

TEMPORAL PERSPECTIVE IN JUVENILE DELINQUENTS IN RESPONSE
TO CRIMINAL AND NON-CRIMINAL CUES

by

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TABLE OF CONTENTS

	Page
LIST OF TABLES	v
ABSTRACT	vi
INTRODUCTION	1
METHOD	5
Subjects	5
PROCEDURE	11
RESULTS	16
DISCUSSION	23
APPENDIX A. INDEX OF STATUS CHARACTERISTICS FORM AND SCORING CRITERIA	27
APPENDIX B. MATCHED PAIRS OF CRIMINAL AND NON-CRIMINAL STORIES	30
APPENDIX C. INSTRUCTIONS TO STORY JUDGES AND JUDGES' RESPONSES	32
APPENDIX D. TEMPORAL PERSPECTIVE TEST USED IN THE PRESENT STUDY	33
REFERENCES	41

LIST OF TABLES

Table	Page
1. Means of Delinquents and Control Groups on Matching Variables	7
2. Comparison of Present Delinquent and Non-Delinquent Groups and the Barndt and Johnson Groups	8
3. Comparison of Delinquent Responses to Criminal vs. Non-Criminal Stories	17
4. Comparison of Non-Delinquent Responses to Criminal vs. Non-Criminal Stories	18
5. Comparison of Delinquent Responses to "Self" vs. "Other" for Criminal and Non-Criminal Stories	19
6. Comparison of Non-Delinquent Responses to "Self" vs. "Other" for Criminal and Non-Criminal Stories	20

ABSTRACT

The present study was designed to investigate whether the interest in the present rather than the past or future, which appears consistently characteristic of juvenile delinquents is specific to criminal behavior or whether it is a more general personality trait which is equally related to criminal and non-criminal behavior. Temporal perspective data were obtained from 27 delinquents in response to stories dealing with criminal and non-criminal activities which were matched on relevant temporal perspective variables. The data indicate that juvenile delinquents do show temporal perspective differences in response to criminal and non-criminal stories and further that the direction of these differences can vary with different temporal perspective variables. The temporal perspective of delinquents may be constricted regarding time perceived as necessary to carry out criminal acts, but expanded concerning time spent planning criminal activities and time spent thinking about past criminal acts.

INTRODUCTION

Temporal perspective or personal time has been defined as "projection of the self in the temporal dimension" (Wallace and Rabin, 1960). For example, an individual who tends to reminisce about previous events in his life history could be described as showing a preference for "past" temporal orientation, while an individual who is preoccupied with his immediate life situation might be said to demonstrate "present" temporal orientation, and an individual who is most concerned with future events and future planning is "future" oriented. The review by Wallace and Rabin (1960) indicates a long history of psychological interest in temporal perspective dating back to the last century, as well as an increased amount and broadening of research activity in this area. Temporal perspective has been studied as an isolated phenomenon, but more recent trends have developed in the direction of investigating the relationships between temporal experience and other personality phenomena, normal and abnormal.

Research approaches and methodology used in the study of temporal perspective have varied widely. Some research has emphasized "extension" or the duration of time over which an individual projects himself into the past or future. Extension is frequently measured by the time span

involved in a story produced by a subject (LeShan, 1952), or by the time span between the subject's current age and the date of some significant event in either his past or future (Roos and Albers, 1965). Other research has emphasized "direction" of temporal perspective, using frequency counts of tense usage as the method of measurement (Ruiz and Krauss, 1968).

Using a story telling technique, LeShan (1952) found that lower class children produce stories covering significantly shorter time spans than do middle class children. LeShan speculated that delinquents in general, and psychopaths in particular would have short time perspectives. As a theoretical rationale for this prediction, LeShan postulated that psychopaths, who have been characterized as living in the here-and-now and as being relatively unconcerned about rewards and punishment in the future, might have been reared in an environment where: (1) reward and punishment generally follow immediately on action and (2) such reinforcements are usually unpredictable. As a result, the psychopath would not learn to act in terms of future reward and would actually have learned the opposite since the future would be regarded as unpredictable. Thus, psychopaths theoretically are poorly motivated to exert effort aimed at the achievement of future goals. LeShan further suggested that in order to control delinquency it

may be necessary first to change the time orientations of delinquents.

Following LeShan's suggestions, Barndt and Johnson (1955), using a story completion technique confirmed that delinquent boys are more present oriented and have shorter time orientations than non-delinquent boys, and that this difference is independent of socioeconomic status. The experimental group consisted of delinquent boys who had been committed to a state rehabilitation school by court action. The experimental and control groups in the Barndt and Johnson study were matched on relevant variables such as IQ, school achievement, and socioeconomic status.

Dauids, Kidder, and Reich (1962) partially replicated the Barndt and Johnson study, but included delinquent girls as well as delinquent boys in their experimental groups. The data from the normal adolescent boys in the Barndt and Johnson study were used as control data, hence the replication is only partial. They concluded that normal adolescents are significantly more future oriented than male ($p = .05$) and female ($p = .001$) adolescents who engage in delinquent activity.

Using time spans in TAT-type stories, Ricks, Umbarger, and Mack (1964) compared stories told by ten delinquent boys before and after successful, vocationally-oriented psychotherapy to stories told by ten matched, untreated controls. They found that the treated delinquent

boys increased in future orientation as measured by stories in response to cards designed to tap self-image and control of aggression. Increase in retrospective span was noted only in response to cards dealing with control of aggression.

The present study was designed to investigate whether the shorter time orientation which appears consistently characteristic of juvenile delinquents is specific to criminal behavior or whether it is a more general personality trait which is equally related to both criminal and non-criminal behavior as indicated by responses to stories dealing with criminal and non-criminal activities.

METHOD

Subjects

The experimental Ss were 28 boys, aged 14 to 17 years, mean age 16.07 years, who had been committed to the Arizona Youth Center (AYC) because of delinquent activities. Twenty-six Ss had committed multiple offenses; mean = 4.8. When first admitted to AYC, all Ss were given a routine battery of psychological tests including the Cattell Culture Fair Test of "G," scale 2. The experimental group had an IQ range of 89 to 124 and a mean of 98.7. One experimental S was eliminated because of failure to respond appropriately to the experimental materials.

The selection of control Ss represents an application of the matched groups design. A total of 31 students at a local Tucson High School were given tests measuring relevant matching variables and a pool of 20 control Ss was formed. Subjects were eliminated from the control group, of course, if they admitted any history of court action, excluding minor traffic violations (N = 7). Four additional control Ss were eliminated; two because their IQ fell below the lower limit of the experimental group and two others because they either failed to respond, or failed to respond appropriately to the experimental variables. The 20 minute form of the Otis Self Administering Test of Mental Ability

was used to measure IQ. Control group IQ's ranged from 92 to 134, with a mean of 108. Control Ss ranged in age from 14 to 16 years with a mean of 15.

To check on socioeconomic status, a modified form of the Index of Status Characteristics (Warner, Meeker, and Eells, 1960) was developed for this research and administered to all subjects. (See Appendix A for the form used and scoring criteria.) Using this technique, weighted scores are derived from parental occupation, source of income, type of dwelling, and educational level. The weighted scores are added and the total is considered an index of socioeconomic status. According to this scale, the means of both groups fall in an indeterminate range between lower-middle and upper-middle class.

Means of control and experimental groups on matching variables are shown in Table 1. Based on t tests of means, the two groups show significant differences regarding Age ($p = .0027$, delinquents older), and IQ ($p = .0049$, controls have higher IQ). There is no significant difference between groups regarding socioeconomic status.

It is crucial to this experiment that the two groups of subjects respond differently to measures of temporal perspective as in previous research. To be certain that no artifact obscured this effect it was decided to administer the Barndt and Johnson Story Completion Test, a measure of temporal perspective which has discriminated between these

Table 1. Means of Delinquents and Control Groups on Matching Variables

Variable	Delinquent	Control	p
	M	M	
Age	16.07	15.40	.0027
IQ	98.70	107.95	.0049
Status Index	50.80	52.00	.2262

groups in previous research. In this procedure the subject is given the following instructions:

I want to see what kind of a story you can tell. I'll start a story and then let you finish it any way you want to. You can make it any kind of story you wish. See how good a story you can tell. Write your story on this page.

About 3:00 o'clock one bright, sunny afternoon in May two boys were walking along a street near the edge of town . . .

After completing his story the subject responded to the question "How long did your story take to happen?" The scoring system used by Barndt and Johnson is as follows:

- | <u>Score</u> | <u>Length of Time</u> |
|--------------|--|
| 1. | Under one hour |
| 2. | One hour or more, but less than five hours |
| 3. | Five hours or more, but less than 12 hours |
| 4. | Twelve hours or more, but less than one week |

5. One week or more, but less than three months
6. Three months or more

Contrary to expectations, the delinquent and non-delinquent Ss in this study show no significant difference in temporal perspective as indicated by the Barndt and Johnson Story Completion Test. In fact, the expected trends are reversed; the control Ss show shorter time spans than the experimental Ss. Since the Barndt and Johnson study used the identical story completion technique it is possible to make direct comparisons between their results and those of the present study (see Table 2).

Table 2. Comparison of Present Delinquent and Non-Delinquent Groups and the Barndt and Johnson Groups

	Present Delinquent Boys	Present Normal Boys	B-J Delinquent Boys	B-J Normal Boys
Mean Story Score	2.5	2.2	2.8	3.6

This comparison indicates that it is the present control group which is not responding to this measure as expected. There is no significant difference between the two delinquent groups, therefore the delinquent group data

agree with the Barndt and Johnson findings and are considered valid. Either the present control group is somehow unique and not representative regarding performance on measures of temporal perspective or the Barndt-Johnson Normal group data are not replicable. For this reason, the control group data were not considered valid for comparison purposes, but analysis of trends within both experimental and control groups were included in the present study.

The reasons for the unique and unexpected control data are unclear, but in retrospect several factors which may have had some effect are apparent. First, it is possible that the differences between normal and delinquent boys reported by Barndt and Johnson are not replicable. It is also possible that the experimental and control Ss do not represent different groups, delinquents and non-delinquents respectively. The experimental and control groups may even be reversed, i.e., control Ss may be more delinquent than experimental Ss, but never caught and identified. It may be difficult to obtain a true non-delinquent group since non-delinquents are defined as Ss who have never been apprehended and convicted of delinquent acts. It would be desirable in future research to redefine the control group by excluding any subject who reports involvement in delinquent acts, but was never apprehended or convicted. Such considerations indicate the need for a thorough replication of the Barndt and Johnson study.

Another factor which may have affected the apparently unrepresentative control group data is the significant IQ and age differences between experimental and control groups (Table 1). Although careful matching on relevant variables was included in the experimental design of the present study, this effort was confounded by limited access to groups of normal Ss and the limited number of available delinquent Ss. The resulting small experimental and control groups were further reduced to obtain similar IQ and age ranges, but non-significant differences between groups on these two variables were not obtained. Evaluation of the importance of these differences will require replication with sufficient numbers of control and experimental Ss to permit effective matching between groups.

Finally, the testing procedure used for the control group may have had an adverse effect. This procedure, which included administration of the Otis IQ Test before the experimental measures may have been too long, resulting in boredom and lack of effort by control Ss. Separated, briefer testing periods would be desirable in future research.

PROCEDURE

To investigate the span of future time orientation to criminal and non-criminal cues, five pairs of stories were created for this research (Griego, 1969; see Appendix B). One story of each pair describes criminal activity, the other story describes non-criminal activity. To determine whether the criminal and non-criminal stories could legitimately be considered equivalent, some preliminary research was conducted. The pairs of stories were submitted to five judges (graduate students in clinical psychology) to rate on three relevant variables. Instructions to the judges and their responses are listed in Appendix C. Results from this pilot study indicated that the members of each story pair are equivalent with regard to the following variables:

1. Time necessary to decide to do the activities involved in the stories.
2. Length of time required for planning.
3. Length of time required to carry out the activities involved.

The development of these matched stories represents a new and innovative approach for the investigation of temporal perspective.

It is well known that juvenile delinquents consistently obtain lower scores on tests of reading skill than their age peers (Bennett, 1960). Thus, to assure that all Ss understood the stimulus stories, the Dale-Chall readability formula (Dale and Chall, 1948a, 1948b) was used to evaluate the reading level of the stories. According to this technique the mean for all stories falls within a range representing fifth and sixth grade reading levels.

The stories were presented in a fixed sequence in which the members of each pair of equivalent stories were separated. Using A = non-criminal story and B = criminal story, the sequence was as follows: A B B A A B B A A B. In an attempt to minimize order effects, the reverse of this sequence was administered to eight experimental Ss and nine controls.

The instructions and sample story were read aloud and discussed with each group of subjects (see Appendix D for complete test). As finally standardized these were as follows:

Following are 10 short stories. Read each story and then answer the questions after each story. There are no right answers and no wrong answers. Just give your own opinions. Even though some stories may seem similar, consider each story individually.

FOR EXAMPLE: Bob was interested in space travel, so on Saturday afternoon he went to the space exhibit at the city museum.

- a. How long did it take Bob to decide to go to the space exhibit? _____

- b. How much time did he spend planning it?

- c. How far ahead did he plan to do it? _____
- d. How much time did he spend doing it? _____
- e. How long did he think about it after he did it?

Even though you might never do this, If you did:

- a. How long would it take you to decide to go to the space exhibit? _____
- b. How much time would you spend planning it?

- c. How far ahead would you plan to do it?

- d. How much time would you spend doing it?

- e. How long would you think about it after you did it?

As shown in the example, each story was followed by 10 questions. These questions were designed to measure temporal perspective regarding the following five variables:

1. Length of time necessary to decide to do the activity involved.
2. Time spent planning the activity.
3. How far in advance the activity was planned.
4. Time spent doing the activity.
5. Time spent thinking about the activity after doing it.

The first five questions measured the S's temporal perspective to the above variables while assuming the story

characters ("other") and not themselves were carrying out the activities involved. The remaining five questions measured the S's temporal perspective while imagining he ("self") was doing the story activities. Thus, comparisons could be made for each variable between temporal perspective estimates given for "Other" (story characters) and for "Self" (experimental Ss). Using the first variable, time to decide to do the activity, as an example, the mean time estimate for "other" (story characters) to decide can be compared with the mean time for "Self" (experimental Ss) to decide to do the activity involved.

For purposes of analysis the responses to all questions were assigned score values depending on the length of time indicated. The particular scoring categories used in this research were developed to ensure normal distribution of the data, to allow sensitivity to short time spans, and to facilitate direct comparisons and averages of responses along a range which started at 0 time and extended to lifetime of the individual. The scoring categories used were as follows:

	<u>Time</u>
1	0
2	1"-2"
3	3"-5"
4	6"-10"
5	11"-45"
6	46"-1'
7	2'-3'
8	4'-5'
9	6'-10'

- 10 11'-20'
- 11 21'-30'
- 12 31'-1 hr.
- 13 2 hr.-3 hr.
- 14 4 hr.-12 hr.
- 15 13 hr.-24 hr.
- 16 2 day-3 day
- 17 4 day-1 week
- 18 2 week-1 month
- 19 2 month-6 month
- 20 7 month-1 year
- 21 2 yr.-4 yr.
- 22 5 yr.-10 yr.
- 23 11 yr. to less than life
- 24 life

Thus each response was given a score from 1 to 24. All data obtained from each subject were used, even though certain boys did not respond to all items. This permitted utilization of all data obtained.

RESULTS

The results obtained in this study, based on two-tailed t tests of the significance of differences between means, are shown in Tables 3 to 6. A two-tailed test was used because of the innovative nature of this research and to reduce the possibility of spurious significance. Although assumptions could have been made, no predictions were possible based on previous research so that to be safe two-tailed tests were required. Use of the two-tailed tests was shown to be appropriate by the variable manner in which the Ss responded to the experimental materials. For example, in the comparison of criminal vs. non-criminal stories, delinquent Ss indicated that less time was needed to carry out criminal activities, but that more time was utilized thinking about criminal activities after doing them. Future research will have to take this effect into consideration when examining similar data.

The data for each of the five variables investigated were analyzed to identify differences in temporal perspective among delinquents (1) in response to criminal vs. non-criminal stories, and (2) in response to questions concerned with "other" (story characters) vs. "self" (experimental Ss). Analysis of "other" vs. "self" was carried out separately for criminal and non-criminal stories.

Table 3. Comparison of Delinquent Responses to Criminal vs. Non-Criminal Stories

A = time required to do the activities involved in the stories
 B = time spent planning
 C = length of time planned ahead
 D = time spent doing the activity
 E = time spent thinking about the story activities after doing them

Variable	Mean for Criminal Stories	Standard Deviation	Mean for Non-Criminal Stories	Standard Deviation	p
	<u>Other</u>				
A	7.5148	2.0142	7.7333	1.7664	.5765
B	7.3741	1.9179	7.1648	2.2047	.6207
C	7.7778	2.5522	8.0500	1.7768	.5017
D	8.7704	1.2173	9.5222	1.2671	.0236*
E	15.6222	3.0169	12.3815	2.4278	.0001***
	<u>Self</u>				
A	8.3040	2.9537	7.8880	1.8562	.5933
B	8.9313	3.1058	7.6580	2.5207	.1219
C	9.7773	3.4023	7.9380	1.8688	.0063**
D	8.8860	1.5081	9.5867	1.3125	.1343
E	15.3667	3.6228	11.8187	3.6306	.0004***

* = .05

** = .01

*** = .001

Table 4. Comparison of Non-Delinquent Responses to Criminal vs. Non-Criminal Stories

A = time required to decide to do the activities involved in the stories

B = time spent planning

C = length of time planned ahead

D = time spent doing the activity

E = time spent thinking about the story activities after doing them

Variable	Mean for Criminal Stories	Standard Deviation	Mean for Non-Criminal Stories	Standard Deviation	p
<u>Other</u>					
A	7.1425	2.3120	6.1650	2.3638	.0037**
B	6.8200	3.1619	6.4066	2.4832	.5527
C	6.8383	2.5742	7.3066	2.3094	.5131
D	8.0692	1.3869	9.3750	1.9021	.0053**
E	16.1425	3.6238	12.8133	2.3958	.0011**
<u>Self</u>					
A	7.6298	2.6698	6.5483	2.3281	.0254*
B	7.0377	2.8649	5.8737	3.3179	.1250
C	7.3132	2.5676	7.3062	2.6345	.9888
D	7.1026	1.9760	8.7553	1.4490	.0136*
E	18.0056	3.8415	12.3537	3.0529	.0000***

* = .05

** = .01

*** = .001

Table 5. Comparison of Delinquent Responses to "Self" vs. "Other" for Criminal and Non-Criminal Stories

A = time required to decide to do the activities involved in the stories
 B = time spent planning
 C = length of time planned ahead
 D = time spent doing the activity
 E = time spent thinking about the story activities after doing them

Variable	Mean for "Other"	Standard Deviation	Mean for "Self"	Standard Deviation	p
<u>Criminal Stories</u>					
A	7.6360	1.9655	8.3040	2.9537	.0859
B	7.4520	1.8519	8.9313	3.1058	.0038**
C	9.0720	2.2577	9.7773	3.4023	.0066**
D	8.8240	1.2338	8.8860	1.5081	.7506
E	15.6907	2.9704	15.3667	3.6228	.5618
<u>Non-Criminal Stories</u>					
A	7.7333	1.7664	7.7296	1.9315	.9883
B	7.1648	2.2047	7.5630	2.4508	.6680
C	8.0500	1.7768	7.6833	2.2253	.1649
D	9.5222	1.2671	9.2840	1.7898	.5195
E	12.3815	2.4278	11.7673	3.5261	.2266

** = .01

Table 6. Comparison of Non-Delinquent Responses to "Self" vs. "Other" for Criminal and Non-Criminal Stories

A = time required to decide to do the activities involved in the stories
 B = time spent planning
 C = length of time planned ahead
 D = time spent doing the activity
 E = time spent thinking about the story activities after doing them

Variable	Mean for "Other"	Standard Deviation	Mean for "Self"	Standard Deviation	p
<u>Criminal Stories</u>					
A	7.1425	2.3120	7.2983	2.9764	.7796
B	6.8200	3.1619	7.6858	3.9722	.1693
C	6.8383	2.5742	7.9475	3.7294	.0503
D	8.0692	1.3869	6.8475	2.2240	.0290*
E	16.2026	3.7082	18.3211	3.9714	.0818
<u>Non-Criminal Stories</u>					
A	6.0158	2.3316	6.5483	2.3281	.1000
B	6.3579	2.5384	5.8737	3.3179	.6355
C	7.3053	2.3694	7.3062	2.6345	.9938
D	9.2895	1.9136	8.7553	1.4490	.0947
E	12.8211	2.4578	12.7562	3.4270	.8814

* = .05

Table 3 shows delinquent Ss' results from comparison of criminal vs. non-criminal stories. These results indicate that for "other," the delinquents estimate that significantly less time is needed to carry out criminal activities than non-criminal activities ($p = .0236$). Results in Table 3 also reveal that for both "other" and "self," delinquents indicate significantly more time spent thinking about criminal acts after carrying them out (p "other" = .0001, p "self" = .0004). For "self," but not for "other," delinquents also indicate that criminal acts are planned further in advance ($p = .0063$).

Control group data from comparison of criminal vs. non-criminal stories are presented in Table 4. Control Ss agree with delinquents in estimating that for "other," less time is needed to carry out criminal activities ($p = .0037$) and that for both "other" and "self" significantly more time would be spent thinking about criminal acts after carrying them out (p "other" = .0011, p "self" = .0000). Control Ss differ from delinquents by estimating that for "self" as well as "other," less time is required to carry out criminal activities ($p = .0135$). Control Ss estimate that for both "other" and "self" more time is needed to decide to carry out criminal activities (p "other" = .0037, p "self" = .0254), while delinquents estimate no difference between criminal and non-criminal activities in this regard. Control

Ss do not agree with delinquents that for "self," criminal activities are planned further ahead ($p = .9888$).

Table 5 presents the delinquent Ss' data from the "other" vs. "self" analysis for both criminal and non-criminal stories. The only significant findings, variables B and C for criminal stories only, indicate the delinquents see themselves as spending more time in various aspects of planning criminal activities than "others" ($p = .0038$, $p = .0066$).

Control group data from the "other" vs. "self" comparison for both criminal and non-criminal stories are presented in Table 6. The only significant result indicates that control Ss estimate that less time is required for "self" than for "other" to carry out criminal acts ($p = .0290$). This contrasts with delinquents who indicate no significant difference regarding this variable. Control Ss do not agree with delinquent estimates that "self" plans criminal activities further ahead and that "self" takes more time to plan criminal acts.

DISCUSSION

The finding that delinquents estimate that significantly less time is needed to carry out criminal activities than non-criminal activities provides supportive evidence for the hypothesis that the shorter time orientation which appears consistently characteristic of juvenile delinquents is specific to criminal behavior, at least regarding time perceived as necessary to carry out criminal vs. non-criminal activities. However, it is also evident from the present data that the control group is even more consistent than the delinquent group in estimating that less time is spent carrying out criminal as opposed to non-criminal activity. This control group finding further emphasizes the need for replication with a control group which has been adequately matched on relevant variables and which has been redefined to exclude Ss who have been involved in delinquent behavior, but never caught and identified. However, present data do provide tentative evidence that delinquents may be more firmly oriented in the here-and-now when dealing with the actual enactment of criminal behavior. This hypothesis remains speculative, but further research is indicated to test its validity and to examine the implications involved. For example, Ricks et al. (1964) have demonstrated that temporal perspective

expands in juvenile delinquents after successful, vocationally oriented psychotherapy. It would be of interest to determine whether the expansion is in the area of temporal perspective concerning criminal acts, non-criminal acts, or both, and to what extent each is affected. An examination of the effect on temporal perspective of other therapeutic approaches, both successful and unsuccessful would also be instructive. LeShan (1952) has postulated that changing time orientation of delinquents may be basic to preventing delinquent behavior. LeShan points out that a reform school will be neither a deterrent in the future nor a lesson from the past in an individual who has learned to respond only in terms of the immediate present. He suggests that in order to control delinquency it will be necessary first to change the time orientations of delinquents. At present, very little is known concerning such learning and it would appear to be a fruitful subject for research.

The results indicating that delinquents may see themselves as spending more time in various aspects of planning and thinking about criminal vs. non-criminal activities is in apparent disagreement with previous findings, which have indicated that delinquents characteristically demonstrate a constricted temporal perspective and tend to be "present" oriented. Data from the present study provide supportive evidence for the hypothesis that a constricted temporal perspective may not be uniformly

characteristic of delinquents. Specifically, delinquents may actually have an expanded temporal perspective regarding time perceived as necessary for planning criminal vs. non-criminal activities. This conclusion is supported by the finding that non-delinquent Ss do not demonstrate expanded time perspective regarding planning aspects of criminal vs. non-criminal activities.

The significance of these findings is speculative, but if accurate, they speak poorly for delinquent planning ability; they indicate that delinquents, but not non-delinquents, perceive themselves as spending significantly more time reviewing past crimes and planning new ones, yet these Ss were unable to avoid being caught. This is consistent with clinical descriptions of delinquents which describe them as unable to relate past experiences to present or future situations (Noyes and Kolb, 1963). Assuming that a relatively great amount of time is indeed spent planning criminal acts, the planning is either of poor quality or not utilized in impulsive acts, or both. The findings of the present study which suggest that delinquents may underestimate time necessary to carry out criminal acts is perhaps indicative of ineffective planning ability. The significantly expanded estimate of decision time required for criminal vs. non-criminal behavior demonstrated by the control group, but not the delinquent group, indicates that delinquents may indeed act more impulsively than

non-delinquents, at least regarding criminal activities and that planning time may therefore not be utilized effectively.

In general, the data from the present study seem to indicate that juvenile delinquents do show temporal perspective differences in response to criminal and non-criminal stories, and further that the direction of these differences can vary with different temporal perspective variables. Delinquent temporal perspective may be constricted regarding time perceived as necessary to carry out criminal acts, but expanded concerning time spent planning criminal activities and time spent thinking about past criminal acts.

The Griego matched-story technique is a major contribution of this research. This technique represents development of an innovative, apparently valid research tool for the investigation of temporal perspective and would seem to warrant further use and application in temporal perspective research. A major task for future research will be to establish reliable temporal perspective differences between delinquent and non-delinquent adolescents. This should include replication of the Barndt and Johnson (1955) study as well as examination of the extent to which age and IQ are involved in time orientation in adolescents. Further research is also indicated to examine more fully the unexpected finding in the present study that a constricted time perspective may not be uniformly characteristic of delinquents as previously reported.

Father Mother

_____ Savings or investments (does not need to work)

_____ Profits and fees (includes money paid to doctors, lawyers, dentists, etc., and money earned by owners of businesses)

_____ Wages earned by the hour (example: \$3.00 per hour)

_____ Wages earned by the month or by the year (example: \$500.00 per month or \$6,000.00 per year)

8. Check one. You live in a

_____ House

_____ Apartment in a regular apartment building

_____ Apartment in a building not originally intended for apartments (such as apartments over stores, or a house converted into two or more living units)

_____ House trailer

9. How many rooms are there in your home (not including closets, etc.)? _____

How many bedrooms are there in your home? _____

How many families live there? _____

How many people live there? _____

10. Which statement best fits your home? Check one.

_____ Widely separated houses or apartments which are neat appearing and in good repair (do not need painting, roofing, etc.), with lawns and gardens which are landscaped and well cared for.

_____ Neat appearing houses or apartments in good repair, with lawns which are well cared for but not landscaped, and with average separation between houses.

_____ Houses or apartments in need of some repair, with lawns which are in need of care (for example need mowing and other upkeep)

_____ Houses or apartments which need a lot of repair, with lawns which are very run down and neglected.

Scoring Criteria: The scoring system used was the same as that presented by Warner et al. (1960) except that house trailers, which were not included in the Warner et al. study, were considered as being equivalent to small houses in good condition unless description of poor condition indicated otherwise.

APPENDIX B

MATCHED PAIRS OF CRIMINAL AND NON-CRIMINAL STORIES (Griego, 1969)

1. a) Bob and Jim went to a stock car rally Saturday afternoon. They were walking around the parking lot when they spotted a car with the keys in it. No one else was around so they got into the car and drove off.
b) Ray and Charlie went to a stock car rally Saturday afternoon. They talked to a race driver after the races, and asked for a ride in his car and he took them for a drive.
2. a) At a night football game Joe and Martin went through the parking lot and noticed a car with a stereo cartridge tape recorder. They broke into the car and took the tape recorder.
b) One evening Steve and Don walked through a used car lot. They stopped to look at a car Don would like to have.
3. a) One Saturday night Mike and Vince walked by a school. They saw that no one was around so they threw rocks through some windows.
b) One Saturday afternoon Chuck and Dave walked by the elementary school they went to. They stopped and looked into their old classroom.
4. a) Jack, Bruce, and Terry were cruising around Friday night. They spotted an old man hitch-hiking, picked him up, and took his money.
b) Art and Larry were driving around Saturday night when they saw a hitch-hiker. They stopped, picked him up, and gave him a lift.

5. a) John and Henry knew that John's neighbors were away on vacation. They broke into the house.
- b) Richard and Larry, who were interested in model airplanes, went to a local model airplane exhibit.

APPENDIX C

INSTRUCTIONS TO STORY JUDGES AND JUDGES' RESPONSES

Read each pair of stories and give your opinion about the following statements for each pair. For each statement indicate whether you

- SA strongly agree
- A agree
- AD agree somewhat more than disagree
- CD can't decide
- DA disagree somewhat more than agree
- D disagree
- SD strongly disagree

Fill in your answers on the answer sheet provided.

Statements

1. The stories are equivalent with regard to time necessary to decide to do the activity involved in the stories.
2. The stories are equivalent with regard to length of time required for planning.
3. The stories are equivalent with regard to length of time required to carry out the activity involved.

Judges' Evaluations of Story Pairs

Story Pair	Judges														
	1			2			3			4			5		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	A	A	A	SA	SA	A	A	A	AD	SA	A	A	A	A	AD
2	A	A	A	SA	D	D	A	A	A	SA	SA	SA	SA	SA	SA
3	A	A	A	A	SA	SA	A	A	A	SA	SA	SA	SA	SA	SA
4	A	A	A	SA	SA	SA	A	A	A	SA	SA	SA	SA	A	AD
5	A	AD	A	SA	SA	SA	A	A	A	A	A	A	A	SA	SA

APPENDIX D

TEMPORAL PERSPECTIVE TEST USED IN THE PRESENT STUDY

Following are 10 short stories. Read each story and then answer the questions after each story. There are no right answers and no wrong answers. Just give your own opinions. Even though some stories may seem similar, consider each story individually.

FOR EXAMPLE: Bob was interested in space travel, so on Saturday afternoon he went to the space exhibit at the city museum.

- a. How long did it take Bob to decide to go to the space exhibit? _____
- b. How much time did he spend planning it? _____
- c. How far ahead did he plan to do it? _____
- d. How much time did he spend doing it? _____
- e. How long did he think about it after he did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to go to the space exhibit? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

1. Ray and Charlie went to a stock car rally Saturday afternoon. They talked to a race driver after the races, asked for a ride in his car, and he took them for a drive.

- a. How long did it take Ray and Charlie to decide to ask a driver for a ride? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to ask a driver for a ride? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

2. One Saturday night Mike and Vince walked by a school. They saw that no one was around so they threw rocks through some windows.

- a. How long did it take Mike and Vince to decide to throw rocks through the windows? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to throw rocks through the windows? _____
 - b. How much time would you spend planning it? _____
 - c. How far ahead would you plan to do it? _____
 - d. How much time would you spend doing it? _____
 - e. How long would you think about it after you did it? _____
3. Jack, Bruce, and Terry were cruising around Friday night. They spotted an old man hitch-hiking, picked him up, and took his money.
- a. How long did it take Jack, Bruce, and Terry to decide to pick up the hitch-hiker and take his money? _____
 - b. How much time did they spend planning it? _____
 - c. How far ahead did they plan to do it? _____
 - d. How much time did they spend doing it? _____
 - e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to pick up the hitch-hiker and take his money? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

4. Tom and Ralph, who were interested in model airplanes, went to a local model airplane exhibit.
- How long did it take Tom and Ralph to decide to go to the model airplane exhibit? _____
 - How much time did they spend planning it? _____
 - How far ahead did they plan to do it? _____
 - How much time did they spend doing it? _____
 - How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- How long would it take you to decide to go to the model airplane exhibit? _____
- How much time would you spend planning it? _____
- How far ahead would you plan to do it? _____
- How much time would you spend doing it? _____
- How long would you think about it after you did it? _____

5. One evening Steve and Don walked through a used car lot. They stopped to look at a car Don would like to have.

- How long did it take Steve and Don to decide to stop and look at the car? _____
- How much time did they spend planning it? _____
- How far ahead did they plan to do it? _____
- How much time did they spend doing it? _____
- How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- How long would it take you to decide to stop and look at the car? _____

- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

6. Nick and Keith knew that Keith's neighbors were away on vacation. They broke into the house.

- a. How long did it take Nick and Keith to decide to break into the house? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to break into the house? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

7. Bob and Jim went to a stock car rally on Saturday afternoon. They were walking around the parking lot when they spotted a car with the keys in it. No one else was around so they got into the car and drove off.

- a. How long did it take Bob and Jim to decide to take the car? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____

- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to take the car? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

8. One Saturday afternoon Chuck and Dave walked by the elementary school they went to. They stopped and looked into their old classrooms.

- a. How long did it take Chuck and Dave to decide to stop and look into their old classrooms? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to stop and look into your old classroom? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

9. Art and Larry were driving around Saturday night when they saw a hitch-hiker. They stopped, picked him up, and gave him a lift.

- a. How long did it take Art and Larry to decide to pick up the hitch-hiker and give him a lift? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to pick up the hitch-hiker and give him a lift? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

10. At a night football game Joe and Martin went through the parking lot and noticed a car with a stereo cartridge tape recorder. They broke into the car and took the tape recorder.

- a. How long did it take Joe and Martin to decide to take the tape recorder? _____
- b. How much time did they spend planning it? _____
- c. How far ahead did they plan to do it? _____
- d. How much time did they spend doing it? _____
- e. How long did they think about it after they did it? _____

Even though you might never do this, If you did:

- a. How long would it take you to decide to take the tape recorder? _____
- b. How much time would you spend planning it? _____
- c. How far ahead would you plan to do it? _____
- d. How much time would you spend doing it? _____
- e. How long would you think about it after you did it? _____

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