and children were instructed to put an X on the corresponding face to reflect how stressful they perceived the event to be.

At the school, the modified version of the "What Do You Think?" Questionnaire was

administered immediately after the free recall and specific questions. At the courtroom, children were escorted to an empty room adjacent to the courtroom, immediately after questioning, for administration of the last measure.

Results[1]

Eyewitness Memory

Table 1 presents the means, standard deviations and t statistics for memory measures by interview condition. Analyses revealed a significant difference between interview conditions on the number of items recalled correctly in free recall, with children interviewed at school recalling significantly more correct items than children interviewed at court. The number of items recalled incorrectly did not vary significantly as a function of interview condition.

On the specific questions, significant differences were found between interview conditions on number of incorrect responses, with the children interviewed at court producing more errors. Also, the number of incorrect responses to misleading questions by children in these two interview conditions differed significantly, with children who were

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[1]To code the free recall data, a 105 item checklist of the participants, objects, and actions involved in the staged event was generated from the script of the staged event by the authors. Children's free recall responses were scored as correct or incorrect based upon the co-occurrence of recall with individual items on the verified checklist. Children's responses to direct questions were scored as correct, incorrect, or "don't know/don't remember."

Children's responses on the modified "What Do You Think?" Questionnaire were coded as follows: 1 = not stressful, not upsetting; 2 = a little stressful/upsetting; 3 = more than a little stressful/upsetting, but not a whole lot; 4 = very stressful/upsetting; and 5 = very very stressful/upsetting.

interviewed at school making fewer errors than children who were interviewed at court.

Perceptions of Courtroom Anxiety

Table 2 displays the mean ratings of children's perceptions of court-related experiences. Two of these, "Crying in court" and "Answering questions in front of a lot of strange adults in court," differed across interview condition. Children interviewed at court perceived these experiences as significantly more stressful than children interviewed at school.

Relationship of Anxiety to Memory Performance

Anxiety and free recall. The Court-Related Stress Scale was created from the court-related items on the "What Do You Think?" questionnaire. Scores on these items were summed. Pearson product-moment correlations revealed a significant negative association between correct free recall and scores on the Court-Related Stress Scale [$r(32) = -.33$, $p = .05$][2]. Thus, the more stressful children perceived these court-related experiences, the fewer correct items they reported in free recall. Small sample size precluded within condition analyses that would clarify our understanding of these data.

In summary, 8-to-10 year olds who were interviewed at court showed less complete free recall than agemates questioned at school. They also made more errors in response to direct questions and acquiesced more frequently to misleading questions than agemates

[2]Additionally, perceived stress for three individual court-related experiences; "going to court" [$r(32) = -.43$, $p = .01$]; "not knowing the answers to questions you are asked in court" [$r(32) = -.36$, $p < .05$]; and "crying in court" [$r(32) = -.43$, $p = .01$] were significantly correlated with correct free recall in the negative direction.

interviewed at school. Children interviewed in the courtroom identified certain court-related experiences as more stressful than peers who were interviewed at their school. Also, children's perceived anxiety was negatively correlated with correct free recall.

Discussion

It could be argued that poorer memory performance by children questioned at court resulted from cues in the school environment that improved the recall of those children interviewed at school (rather than the courtroom context impairing memory) because both the staged event and the interview were conducted on the school campus. It has been suggested that the more cues shared by the encoding and retrieval contexts, the better the recall (Davies & Thomson, 1988; Tulving & Thomson, 1973). However, care was taken to ensure that the interviews were conducted in a different setting than the one in which the staged event occurred (library versus empty classroom), despite the fact that they were both on the school campus. In the second study this concern is addressed. Children in the non-court condition were interviewed in a small room at the Law School instead of at the same campus as the staged event.

An alternate explanation for impaired performance in the courtroom is the notion that the physical-social setting of the courtroom is complex and novel and is therefore distracting to children, drawing their attention away from the memory task at hand. However, this hypothesis does not explain the differential effects of the questioning-context on perceptions of court-related stress nor the correlation between free recall and perceptions of court-related stress.

To explain all of the findings, a more comprehensive model of memory performance is required. Consider the following: A given instance of memory performance is influenced not only by allocation of attentional resources, but also by transient emotional states induced by children's perceptions of the context and their appraisal of their ability to cope with the situation. At a given moment of deliberate remembering, children are involved in a variety of tasks at multiple levels of processing. They make a metacognitive appraisal of the task (e.g. consequences of error, amount of effort required. Then, memory is searched, retrieval strategies are generated and results evaluated. Simultaneously, children experience a feeling state that has the potential to influence attention, effort, motivation, and efficiency of cognitive activity. In this view, transient emotional states, such as anxiety, can be triggered by the children's perceptions of the situation as frightening vis-a-vis their perception of their own ability to succeed in the task and to overcome their fears.

In the present study children questioned at court rated answering questions in front of strangers and crying on the stand as more stressful than children questioned at school. Informal debriefing of children indicated that these items were interpreted as fears of public scrutiny, embarrassment, personal inadequacies, and fears of an inability to cope with overwhelming emotions. These factors suggest that self-image may play a powerful role in creating anxiety that interferes with information processing momentarily by reducing motivation, ability or effort needed to generate and employ retrieval strategies. Further, the negative correlations between free recall and perceived stress in this sample implicate anxiety as a mediator worthy of subsequent study. Thus, in our follow-up study, we employed more

sensitive measures of anxiety, including heartrate monitoring, the Speilberger State Anxiety Inventory for Children (STAIC), and further modification of the "What Do You Think Scale?". Also, the Harter Self Perception and Social Support Scales were added to explore the role of self image.

EXPERIMENT II

The second experiment is currently underway with an increased sample size. At this moment, data are available from 68 of 80 subjects. The children were recruited from the same elementary schools and participated in the same staged event as children in Experiment I. After two weeks, children were randomly assigned to be interviewed in the same courtroom setting as participants in Experiment I, or in a small private room in the Law School.

First, the Harter Self Perception and Social Support Scales were administered in a third room. Then, children were shown either the courtroom or the interview room and told they were going to be interviewed next. They returned to the third room where the STAIC and the modified version of the "What Do You Think?" Questionnaire were then administered.[3] Each child was then escorted into the courtroom/interview room where they were seated in the witness stand/chair. A biotach cardio rate meter with an ear clip was then clipped onto their earlobes to measure continuous heartrate throughout questioning. The heartrate was recorded every second. After the ear clip was attached, free recall instructions and 60 specific questions were administered.

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[3]An additional 7 court experiences were added to the scale used in the first study.

Results

Memory

To analyze the effects of environment on memory performance, two 2 (interview conditio) X 2 (sex) multivariate analyses of variance (MANOVAs) were conducted. In the first, correct free and probed recall were entered as dependent variables; in the second, free recall errors and incorrect responses to questions were entered as dependent measures.

Correct recall. The first MANOVA revealed a significant effect of interview condition, $F(2,63) = 6.79$, $p < .0025$. Univariate tests of correct free recall revealed that children interviewed in the courtroom recalled significantly less correct information than children interviewed in the non-courtroom setting, $F(1,64) = 12.15$, $p < .001$. No other effects reached significance. Table 3 displays mean correct and incorrect memory scores by treatment condition.

Errors. A second MANOVA conducted on errors in free recall and incorrect responses to specific questions failed to show any significant effects. Additionally, further analyses of variance failed to replicate the results of the first experiment that suggested differential performance on misleading questions as a function of interview condition.

In sum, again 8-to-10 year olds who were interviewed at court showed significantly less complete free recall than agemates questioned at school. It is unlikely that this was due to a general memory failure; when asked specific questions providing retrieval cues, the effect of interview setting disappeared. It is more likely that children stored information, but the information was less accessible in the courtroom for free recall purposes than in the non-

court setting. Anxiety may have interfered directly with motivation, ability, or effort required for retrieval, for example, when one's mind goes blank. It was striking to note that 25% of the children questioned in court could not recall the staged event at all on the witness stand in response to free recall instructions, in comparison to only 7.5% of the non-court group showing a similar difficulty. Anecdotally, during free recall, children in the courtroom made comments like "It's really hard to think in here." Such statements were not made in the small room.

Courtroom Anxiety

Two self report and one physiological measure of anxiety were analyzed. These were (1) mean scores on the STAIC, measuring anticipatory state anxiety; (2) mean summary scores on the Court-related Stress Scale, measuring perceptions of the stress of various courtroom experiences; and (3) a heartrate reactivity index, measuring a physiological correlate of anxiety. The reactivity index (a measure of the change from mean baseline heartrate to mean heartrate during questioning) was entered into the analysis to estimate stress reactions during testimony.

Previous studies often find a discrepancy between self report and physiological measures of anxiety (Douglas, Lindsay, & Brooks, 1988; Jay & Elliot, 1986; Winer, 1982; and Abu-Saad & Holzemer, 1981), therefore, the anxiety measures were analyzed independently using three 2 (sex) X 2 (interview condition) ANOVAs. Table 4 displays the means and standard deviations of anxiety scores by interview condition and sex. Analyses of STAIC scores failed to reveal significant differences. Given that the STAIC was

administered prior to questioning, it may be that the anticipatory anxiety generated by this paradigm was not at a sufficiently high level to be detected by this measure. Administration of the STAIC after questioning may capture higher levels of anxiety experienced during testimony, if they exist.

Ratings on the Court-Related Stress Scale revealed a significant effect of sex, but not interview condition, with females rating various court experiences as significantly more stressful than males, $F(1,64) = 5.12$, $p < .05$. Thus, this scale failed to identify specific court-related experiences associated with increased perceptions of stress in the cortroom. This could be due to changes in methodology from one experiment to the next. For example, introduction of heartrate monitoring during testimony may have reduced the ecological validity of the courtroom setting, rendering the experience less realistic, and therefore less threatening. Further examination of the data revealed that children questioned in court in the first experiment rated courtroom experiences as more stressful than children questioned in court in the second study. However, it must be noted that this scale measures perceptions in general, not those specific to the experience in the experiment.

When heartrate reactivity indices were entered into the analysis, significant differences emerged as a function of interview condition, $F(1,64) = 5.23$, $p < .025$). Children interviewed at court demonstrated significantly larger reactivity indices (M = 19.75, SD = 16.06), than children questioned in the small room (M = 11.68, SD = 13.44). Additionally, when the mean standard deviation of heartrate was entered into a similar ANOVA, there was a significant effect of interview condition, $F(1,64) = 6.53$, $p = .0001$.).

Although children's self report of anticipatory state anxiety and their general perceptions of the stress of courtroom experiences were not affected by interview condition, differential heartrate reactivity across interview condition suggests the children in court were experiencing a physiological reaction to the experience of being questioned in court, not found among children questioned in the non-court setting. Such reactivity can be associated with stress and agitation (Beidel, 1988; Matthews, Manuck, & Saab, 1986; Thomas, Lynch, Friedman, Suginohara, Hall, Peterson, 1984; Speilberger, 1975; Simpson, Ruzicka, & Thomas, 1974; and Bautt, Hackett, & Warren, 1966).

Relationship of Anxiety to Memory Performance

Correlational analyses of free and probed recall with anxiety measures failed to demonstrate a significant association. However, we are continuing to analyze individual differences in heartrate patterns and memory to better understand why memory performance was impaired and heartrate patterns were more labile and erratic in the courtroom setting for many children.

Self Perception and Social Support

In exploring the roles of self perception and social support as mediators of the relation between anxiety and memory, Pearson product-moment correlations revealed significant negative correlations in the court interview condition between self perception and state anxiety (STAIC), ($r = -.37$, $p < .05$); social support and state anxiety ($r = -.47$, $p < .01$)); and social support and summed scores on the Court-related Stress Scale ($r = -.43$, $p < .05$). Therefore, the higher children perceived themselves and their social support

network, the less anticipatory anxiety they reported. Also, the stronger they believed their social support network to be, the less stressful they perceived a courtroom to be. Thus, self perception and social support may play a role in decreasing the anxiety associated with courtroom questioning worthy of further study. These relationships were not found in children who did not engage in the court process.

Discussion

These data suggest that a child's ability to provide complete, accurate testimony may be affected by the psychological and physical setting in which the evidence is elicited. Impaired free recall and more reactive heartrate patterns, indicative of a stress response, were associated with the courtroom setting in comparison to a small private room. Thus, the notion that transient emotional states (e.g., anxiety) are responsible for the disruptions in memory performance (e.g., retrieval difficulty in free recall) continues to be worthy of further exploration. The fact that self-report measures of anticipatory anxiety and responses to direct questions did not differ across settings in the second experiment was not wholly unexpected. Discrepancies between physiological data and self-report data are not uncommon in this literature as both children and adults may not admit to feelings they are experiencing if they perceive the feelings to be socially undesirable.

This experimental paradigm did not create the complexities of a real trial nor the feeling states of an actual victim-witness. In actual cases, memory impairment and stress responses may be even greater. It is possible that a certain threshold of anxiety must be reached before responses to questions and self-report are affected. Perhaps, sufficient

anxiety was created to interfere with free recall, but not responses to direct questions that provide ample retrieval cues and are less vulnerable to disruption. Likewise, sufficient anxiety may have been created to interfere with heartrate patterns, but it was not sufficient for the experience of stress to reach conscious awareness and verbal report.

Taken as a whole, these results call for future research regarding the hypothesis that anxiety associated with certain characteristics of the setting may influence the quality of evidence children provide and the level of stress they experience. Furthermore, children's perception of self image and social support are potentially mediating factors to be examined.

Implications for Cases of Suspected Child Abuse

The physical and psycho-social context of the courtroom is presumed to promote a complete and accurate telling of the truth. This may not be the case when the witness is a child. Our findings highlight the need to develop innovative methods for preparing child witnesses and for modifying standard courtroom procedures to provide an opportunity for children to testify to the best of their ability. For example, these findings lend support to the notion that testifying via closed circuit television from a room outside the courtroom could produce more reliable and competent testimony from some children. Studies that vary separate components of the courtroom experience (e.g., familiarity, formality, presence of support persons or spectators) could guide reform efforts. For example, if the quality of children's evidence varies with the presence of spectators or support persons, in interaction with individual differences among children, then guidelines for closing of the courtroom to spectators or allowing support persons during testimony could be developed.

Additionally, these data shed light on some of the inconsistencies commonly noted in children's statements. The results suggest that one source of inconsistency in children's statements is due to variations in the environments in which the questioning occurs. Perhaps, more complete and detailed reports are to be expected in the statements gathered from interviews held in familiar, private, informal settings than from testimony offered in the courtroom. If replicated with a more powerful manipulation of court-related stress, the results could confirm that children's reports should be expected to vary as a function of setting, not necessarily honesty.

Contrary to these results, several clinical tools for assessing allegations of child abuse cite inconsistency as a criteria indicative of false allegations (Gardner, 1987; Yuille, 1989). Moreover, studies suggest that jurors believe inconsistency affects witness credibility (Goodman, Golding & Haith, 1984; Lieppe & Romanczyk, 1987). In light of the results of this study, the practice of equating children's reliability with consistency across settings should be re-evaluated.

As a society, we have a responsibility to create an environment that maximizes the completeness and accuracy of children's testimony and minimizes the stress placed on children in the process. Our hope is that expanded theories and further research regarding the influence of context and emotion on children's memory will provide direction for the implementation of legal reforms, reforms that enhance discovering the truth and safeguarding children's well-being.

References

Ceci, S.J., Bronfenbrenner, U., & Baker, J.G. (1988). Memory in context: The case of prospective remembering. In F.E. Weinert & M. Perlmutter (Eds.), Universal changes and individual differences (pp. 243-256). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Davies, G.M. & Thomson, D.M. (1988). Memory in context: Context in memory. New York: John Wiley & Sons.

Dent, H. (1977). Stress as a factor influencing person recognition in identification parades. Bulletin of the British Psychological Society, 30, 339-340.

Gardner, R.A. (1987). The parental alienation syndrome and the differentiation between fabricated and genuine child sex abuse. Cresskil, NJ: Creative Therapeutics.

Globe Newspaper Co. v. Superior Court, 102 S.Ct. 2613 (1982).

Goodman, G.S., Golding, J.M., & Haith, M.M. (1984). Jurors' reactions to child witnesses. Journal of Social Issues, 40(2), 139-156.

Goodman, G.S., Hirschman, J., Hepps, D., & Rudy, L. (1991). Children's memory for stressful events. Merrill-Palmer Quarterly, 37, 109-158.

Goodman, G.S., Levine, M., Melton, G.B. & Ogden, D.W. (1991). Child witnesses and the confrontation clause: The American Psychological Association Brief in Maryland v. Craig. Law and Human Behavior, 51(1), 13-30.

Hill, P.E. & Hill, S.M. (1987). Videotaping children's testimony: An empirical view. Michigan Law Review, 85, 809-833.

Leippe, M.R. & Romancyzk, A. (1987). Children on the witness stand: A communication /persuasion analysis of jurors' reactions to child witnesses. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), Children's eyewitness testimony (pp. 155-177). New York: Springer Verlag.

Maryland v. Craig, 110 S. Ct. 3157, (1990).

Melton, G.B. & Thompson, R. (1987). Getting out of a rut: Detours to less traveled paths in child-witness research. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), Children's eyewitness memory (pp. 209-229). New York: Springer-Verlag.

Oschner, J.E. & Zaragoza, M.S. (1988, March). The accuracy and suggestibility of children's memory for neutral and criminal eyewitness events. Paper presented at the American Psychology and Law Association Meetings, Miami, Florida.

Peters, D. (1991). The influence of arousal and stress on the child witness. In J. Doris (Ed.), The suggestibility of children's recollections (pp. 60-76). Washington, D.C.: American Psychological Association.

Saywitz, K. & Snyder, L. (In press). Improving children's testimony with preparation. In G. Goodman & B. Bottoms (Eds.), Understanding and improving children's testimony. New York: Guilford Publications.

Tulving, E. & Thomson, D.M. (1973). Encoding specificity and retrieval processes in episodic memory. Psychological Review, 80, 352-373.

Warren-Leubecker, A. & Springfield, M. (1987, April). Flashbulb memory revisited: Children recall the space shuttle accident. Paper presented at the Society for Research on Child Development Meetings, Baltimore, MD.

Whitcomb, D. (1992). When the victim is a child (2nd ed.). Washington, D.C.: National Institute of Justice.

Yuille, J.C. (1989). Credibility Assessment. Kluwer Academic Publishers.

Table 1

Mean Number of Items Recalled During Free and Probed Recall

	Interview Condition		
	School	Court	t
	Free recall		
Correct			
M	8.38	4.74	2.07*
SD	5.90	4.22	
Incorrect			
M	0.50	0.21	1.19
SD	0.87	0.53	
	Probed recall[a]		
Correct			
M	39.12	36.76	1.73
SD	4.18	3.73	
Incorrect			
M	7.18	9.41	-2.05*
SD	2.60	3.66	

Table 1 (cont.)

	Misleading probed recall[b]		
Correct			
M	4.65	4.12	1.72
SD	0.93	0.86	
Incorrect			
M	0.82	1.53	-2.69**
SD	0.73	0.80	

*p < .05. **p = .01.

[a]Probed recall consisted of 53 questions. [b]Subset of 6 questions were phrased in a misleading manner.

Table 2

Mean Ratings of Children's Perceptions of Court-related Stress

	Interview Condition		
Experience	School	Court	t
Crying in court	3.29	4.59	2.97*
Having people not believe you in court	4.18	4.47	0.94
Answering questions in front of unfamiliar adults in court	3.18	4.00	2.25*
Answering embarrassing questions in court	3.41	3.76	0.89
Not knowing the answers to questions you are asked in court	3.59	3.71	0.24
Answering questions in court in front of a person who hurt you	3.71	3.35	0.71
Going to court	2.53	3.29	1.63
Answering questions in front of a judge in court	2.77	3.18	0.87
Having an attorney ask you questions in court	2.65	3.00	0.73
Being a witness in court	2.29	2.76	0.85

*$p < .05$.

Table 3

Mean Number of Items Recalled During Free and Probed Recall

	Interview Condition		
	Non-court	Court	F
Free recall			
Correct			
M	9.90	4.86	12.15*
SD	6.22	5.38	
Incorrect			
M	0.63	0.32	2.67
SD	0.83	0.61	
Probed recall			
Correct			
M	36.69	36.41	0.04
SD	4.76	7.22	
Incorrect			
M	14.22	13.74	0.23
SD	4.11	4.12	

*$p < .001$.

Table 4

Mean Values on Measurements of Anxiety by Interview Condition and Sex

	Interview Condition	
	Non-court	Court
	STAIC	
Male		
M	30.65	31.21
SD	5.09	5.21
Female		
M	30.25	31.71
SD	5.26	5.69
	Court-Related Stress Scale	
Male		
M	51.80	51.64
SD	14.89	13.05
Female		
M	59.95*	58.29*
SD	13.23	10.76

Table 4 (cont.)

	Heartrate Reactivity Indices	
Male		
M	7.94	23.13*
SD	13.39	15.65
Female		
M	15.42	16.37
SD	12.73	16.32

$p < .05$.