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## The Identification of Three Types of Gamblers and Related Personality Characteristics and Gambling Experiences

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THE IDENTIFICATION OF THREE TYPES OF GAMBLERS AND RELATED  
PERSONALITY CHARACTERISTICS AND GAMBLING EXPERIENCES

by

Edward L. Conrad

A Dissertation Submitted to the Faculty of the Graduate School  
of Loyola University of Chicago in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

January

1978

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## VITA

The author, Edward L. Conrad, is the son of Edward George Conrad and Elizabeth (Brooks) Conrad. He was born February 26, 1946, in Baltimore, Maryland.

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## CHAPTER I

### INTRODUCTION

Estimates of the number of pathological gamblers in the United States vary widely. Berry (1968) cited estimates by various professionals which ranged between five and ten million individuals who could not control their gambling. Livingston (1974) cited a United States Public Health survey which estimated that there were six million pathological gamblers in the United States. The most recent estimate is that of the Commission on the Review of the National Policy Toward Gambling (1976). The Commission estimated that there were 1.1 million "probable" pathological gamblers in the United States and approximately three times as many "potential" pathological gamblers. The Commission's estimates were based on observations of gamblers, the betting behavior reported by interviewees, and responses to an eighteen-item questionnaire. The Commission's estimates, therefore, appear to be the most reliable. However, even if the Commission's estimates are accepted, it is apparent that pathological gambling is a problem of major proportions.

As with other forms of "addiction", the cost in terms of personal suffering by the pathological gambler is compounded by the social costs of familial disruption, criminal

activities to support the "habit", and the reduced level of functioning of the individuals involved. Unlike alcoholism and drug addiction, however, pathological gambling has been largely ignored by the social sciences. In fact, the first and only professionally staffed treatment center is a mere five years old (Custer, 1976). Even Gamblers Anonymous is relatively new, having been founded in 1957. It is also relatively small with a membership of approximately five thousand in the United States ("Compulsive Gambler", 1976).

In addition to the virtual absence of treatment facilities, the area of pathological gambling has been largely ignored in the research literature. Furthermore, the literature that is available on the subject is composed primarily of theoretical statements based on relatively small samples of clinical cases (e.g., Barker & Miller, 1966a; 1966b; and 1968; Bergler, 1958; Boyd & Bolen, 1970; and Gladstone, 1967). The most elaborate of these theoretical statements is the psychoanalytic view set forth by Bergler (1958). He states that the pathological gambler is a neurotic who has a need to lose. At the very base of this need is what Bergler referred to as "psychic masochism". Gambling is seen as a rebellion against the restrictions of the reality principle. Specifically, it is an attempt to act on feelings of omnipotence stemming from the oral stage of development and is a rebellion directed at the parents who forced the child to conform to the reality principle. However, such

behavior is accompanied by guilt. This guilt can be assuaged only through punishment. Thus, while the pathological gambler consciously vows that he wants to win, unconsciously he must lose. Bergler felt that there were six characteristics which marked the pathological gambler and differentiated him from the non-pathological gambler. First, he habitually takes chances (i.e., He seeks out gambling opportunities). Secondly, gambling precludes all other interests. Third, he is full of optimism and never learns from his defeat. Fourth, he never stops when winning. Fifth, despite initial caution, the gambler eventually risks too much. Finally, "pleasurable-painful tension" (i.e., thrill) is experienced during the gambling. The position which Bergler espoused was based on clinical cases which he had seen in his psychoanalytic practice. He presented no research evidence to support his position.

There have been a few efforts to empirically validate the theoretical positions that have been set forth, but the results have been ambiguous or even contradictory. For example, Hunter and Brunner (1928) hypothesized that gambling was an indirect outlet for neurotic tendencies. Using the Colgate Personal Inventory of Psychoneurotic Tendencies (B2) and the Colgate Personal Inventory of Introversion-Extroversion, they compared a group of college students characterized by "an excessive indulgence in games of chance invariably played for money stakes." (p. 38) with a group

of non-gambling students. There were no significant differences in mean scores found between the groups. However, on both measures, the gambling subjects obtained a bi-modal distribution; while the control group obtained a more normal distribution.

McGlothlin (1954) studied female poker players who frequented commercial card clubs. Based on psychoanalytic theory, he hypothesized that they would be emotionally insecure, have a strong tendency to believe in luck and superstition, and would take more risks in their gambling. He compared his subjects' scores on the Bell Adjustment Inventory to that instrument's standardization population. The results showed that the subjects were, in fact, better adjusted than the standardization population. Furthermore, while those subjects who manifested the poorest adjustment, as measured by that inventory, did have a greater tendency to believe in luck and superstition, they did not take more risks or lose more money than the better adjusted subjects.

Morris (1957) also attempted to find empirical support for the psychoanalytic theory of the dynamics underlying pathological gambling. He hypothesized that gamblers would be more insecure, more unhappy, feel less social responsibility, have a greater tendency to be dominant, have more feminine characteristics, and manifest a greater discrepancy between their opinion of themselves and how they think others see them than would non-gamblers. Using a

variety of measuring instruments, he found that his gambling subjects did, indeed, manifest a lower feeling of social responsibility, a greater tendency to dominate, and a greater discrepancy between how they saw themselves and how they thought others saw them. There was, however, no significant difference found in the level of happiness manifested by the gambling subjects and the control group. Furthermore, contrary to psychoanalytic theory, the gamblers proved to be more masculine and more secure than the control group. In further analysis, Morris divided his gambling sample into "thrill gamblers", "economic gamblers", and a "miscellaneous group" on the basis of a questionnaire. Although these subgroups were rather small, differences did emerge on the variables that were under consideration.

While the results from these empirical studies do not fully support the theories which they were intended to validate, there is a common thread running through them. That is the fact that there are differences among the gamblers that were studied. Thus, Hunter and Brunner (1928) found bi-modal distributions on their measures; McGlothlin (1954) found a relationship between those who showed the poorest emotional adjustment and the belief in luck and superstition; and Morris (1957) found differences among the three types of gamblers. Given these differences among gamblers, it would be surprising to find support for any theory on pathological gambling as long as the subjects for empirical research are

drawn from the general gambling population.

An alternative method of investigating pathological gambling would be to compare a group of admitted pathological gamblers with other specified groups. Roston (1961) attempted such a study by comparing a group composed of members of Gamblers Anonymous with a group of normal subjects and a group of psychiatric patients. Using hypotheses derived from psychoanalytic theory, he found that compared to the normal subjects, the pathological gamblers were "more hostile, aggressive, active, rebellious, magical in their thinking, and socially alienated." (p. 93). Furthermore, the pathological gamblers were found to demonstrate less ability to learn from experience and showed more obsessive and compulsive thinking, symptoms, and defenses than did the normal group. Comparison with the psychiatric patients indicated that the pathological gamblers were more active, expansive, and socially facile; and less anxious, worried and depressed.

While Roston's study does suggest that this type of approach may be fruitful, there are several difficulties with it. The first, and most important, is the possibility that there may be important differences between those pathological gamblers who seek treatment and those who do not. In fact, Roston's study indicates that this may be the case. During the course of his study 13 of the 30 Gamblers Anonymous subjects either returned to gambling or engaged in

some behavior which he felt was functionally equivalent (i.e., heavy drinking). He compared this group with the 17 subjects who had remained in remission. He found that those who had not kept their resolution to avoid acting out were even more rebellious, unconventional, and profitted less from experience than those who had remained in remission. There were also indications which while not statistically significant did suggest that those who continued to act out were more irrational and pathological in their personality structure. Thus, there do appear to be differences between those actively engaged in "treatment" and those for whom treatment is only a temporary expedient. It is questionable, therefore, whether active members of Gamblers Anonymous are representative of the entire population of pathological gamblers or whether there are special characteristics which lead them to seek help for their problem behavior.

A second difficulty in attempting to use pathological gamblers who are in some form of treatment is that, apparently, very few actually seek treatment. Bergler (1958) stated that the pathological gamblers he had seen were either forced into treatment by a spouse or parent, or had sought treatment for some other reason. Furthermore, they were likely to deny that gambling was a problem. His position is further supported by the fact that the membership of Gamblers Anonymous, the only organized source of treatment available, accounts for only about 1% of the estimated



number of pathological gamblers. Thus, the pool of declared pathological gamblers, active in self-help groups and, therefore, available for empirical research is relatively small.

Finally, an investigation such as the one done by Roston does not address itself to the question of whether pathological gamblers are different from the general gambling population. The evidence that there are different types of gamblers would suggest that this is, in fact, the case. However, Roston did not collect any information on the gambling habits and behaviors of his normal or psychiatric subjects. Therefore, there is no way of knowing if the differences which he found between his groups would generalize to a comparison of pathological gamblers with non-pathological gamblers.

#### Statement of the Problem

Pathological gambling can lead to personal and social problems of apparently major proportions. This behavior is, however, little understood either in terms of etiology, dynamics, or treatment. Despite the extent of the problem, the social sciences have exerted little effort in attempting to come to grips with it even though it is clearly within their area of inquiry. Various writers (e.g., Bloch, 1951 and Herman, 1967), attempting to explain the dearth of research on pathological gambling, have pointed to ethical, moral, and legal considerations which have inhibited scien-

tific study of the behavior. While it seems likely that these considerations have been a factor, it would appear that the virtual absence of any ready subject pool or even a means of reliably identifying subjects is of equal importance. It would appear, therefore, that research must be directed toward developing some means of identifying pathological gamblers. This study was undertaken in an attempt to identify and differentiate pathological gamblers from other types of gamblers and to gather additional information concerning the relationship between certain personality characteristics and personal gambling experiences and the incidence of different types of gambling behaviors in the general gambling population.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### The Differentiation of Types of Gamblers

There have been efforts to develop a taxonomy of the different types of gamblers. As with most of the literature in this area, these have generally been based on clinical cases and theoretical considerations rather than empirical research and may, therefore, be subject to sampling and theoretical biases. For example, Bergler (1958) listed six different types of gamblers, but then proceeded to explain that the differences were of a surface nature only and that the same neurotic processes were at the basis of each type. However, some empirical evidence has been collected which indicates that different types of gamblers can, indeed, be distinguished within the larger gambling population. Morris (1957) used a questionnaire to differentiate three types of gamblers: "Thrill gamblers", "economic gamblers", and a "miscellaneous group" which manifested neither the neurotic behavior of the thrill gamblers nor the profit motivation of the economic gamblers. He found significant differences in personality characteristics among the three types. Thus, the thrill gamblers tended to be more insecure, felt more isolated, and tended to be more feminine than the others.

The economic gamblers, on the other hand, showed the lowest feeling of social responsibility, and were more dominant, masculine, and persistent. The miscellaneous group tended to be secure, felt more open and close to others, and showed dominant rather than submissive characteristics. While he cautioned against overgeneralization due to his small sample sizes, Morris suggested that further research might refine his crude questionnaire.

More recently, Kusyszyn and Rubenstein (1971) conducted a study of betting behavior at two Canadian race tracks. They had their subjects complete a modified version of the Rotter Internal--External Locus of Control Scale (the six filler items and an item related to current performance in school were omitted) and a fifteen-item race track betting behavior questionnaire. No significant differences were found between the racegoers at the two tracks (one was harness racing and the other thoroughbred racing). The combined sample did score significantly more externally on the I-E Scale than the non-gambling samples reported in the literature. The authors interpreted this as confirmation that gamblers are greater believers in luck than non-gamblers. There were, however, no significant correlations between the I-E Scale and any of the items on the race track betting behavior questionnaire. This was contrary to their expectations. As a final step, a factor analysis was performed. Four factors were extracted which accounted for 41%

of the variance. These factors appeared to correspond to different patterns of gambling behavior. The factors and the representative types of behavior were as follows:

I---These individuals tended to be confident, practical, rational, and internally controlled.

Their behavior was tentatively labeled as Rational Gambling.

II--This group was characterized as carefree, fun loving gamblers who went to the track to enjoy themselves. They were tentatively labeled as Social Gamblers.

III-This group tended to be externally oriented, to bet more money when losing in order to recover losses, and to feel bad after losing. These were tentatively labeled as Pathological Gamblers.

IV--The final group was composed of System Playing Gamblers who went to the track to relax and relied on their "system" rather than on luck.

In performing the factor analysis, the authors treated the I-E Scale as a single variable, contributing no more or less to the correlation matrix than any of the items on the race track betting behavior questionnaire.

The classification proposed by Kusyszyn and Rubenstein in their study appears to find support in the earlier classification set forth by Morris (1957). Thus, Morris' economic gamblers are similar to the rational gamblers,

his thrill gamblers appear to correspond to the pathological gamblers, and Morris' miscellaneous group manifests characteristics similar to the social gamblers. The system playing gamblers identified in the Kusyszyn and Rubenstein study may be merely an artifact of the type of gambling which appears to lend itself to system play. For example, Ainslie (1968) in his book on handicapping thoroughbred racing has a chapter entitled "Seventy-seven Selected Systems" which he claimed to have culled from hundreds of systems which he had seen.

The similarity between the types of gamblers identified by Kusyszyn and Rubenstein and those identified by Morris suggests that the fifteen-item Race Track Betting Behavior Questionnaire along with the I-E Scale might provide a viable means of differentiating types of gamblers. Despite these promising findings, no further work with these instruments is reported in the literature. However, the present author, in an unpublished preliminary study, did find support for the factors identified by Kusyszyn and Rubenstein. The primary purpose of this preliminary study was to establish estimates of the reliability of the individual items on the Race Track Betting Behavior Questionnaire and of the four "scales" (i.e., the items which loaded on each factor). A sample of 28 subjects was collected at random at a race track. The modified I-E Scale and the Race Track Betting Behavior Questionnaire were administered to each subject. Two weeks

later, a second set of these instruments was mailed to each subject. Eighteen of the subjects returned this second set. Thus, a test-retest paradigm was used to establish the reliability of the items and scales. Kendall's Tau statistic was used to estimate reliability for the individual items, and the Pearson product-moment correlation coefficient was used to estimate reliability for the scales. In addition, a factor analysis using a Varimax Rotation was performed. Table 1 compares the results of the factor analysis by the original authors with that obtained by the present author, as well as presenting the reliability estimates which were obtained. While there are discrepancies between the two factor analyses, it was assumed that these were due to the small sample size in the preliminary study. The ratio of subjects to items in the study by the present author of 28:16 is well below the 5:1 ratio recommended by Gorsuch (1974) to assure reliability in a factor analysis. The ratio in the original study, on the other hand, was 175:16, well beyond the minimum ratio. Thus, it would seem that the results of the original study can be accepted as the more reliable of the two studies. However, the fact that there is a considerable amount of agreement between the two factor analyses suggests that the four factors are, in fact, stable. Furthermore, reliability estimates for the four scales ranging between .68 and .83 indicate an acceptable degree of reliability.

The preceding studies suggest that it is possible to

Table 1

Results of the Preliminary Study by Conrad Compared  
with the Original Study by Kusyszyn and Rubenstein (1971)

	Kendall's <u>tau</u> <u>N</u> = 18	Kusyszyn and Rubenstein's Factors <u>N</u> =175	Conrad's Factors <u>N</u> = 28
Rational Gambler Scale		Factor I	Factor I
<u>N</u> = 18 <u>r</u> = .76***		egv = 2.03	egv = 2.34
When I go to the track I am confident of winning	.56	.67	.22
I study the racing form or program	.47	.66	.15
I-E Locus of Control	.68	-.37	.73
I feel the races are fixed	.68	-.56	-.63
Social Gambler Scale		Factor II	Factor III
<u>N</u> = 18 <u>r</u> = .82***		egv = 1.68	egv = 1.32
I bet to win	.63	.73	.81
The amount I bet is affected by the odds	.67	.53	-.28
Luck is important for winning at the track	.62	.38	-.28
I bet on every race	.91	.37	.12
I go to the track to relax	.54	.32	.17
I bet to show	.82	-.63	-.56

(continued)



Table 1 (continued)

	Kendall's <u>tau</u> <u>N</u> = 18	Kusyszyn and Rubenstein's Factors <u>N</u> =175	Conrad's Factors <u>N</u> = 28
Pathological Gambler		Factor III	Factor II
Scale <u>N</u> = 18 <u>r</u> = .68***		egv = 1.59	egv = 1.62
Other people change my mind about the horse I wanted to bet	.52	.67	.61
I feel bad after I have a losing day	.73	.56	.06
When I am down money I bet more to try to get it back	.73	.50	.80
I bet less when the track is slow or sloppy	.33	.41	-.03
I bet on tips from trainers, friends, etc.	.56	.38	.39
I-E Locus of Control	.68	.32	-.08
I bet on every race	.91	.30	.30
System Playing Gambler		Factor IV	Factor IV
Scale <u>N</u> = 18 <u>r</u> = .83***		egv = 1.30	egv = 1.24
I have a "system"	.78	.74	.97
I go to the track to relax	.54	.48	-.06
I bet less when the track is slow or sloppy	.33	.35	.13
Luck is important for winning at the track	.62	-.46	-.14

\*\*\* p &lt; .001

differentiate at least three, and possibly four, distinct types of gamblers. Further support for such a distinction is found in a study by Martinez and LaFranchi (1969). Working as dealers at a commercial card club over a period of four years, they were able to closely observe and informally interview a number of poker players. They classified players into four categories based primarily on their relative success or failure in the game. Since one of the outstanding features of the pathological gambler is that he loses more money than he can afford, the results of this study take on added importance. While the concept of "losing more than one can afford" is quite subjective, it appears plausible that different types of gamblers would attain differing degrees of success or failure in their play. In fact, the findings by Martinez and LaFranchi closely parallel those reported above. Thus, those who were consistent "winners" were characterized by a rational, confident approach to play, exerting patience, self-control, and not relying on luck. This group corresponds to Kusyszyn and Rubenstein's rational gamblers. Similarly, the "break-evens" appeared to try to play a rational game, but lacked the ability or self-control demonstrated by the winners. As a group, they gambled less frequently and appeared more satisfied with their jobs and marital situation than the other groups. This group, therefore, seems to correspond to Kusyszyn and Rubenstein's social gamblers. The other two groups identified by Martinez and LaFranchi, "los-

ers" and "action players", are similar to the pathological gamblers identified by Kusyszyn and Rubenstein. These two groups shared in common the fact that they were consistent losers. The primary difference was that the action players seemed to play to lose, while the losers appeared to try to win. A second distinction was that the action player could afford his losses, while the losers often could not. The action players apparently used gambling as a means to release tension. The loser, on the other hand, was seeking status. His great desire to win, however, seemed to distort his perception of his true chance of doing so and led him into making foolish mistakes. He appeared to be socially isolated and used poker as a form of compensation or escape from anomie social relations. It would appear, therefore, that the three types of gamblers common to these studies can be differentiated from one another not only in terms of personality characteristics, but also in terms of the relative amount won or lost. Using the amount won or lost as a continuum, it would appear that the extremes are represented by the rational gambler and the pathological gambler respectively, with the social gambler falling in the middle region.

Table 2 summarizes the findings of the studies cited above. While there are differences seen in the characteristics used to describe the different types of gamblers, these differences seem to arise from different methodologies and different measuring techniques. In fact, given the differ-

Table 2

Characteristics of Different Types of Gamblers

	Rational	Social	Pathological
Kusyszyn and Rubenstein (1971)	Confident, practical rational, and internally controlled	Carefree, fun loving and gamble to enjoy themselves	Externally oriented, bet more when losing, and feel bad after a losing day
Morris (1957)	Dominant, low feeling of social responsibility, masculine, and persistent	Secure, open and close to others, and dominant rather than submissive	Insecure, isolated, and feminine
Martinez and LaFranchi (1969)	Rational, confident, patient, exert self-control, no reliance on luck, and consistent winners	Gamble less frequently, satisfied with job and marital situation, try to play a rational game, and break even in their game	Either play to lose or have a distorted perception of their chances, use poker to release tension, believe in luck, and tend to be dissatisfied or socially isolated

ences in methodology and measurement, the amount of agreement on the characteristics of different types of gamblers found in these studies lends added support to a trichotomization of the gambling population.

Additional support for the results of the studies cited above can be found in a study by Roston (1961). In his study, he compared a group of admitted pathological gamblers (i.e., members of Gamblers Anonymous) with a control group of normal individuals drawn from the parents at a school and a group of psychiatric patients. Each group contained 30 subjects. Each subject was administered the MMPI and a slightly modified Rotter Level of Aspiration Board (the instructions were modified so as not to induce high ego involvement on this task). While this study dealt only with pathological gamblers, the personality characteristics Roston reported for these individuals were similar to those used to describe pathological gamblers by Morris (1957), Kusyszyn and Rubenstein (1971), and Martinez and LaFranchi (1969). Thus, Roston found that his group of pathological gamblers was more hostile, aggressive, rebellious, magical in their thinking, and socially alienated. Furthermore, the pathological gamblers were found to demonstrate less ability to learn from experience and showed more obsessive and compulsive thinking, symptoms, and defenses than did the normal group.

#### Clinical Literature Related to Pathological Gambling

The clinical literature also points to some characteristics which are frequently found in the pathological gambler. Of particular interest to the present study are reports of personal gambling experiences which might lead to an increased possibility of pathological gambling. Moran (1970) for example, found that in 21 of 50 cases which he had seen, there was a history of heavy gambling by one or both of the individual's parents. Bolen and Boyd (1968), found similar family histories and suggested that pathological gambling might, in some cases, be an effort on the part of the individual to identify with a parent who gambled. Seager (1970), while not finding a consistent history of heavy gambling in his patients' families, did find that social gambling was common in the family background of most of the pathological gamblers with whom he had worked. It does seem likely, therefore, that the pathological gambler's early experiences do include exposure to gambling in his family of origin. However, without corresponding data from non-pathological gamblers, it is not possible to specify that this is a key factor in the development of pathological gambling behavior.

A second characteristic of the pathological gambler that is found in the clinical literature is a history of a "big win" at some point in his gambling career. Thus, Custer (1976) reported that for the individuals he had worked with, there was usually at least one gambling episode in which there was a large amount of money won. This would tend to

support current thinking that pathological gambling is a complex learned behavior that is quite resistant to extinction (Coleman, 1976). In fact, Levitz (1971) reported that he was able to establish behavior similar to pathological gambling in normal subjects by manipulating winning and losing during an experimental period. Again, no evidence is available concerning the incidence of a big win in the gambling history of non-pathological gamblers and it is not, therefore, possible to state categorically that this is a significant factor in the development of pathological gambling behaviors.

#### Risk Taking Related to Pathological Gambling

In addition to the empirical and clinical studies cited, information relevant to the area of pathological gambling is found in the literature on risk taking. Of particular relevance is a study by Kogan and Wallach (1964) who investigated decision making and risk. While the subjects were a group of college students, the study did use a gambling paradigm and the subjects did have the opportunity to risk relatively large amounts of their own earnings. Among the factors that were investigated were the effects of two moderating variables, anxiety and defensiveness, on the behavior of the subjects. Anxiety was determined by the Alpert-Haber Anxiety Scale, and defensiveness was measured on the Crowne-Marlowe Social Desirability Scale. The authors' rationale for selecting these moderating variables, along with the re-

sults attained, appear to have direct bearing on the characteristics of different types of gamblers. In defining defensiveness, as measured by the Crowne-Marlowe Social Desirability Scale, the authors stated that a high score is indicative of a strong need on the part of the individual to appear in what he perceives as a socially desirable light in the eyes of others. Similarly, a high score on the Alpert-Haber Anxiety Scale was seen as an indication of a strong need to succeed, particularly where one's ability is in question. Each factor was seen as a source of motivation which, in its extreme, could actually inhibit performance.

A median split on the two measures yielded four subgroups. The results showed significant differences between those who were most motivationally disturbed (i.e., those who scored high on both measures) and the least motivationally disturbed group (i.e., those who scored low on both scales). For the least disturbed group, the decision to be either risky or conservative in a situation was determined largely by the characteristics of the situation. Their behavior, therefore, was cognitively determined (i.e., rational), and thus, tended to be flexible and adaptive in nature. The sub-group high on both variables, conversely, seemed to respond more to motivational demands and tended to adopt an overgeneralized approach to decision making (i.e., either consistently risky or consistently conservative), disregarding situational demands. To the extent that situational characteristics were



ignored, the behavior of the subject was likely to be more rigid and less adaptive. Some overgeneralization occurred for the remaining sub-groups. For the high anxious-low defensive group, disregard of situational characteristics was found for tasks of a manifest problem solving nature. For the low anxious-high defensive group, overgeneralization was seen when the decision was made in interpersonal settings.

When the clinical literature on pathological gambling is compared with the Kogan and Wallach study, it is seen that both factors under consideration in that study are believed to be operating in the pathological gambler. For example, Livingston (1974) spent two years with a Gamblers Anonymous group. One of the outstanding characteristics which he observed was a strong desire on the part of the members for the admiration of others. Similarly, Scodel (1967) reported that in his work with a Gamblers Anonymous group, he detected a subtle, but real class distinction among members determined by the amount of money the individual had managed to lose during his gambling career. He interpreted this as an indication of a continued need for status (i.e., social approval) by the recovered gambler. The psychoanalytic theorists (e.g., Bergler, 1958; Gladstone, 1967; etc.) as well as other writers (e.g., Moran, 1970) point to anxiety as a key factor in pathological gambling and feel that the pathological gambler views winning or losing as a reflection of his ability, not just a matter of luck.

It would seem, therefore, that the characteristics identified by Kogan and Wallach as indicative of motivational disturbance are also consistently found in pathological gamblers. That is defensiveness, as represented by the need for social approval, and anxiety appear to be characteristics common to pathological gamblers. Furthermore, the behavior of the pathological gambler certainly appears to be maladaptive in that he continues to gamble despite what are frequently disastrous losses, does not stop when he is ahead, and appears to be drawn more to the gambling, itself, than to winning or losing. The rational gambler, on the other hand, seems to correspond to the least disturbed group in the Kogan and Wallach study. The other two subgroups may correspond to the social gambler, although the relationship, if it exists, is not a clear one.

Further support for the similarity between Kogan and Wallach's high and low disturbed groups and pathological and rational gamblers is found in a study by Alker (1969). Using the same instruments used in the Kogan and Wallach study, he found that individuals low on the characteristics of anxiety and defensiveness were more capable of learning from their mistakes and modifying their behavior accordingly than could the highly motivationally disturbed group.

Finally, a study by Cameron and Myers (1966) offers some support for the application of the Kogan and Wallach findings to the area of pathological gambling. Again, risk

taking was under consideration, but the subjects had the opportunity to bet and could both win and lose money. They found that subjects who preferred bets with a high payoff, but a low probability (i.e., risky bets) were high in exhibitionism, aggression, and dominance as measured by the Edwards Personality Preference Schedule. They proposed that these characteristics reflect needs that seem to operate primarily in relation to other people. These needs seem, therefore, to be similar to that characterized by the concept of social desirability, which also operates in relation to other people and which Kogan and Wallach used to distinguish their motivationally disturbed groups. Those subjects in the Cameron and Myers study who chose a more conservative course were characterized by autonomy and endurance and are, thus, similar to the rational gambler or Kogan and Wallach's low motivationally disturbed group.

### Overview and Hypotheses

While several studies (i.e., Kusyszyn & Rubenstein, 1971; Martinez & LaFranchi, 1969; and Morris 1957) have demonstrated that it is possible to differentiate several types of gamblers, only one, that by Martinez and LaFranchi, actually associated the type of gambler with some objective criterion (i.e., the amount of money won or lost). At the same time, this study was more observational than the other two and less well controlled. The validity of the various

classifications has not, therefore, been clearly established. Furthermore, personal gambling experiences which have been associated with pathological gambling, a history of gambling by the individual's parents and a history of a big win in the individual's own gambling history, have not been shown to occur with any special significance merely because comparable data has never been collected for groups of non-pathological gamblers. Finally, personality characteristics which appear to have a relationship to pathological gambling, anxiety and defensiveness, have not been assessed in any in vivo situations. Thus, while there is research which suggests that it is possible to identify different types of gamblers and to specify certain personality characteristics and personal gambling experiences that would be expected with each type of gambler, there has been no empirical verification. It is felt that if such verification can be supplied, it may lead to additional research in this crucial area. The present study was undertaken, therefore, in an attempt to supply such verification.

In the present investigation, four types of gamblers--rational gamblers, social gamblers, pathological gamblers, and system playing gamblers--were identified within a sample of actively gambling individuals obtained at several race tracks. Further, information concerning each subject's level of anxiety, level of defensiveness, the incidence of a big win in his own gambling history, and the incidence of

gambling by his parents was also collected. Finally, the same information was collected from a random sampling of the general population and from a group of individuals who had sought treatment for pathological gambling.

The information collected from these various groups was analyzed along a number of dimensions. First, an effort was made to establish that those subjects from the race track sample who were identified as pathological gamblers manifested the same personality characteristics and had undergone the same gambling experiences as the group of admitted pathological gamblers (i.e., those subjects who had sought treatment for pathological gambling). The following null hypotheses were made:

- 1) There is no difference between the Admitted Pathological Gamblers and the Identified Pathological Gamblers in the level of anxiety.
- 2) There is no difference between the Admitted Pathological Gamblers and the Identified Pathological Gamblers in the level of defensiveness.
- 3) There is no difference between the Admitted Pathological Gamblers and the Identified Pathological Gamblers in the incidence of a big win in their gambling histories.
- 4) There is no difference between the Admitted Pathological Gamblers and the Identified Pathological Gamblers in the incidence of gambling by their

parents.

While those subjects in the race track sample identified as social gamblers endorse different items than those identified as system playing gamblers, there is one item in common; they both go to the track to relax. Furthermore, as noted previously, the system playing gambler may be an artifact of the type of gambling involved. It seemed plausible, therefore, that in terms of the personality characteristics under consideration, these two groups would be identical. Furthermore, it was felt that the two groups combined would not be significantly different from the control group sampled from the general population. Therefore, the following null hypotheses were made:

- 5) There is no difference between the Identified Social Gamblers and the Identified System Playing Gamblers in the level of anxiety.
- 6) There is no difference between the Identified Social Gamblers and the Identified System Playing Gamblers in the level of defensiveness.
- 7) There is no difference between the combined Identified Social/System Playing Gamblers and the Control Group in the level of anxiety.
- 8) There is no difference between the combined Identified Social/System Playing Gamblers and the Control Group in the level of defensiveness.

While it was expected that the identified pathological

gamblers would be the same as the admitted pathological gamblers on the measures of anxiety and defensiveness; and the identified social gamblers, the identified system playing gamblers and the control group would be the same on these measures; significant differences were expected when these two combinations of groups were compared. The following hypotheses were made:

- 9) The combined Identified Pathological/Admitted Pathological Gamblers will have a significantly higher level of anxiety than will the combined Identified Social/System Playing Gamblers/Control Group.
- 10) The combined Identified Pathological/Admitted Pathological Gamblers will have a significantly higher level of defensiveness than will the combined Identified Social/System Playing Gamblers/Control Group.

It was expected that the subjects identified as rational gamblers in the race track sample would manifest the least motivational disturbance on the two personality characteristics under consideration of any of the groups. Thus, this group was compared with the other five groups combined. The following hypotheses were made:

- 11) The Identified Rational Gamblers will have a significantly lower level of anxiety than the other five groups combined.

- 12) The Identified Rational Gamblers will have a significantly lower level of defensiveness than the other five groups combined.

While it was felt that the rational gamblers and the pathological gamblers were likely to represent the extremes on the personality characteristics under consideration, the same was not expected to be true in terms of personal gambling experiences. It was assumed that both groups would invest a considerable amount of time and effort in their gambling activities, while the remaining types of gamblers, since they gambled for enjoyment, would spend relatively less time and energy. It seemed likely that one's learning experiences would play a major role in this area regardless of whether one was a rational gambler or a pathological gambler. The following null hypotheses were, therefore, made:

- 13) There is no difference between the Identified Rational Gamblers and the combined Identified/Admitted Pathological Gamblers in the incidence of a big win in their gambling histories.
- 14) There is no difference between the Identified Rational Gamblers and the combined Identified/Admitted Pathological Gamblers in the incidence of gambling by their parents.

An attempt was also made to establish that the group of admitted pathological gamblers was, in fact, different from the control group and the combined race track sample



in terms of their personal gambling experiences. Since it was likely that a number of the subjects in the control group would have had no personal experience with gambling, no comparison was made of this group with the admitted pathological gamblers in terms of the incidence of a big win in their gambling histories. However, the following hypotheses were made:

- 15) The Admitted Pathological Gamblers will have a significantly higher incidence of gambling by their parents than will the Control Group.
- 16) The Admitted Pathological Gamblers will have a significantly higher incidence of gambling by their parents than will the Total Race Track Sample.
- 17) The Admitted Pathological Gamblers will have a significantly higher incidence of a big win in their own gambling histories than will the Total Race Track Sample.

In addition to the above hypotheses, information was available concerning the degree of externality of the various groups. Since this was a factor in determining the identified groups within the race track sample, it was not appropriate to use these groups in any comparison of this factor. However, it was possible to compare the admitted pathological gamblers, the total race track sample, and the control group on this measure. The following hypotheses

were, therefore, made:

- 18) The Admitted Pathological Gamblers will have a significantly higher degree of externality than the Total Race Track Sample.
- 19) The Admitted Pathological Gamblers will have a significantly higher degree of externality than the Control Group.

The various hypotheses made above allowed for the statistical analysis of the relationship of three personality characteristics--anxiety, defensiveness, and externality--and two types of personal gambling experiences--history of a big win and history of gambling by the individual's parents--to the gambling behaviors manifested by various groups of subjects. The predicted outcomes are shown in Table 3.

In addition to the information needed to test the above hypotheses, various types of demographic data and personal gambling histories were collected from each subject in order to develop "profiles" of each of the four types of identified gamblers and the admitted pathological gamblers, and to supply information relevant to their gambling behaviors and experiences.

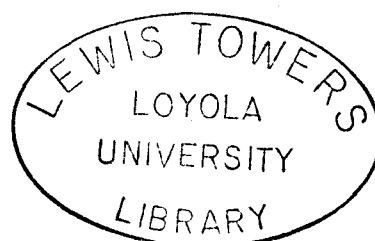


Table 3

Predicted Outcomes on the Various Personality Characteristics  
and Personal Gambling Experiences for the Groups Under Consideration

	History of a "Big Win"	Gambling by Subject's Parents	Defensiveness	Anxiety	Externality
Admitted Pathological Gamblers	High	High	High	High	High
Identified Pathological Gamblers	High	High	High	High	N/A
Identified Rational Gamblers	High	High	Low	Low	N/A
Identified Social Gamblers	Low	Low	Moderate	Moderate	N/A
Identified System Playing Gamblers	Low	Low	Moderate	Moderate	N/A
Total Race Track Sample	Low	Low	Moderate	Moderate	Moderate
Control Group	N/A	Low	Moderate	Moderate	Moderate

## CHAPTER III

### METHOD

#### Subjects

The design used in the present investigation required that subjects be drawn from three different populations. The main population under consideration consisted of those individuals who were actively gambling at two thoroughbred race tracks and two harness race tracks. A sample of 334 subjects was obtained from this population. To get this sample, 1214 race track patrons were approached with the request that they participate in a research project on gambling. Of this number, 1016 agreed to participate. Thus, 83.7% of the patrons who were approached actually agreed to participate, and of those who agreed to participate, 32.9% followed through.

As the data on this sample were being collected, it was noted that the sample appeared to have a bias toward young, white, male subjects. In order to verify if such a bias existed, it was decided to collect, by means of observation, information concerning race, sex, and approximate age on a random sample of 100 patrons at each race track. Before this procedure could be implemented, however, one of the race tracks burned down. This track, from which 44.6%

of the race track sample was obtained, was the only suburban race track of the four that were sampled, and seemed to have a higher proportion of white patrons than the other three. There was, however, no way to verify this impression. The information on race, sex, and approximate age was collected at the remaining race tracks and is presented, along with comparable information for the actual race track sample in Table 4. Using the Pearson  $\chi^2$  statistic, it was found that there was a significant bias toward younger subjects ( $p < .001$ ) and an even stronger bias toward white subjects. There was no significant difference found in terms of sex. While similar data from the fourth race track might have altered the ratio of white to black patrons, it is felt that the change would not have been substantial enough to account for the strong racial bias that was found in the race track sample. Further, it is felt that data from the fourth race track would not have changed the age ratio that was found at the other three tracks. It may be assumed, therefore, that both black and older patrons are under-represented in the actual sample of race track patrons used in this study.

The influence of a second factor must also be taken into consideration. The race track sample was collected during the period from December 1, 1976, through March 5, 1977, with the majority of the subjects being obtained between January 1, 1977, and February 8, 1977. This was during the middle of the coldest winter on record ("Our 43-day freeze

Table 4

Comparison of the Actual Race Track Sample with a  
Random Sampling of Race Track Patrons on the  
Variables of Race, Sex, and Approximate Age

	Actual Race Track Sample	Random Sampling of Race Track Patrons	
<b>Race</b>			
White	298	130	$\chi^2 (1) = 151.71$
Black	36	170	$p < .001$
<b>Sex</b>			
Male	268	239	$\chi^2 (1) = .03$
Female	66	61	$p > .88$
<b>Age</b>			
Under 35	210	124	$\chi^2 (2) = 34.96$ $p < .001$
35 to 50	78	126	
Over 50	46	50	

ends", 1977). At no time during this period did the temperature rise above the freezing level and it rarely rose above 20°. While the exact effect of these sub-freezing temperatures is unknown, it seems plausible to assume that those patrons in attendance at the race tracks during this period represent, on the average, much more dedicated gamblers than would be found at a race track in the middle of July.

Within the race track sample, particular interest was directed toward those subjects who met the criteria for inclusion in one of the four sub-groups. These sub-groups and the number of subjects in each were as follows:

Identified rational gamblers--N = 23

Identified social gamblers--N = 21

Identified pathological gamblers--N = 22

Identified system playing gamblers--N = 20

The biases found in the total race track sample were also found in each sub-group, with blacks and older patrons being under-represented.

The second population under consideration consisted of patrons at two shopping centers, one suburban and the other urban. This group, labeled the control group, contained 35 subjects. To obtain this number of subjects, 74 patrons were approached. Of these, 60 agreed to participate. Thus, 81% of those approached actually agreed to participate, and 58.3% of those who agreed to participate actually followed through. It was decided to solicit the participation

of 60 shopping center patrons since it was assumed that the return rate would approximate that for the race track sample. Thus, it was expected that the control group would contain approximately 20 subjects and would be equal in size to the other groups under consideration. The actual size of the control group, being larger than expected, would not appear to invalidate any of the results.

The final group, referred to in this investigation as admitted pathological gamblers, consisted of members of Gamblers Anonymous. This group contained 21 subjects, representing 60% of the 35 Gamblers Anonymous members who agreed to participate. With this final group, the request for participation was made by the leaders of the different Gamblers Anonymous groups in the Chicago area. There was no direct contact with the members of Gamblers Anonymous.

Table 5 summarizes the composition of each of the three samples for the variables of age, race, and sex. The admitted pathological gamblers were significantly older than both the race track sample and the control group ( $p < .001$  and  $p < .005$ , respectively). There was no significant difference between the race track sample and the control group. No significant difference among the three groups was found in terms of their racial composition. Differences in sexual composition did approach significance ( $p < .08$ ). This seems to be due to the fact that there are no female subjects in the admitted pathological gambler group. A Pearson  $\chi^2$



Table 5  
 Comparison of the Three Samples on the  
 Variables of Race, Sex, and Age

	Control Group	Race Track Sample	Admitted Pathological Gamblers	
<b>Race</b>				
White	33	298	20	$\chi^2 (2) = 1.58$
Black	2	36	1	$p > .45$
<b>Sex</b>				
Male	28	268	21	$\chi^2 (2) = 5.11$
Female	7	66	0	$p < .08$
<b>Age</b>				
<u>N</u>	35	334	21	
Mean	32.89	33.52	42.29	
<u>SD</u>	11.97	12.33	11.25	
Control by Race Track:			$t (367) = .30,$	$p > .36$
Control by Pathological:			$t (54) = 2.96,$	$p < .005$
Race Track by Pathological:			$t (353) = 3.45,$	$p < .001$

statistical analysis indicated no difference in sexual composition between the race track sample and the control group. The admitted pathological gamblers, therefore, do appear to be different from the other two samples on the variables of age and sex.

### Materials

The materials used to collect the data for this research consisted of five questionnaires (see Appendix A) along with appropriate cover letters (see Appendix B) which contained general information and instructions concerning the questionnaires and the purpose of the research. The cover letters varied slightly from sample to sample due to differences in the populations that were being sampled.

The questionnaires were as follows:

- 1) The Race Track Betting Behavior Questionnaire--  
This is the instrument developed by Kusyszyn and Rubenstein (1971). It consists of fifteen items dealing with various race track betting behaviors. The subject was instructed to indicate, by checking on a Likert Scale, whether he engaged in a given behavior: almost always, often, sometimes, seldom, or almost never.

This questionnaire was chosen for the present research because the factor analysis done by its authors indicated that different types of gam-

blers would respond differently to the items on it. Also, the preliminary study by the present author found that the four scales, each composed of those items which loaded significantly on a given factor, had acceptable levels of reliability ranging from .68 to .83.

Each item on each scale was assigned a score from 1 to 5 depending on which of the five choices the subject had checked. When an item had a positive loading on a factor, the response of "almost always" was scored as a 5, "often" was scored as 4, and so forth. However, when an item had a negative factor loading, the scoring was reversed so that "almost always" received a score of 1, "often" received a score of 2, and so forth. For the purpose of determining a subject's score on the rational and pathological scales, it was necessary to convert his raw score on the I-E Scale to a range of 1 to 5, since the I-E score is treated as an item on these two scales. Scoring on each of the four scales was cumulative with each item considered equivalent to every other item on that scale. The possible ranges and scoring procedure for each scale are reported in Table 6.

## 2) The Internal-External Locus of Control Scale

Table 6  
 Procedure used for Scoring Responses on  
 the Race Track Betting Behavior Questionnaire

	Almost Always	Often	Some- times	Seldom	Almost Never
<b>Rational Gambler Scale</b>					
range = 4 to 20					
When I go to the track I am confident of winning	5	4	3	2	1
I study the racing form or program	5	4	3	2	1
I feel the races are fixed	1	2	3	4	5
I-E Scale	≤6=	7-9=	10-11=	12-13=	≥14=
Raw Score	5	4	3	2	1
Converted					
<b>Social Gambler Scale</b>					
range = 6 to 30					
I bet to win	5	4	3	2	1
The amount I bet is affected by the odds	5	4	3	2	1
Luck is important for winning at the track	5	4	3	2	1
I bet on every race	5	4	3	2	1
I go to the track to relax	5	4	3	2	1
I bet to show	1	2	3	4	5
(continued)					

Table 6 (continued)

	Almost Always	Often	Some- times	Seldom	Almost Never
Pathological Gambler Scale					
range = 7 to 35					
Other people change my mind about the horse I wanted to bet	5	4	3	2	①
I feel bad after I have a losing day	⑤	4	3	2	1
When I am down money I bet more to try to get it back	5	4	③	2	1
I bet less when the track is slow or sloppy	⑤	4	3	2	1
I bet on tips from trainers, friends, etc.	5	④	3	2	1
I bet on every race	5	4	3	②	1
I-E Scale    Raw Score	≤6=	7-9=	10-11=	12-13=	≥14=
Converted	1	2	3	4	⑤
System Playing Gambler					
Scale    range = 4 to 20					
I have a "system"	5	4	③	2	1
I go to the track to relax	5	4	3	2	①
I bet less when the track is slow or sloppy	⑤	4	3	2	1
Luck is important for winning at the track	1	②	3	4	5

(Rotter, 1966)--In the present study, the I-E Scale employed the same modifications used by Kusyszyn and Rubenstein (1971). That is, the six filler items and an item related to the subject's present performance in school were deleted. The modified I-E Scale, therefore, consisted of 22 items. Each item contained two statements. The subject was instructed to indicate which of the two statements he believed to be more true. In order to somewhat disguise the purpose of this questionnaire, it was referred to, in this study, as the Personal Belief Questionnaire (I-E). Each item that was marked in the external direction received a score of one. Scoring was cumulative with a possible range from 0 to 22. The raw score was used in comparing the degree of externality for the three sample populations. In addition, since the I-E Scale, in a converted form (see above), is used as an item on two of the four gambler scales, it is intimately involved with the identification of the four subgroups in the race track sample.

- 3) The Crowne-Marlowe Social Desirability Scale (1960)--This scale contains 33 items. The subject was asked to indicate whether each item was true or false of his attitudes and behaviors.

Each item that was marked in the direction of social desirability was scored as 1. Scoring was cumulative with a possible range of 0 to 33. In this study, the Social Desirability Scale is referred to as the Personal Reaction Inventory (C-M).

As in the study by Kogan and Wallach (1964), this scale is used as a measure of defensiveness in the present study. The rationale for its use was essentially the same as that proposed by Kogan and Wallach. A high score on this scale was assumed to indicate defensiveness in that the subject had endorsed items concerning his attitudes and behaviors which, while socially desirable, were unlikely to be endorsed by a person who was trying to present a true picture of himself. In addition, the scale is counter-balanced in terms of the direction of scorable responses. This helped to mask the purpose of the scale.

- 4) The S-R Inventory of Anxiousness (Endler, Hunt, and Rosenstein, 1962)--This scale was used as a measure of anxiety in place of the Alpert-Haber Anxiety Scale (1960), used by Kogan and Wallach. The latter scale relates specifically to test anxiety and was not, therefore, an appropriate measure for the subjects in this study, most of

whom had not been in school for some time. The S-R Inventory of Anxiousness, referred to in this study as the Inventory of Attitudes Toward Specific Situations, asks the subject to indicate the degree to which he experiences fourteen different indicators of anxiety (e.g., increase in heart rate, a feeling of exhilaration, a feeling of nausea) in a specific anxiety arousing situation. Three such situations were used in the present study: You are getting up to give a speech before a large group; you are entering a competitive contest before spectators; and you are going into an interview for an important job. In a factor analysis of this inventory, the original authors found that these three situations had significant factor loadings on the first factor (from .71 to .80) which they designated as anxiety in interpersonal situations. This was differentiated from two other factors which were labeled as anxiety aroused by inanimate dangers (e.g., you are starting out in a sailboat in a rough sea) and an ambiguous factor. Furthermore, these three situations were found to have reliabilities ranging from .74 to .83. In labeling their first factor anxiety in interpersonal situations, the authors stated that suc-



cess or failure in one of these situations was primarily of a psychological nature. It would appear, therefore, that these items are similar to the situation found with test anxiety as on the Alpert-Haber Anxiety Scale. In fact, an item on the S-R Inventory relating to anxiety in a test taking situation also loaded significantly on Factor I, although less significantly than the three used in the present study.

The authors found that the fourteen indicators had reliabilities ranging from .56 to .89. The three indicators with the lowest reliability were those referring to the facilitative aspects of anxiety. Since it was desirable to have some items dealing with the facilitative aspects of anxiety to partially mask the purpose of the inventory, these three items were retained.

For each of the fourteen indicators of anxiety, the subject was asked to indicate on a 5-point continuum ranging from "not at all" to "very much so", the extent to which he experienced that indicator in the given situation. Scoring was cumulative with a possible range of 42 to 210.

- 5) The final measure in this study is referred to as the Personal Information Survey--It was designed to collect three kinds of information. First, it

collected information of a demographic nature (e.g., age, sex, and years of education). This information was used to develop profiles of the different types of gamblers. Secondly, there was a section requesting information concerning the subject's own gambling history. The information in this section was also used in developing the profiles. More importantly, it was from a question in this section that the incidence of a big win in the subject's gambling history was established. Finally, there was a section referring to the incidence of gambling by various members of the subject's family of origin. It was from this section that the incidence of gambling by the subject's parents was determined.

### Procedure

The participation of all subjects in this research was voluntary. For both the race track sample and the control group, the request for participation in the study was made either by the present investigator or by one of two assistants. It was felt that having more than one interviewer approaching prospective subjects would help to randomize any biases of or toward a given interviewer. Further, the interviewers were stationed in different areas of the race track or shopping center and rotated from area to

area. Finally, each interviewer began by approaching the fifth individual that was encountered. The interviewer then proceeded to approach the fifth individual encountered after the completion of each interview. The exception to this procedure was that no prospective subjects were approached at the race track during the three minutes preceding a race or during the race itself. This was done to avoid antagonizing anyone rushing to make a bet or watching a race.

In obtaining subjects for the race track sample, two different approaches were used. The original method of approach was as follows:

Hello. I'm conducting a survey as part of a dissertation research project at Loyola University. Do you mind if I speak to you for a minute?

If the prospective subject agreed, the interviewer proceeded in the following manner:

The survey is designed to determine what relation, if any, exists between a person's experiences with gambling and his personal beliefs, attitudes, and opinions. If you agree to participate in the survey, you will be sent a set of five questionnaires which you are asked to fill out and return. The questionnaires are fairly short and should take only about forty-five minutes to complete. Would you be willing to participate?

If the interviewee agreed to participate at this stage, the interviewer said:

I will need your name and address in order to mail the questionnaires to you. Let me assure you, however, that your name and address will be used only for the purposes of this survey and will be destroyed as soon as the surveys are returned.

Thank you for your cooperation.

If the interviewee requested further information concerning the nature of the questionnaires, he was allowed to look at a sample copy that the interviewer had.

A set of questionnaires was then mailed to each subject along with the appropriate cover letter. If the survey was not returned within thirty days, a second mailing was sent. This included a second set of questionnaires, the cover letter, and a second letter (see Appendix B) urging the subject to complete the questionnaires and return them. If the second set of questionnaires was not returned, no further effort was made to contact that subject.

This procedure was used because it was similar to that used by the present author in his preliminary study. In the preliminary study, this approach had been well received by potential subjects (87% of those approached, agreed to cooperate). Further, the rate of return in the preliminary study was 68.3%. In the present study, on the other hand, this approach was not well received. Of the 151 prospective subjects who were approached using this procedure, only 56 were willing to participate. Further, of the 56 who agreed to participate, only 26 subjects actually returned the completed questionnaires. Finally, there was a marked racial and age bias in terms of those prospective subjects who agreed to participate. This bias was in favor of younger, white patrons.

There were two major differences between the proced-

ure used in the preliminary study and that outlined above for the present study. First, in the preliminary study, subjects were actually given a set of questionnaires to take with them rather than just being asked for a name and address to which the questionnaires would be mailed. Secondly, only two questionnaires, the Race Track Betting Behavior Questionnaire and the I-E Scale, were used in the preliminary study as opposed to the five questionnaires used in the present study. Thus, subjects in the present study were being asked to spend considerably more time and effort on the questionnaires than were the subjects in the preliminary study.

Due to the difficulties encountered with the approach outlined above, it was deemed necessary to make several changes. First, the greatest difficulty with the original procedure appeared to be the suspiciousness that was aroused in prospective subjects when they were asked to give their names and addresses without receiving any solid evidence of the legitimacy of the survey. It was decided, therefore, that prospective subjects would be given the surveys at the time that they agreed to participate. This eliminated the need to obtain a prospective subject's name and address and greatly reduced suspiciousness about the survey. This change increased the rate of agreement to participate to 90%, more than double the rate found with the original procedure.

While the change noted above did greatly increase the percentage of those prospective subjects who agreed to cooperate, it was felt that the subject's commitment was much lower than with the original procedure. It was feared that the rate of return might drop off appreciably. Therefore, in order to keep the rate of return relatively high, it was decided to offer the prospective subjects a chance to win \$10.00. In order to avail himself of this chance, the subject simply enclosed his name and address with the completed questionnaires. In analyzing the results of this second change, it was found that only 127 of the 308 subjects who had the opportunity to win \$10.00 actually took advantage of it. It would appear, therefore, that while the chance to win \$10.00 was of some importance, the opportunity to remain anonymous was even more important.

There were no significant differences in age, race, or sex between those subjects who were obtained using the original procedure and those who were obtained using the revised approach. The two groups were, therefore, combined to form the total race track sample.

Under the revised procedure, the approach to prospective subjects was as follows:

Hello. I'm conducting a survey as part of a dissertation research project at Loyola University. Do you mind if I speak to you for a minute?

If the prospective subject agreed, the interviewer proceeded in the following manner:

The survey is designed to determine what relation, if any, exists between a person's experiences with gambling and his personal beliefs, attitudes, and opinions. What I am asking people to do is take a set of questionnaires home with them, fill them out, and mail them back. There is no cost to you except a little of your time, and those who do participate have a chance to win \$10.00. Would you be willing to take a set of questionnaires with you?

The subject was then given a set of questionnaires and thanked for his cooperation. If the subject had any questions, he was permitted to examine the set of questionnaires and read the cover letter. No instances were encountered where a prospective subject asked for information beyond this point.

The procedure for obtaining subjects for the control group was essentially the same as the revised procedure used for the race track sample. Prospective subjects were approached at random. They were offered the opportunity to win \$10.00 if they participated, and they were given a set of questionnaires to take with them. Modifications that were made in the approach were designed to take into account the fact that some prospective subjects might not gamble and to explain why subjects for a study on gambling were being solicited at a shopping center. The approach was as follows:

Hello. I'm conducting a survey as part of a dissertation research project at Loyola University. Do you mind if I speak to you for a minute?

If the prospective subject agreed, the interviewer proceeded as follows:

The survey is designed to determine what relation, if

any, exists between a person's experiences with gambling and his personal beliefs, attitudes, and opinions. The survey has already been completed by a number of people at local race tracks, and I am interested in comparing their responses to those of people selected from the general population. So, whether you gamble or not, your participation would be helpful. There is no cost to you except a little of your time, and those who do participate have a chance to win \$10.00. Would you be willing to take a set of questionnaires with you?

If the prospective subject agreed, he was then given a set of questionnaires to take with him. Again, if any questions were raised, the subject was given the opportunity to inspect the questionnaires and the cover letter.

The third sample of subjects, the admitted pathological gamblers, was drawn from the members of Gamblers Anonymous. There was no direct contact between the present investigator and the members of Gamblers Anonymous. Rather, arrangements were made with the Regional Council of Gamblers Anonymous to send sets of the questionnaires directly to them. They, in turn, distributed the questionnaires at regularly scheduled meetings of Gamblers Anonymous. A total of thirty-five sets of questionnaires were distributed at three different meetings. In presenting the research at the meetings, no effort was made to endorse it, nor was any effort made to urge participation. It was simply stated that the survey was part of a doctoral research project on gambling and related areas that was being done by a student at Loyola University. It was further stated that this student would appreciate any help that was given. The members were then



free to decide whether or not they wanted to participate.

### Statistical Design

The criteria used to determine whether a subject would be included in one of the four sub-groups of the race track sample were that his score was in the top third of the scores on the scale for that group and in the bottom third of the scores on the three remaining scales. The cutoff points establishing the top and bottom thirds for the four scales were based on the data from the first 200 subjects, in the race track sample, to return their completed questionnaires.

The first step in establishing the cutoff points for the four scales was to convert each subject's raw score on the I-E Scale to a 5-point measure. This was accomplished by partitioning the sample of 200 subjects into five equivalent groups based on their raw scores. It was determined that the raw scores would be converted as follows: A raw score of 6 or less equaled a converted score of 1; a raw score of 7, 8, or 9 equaled a converted score of 2; a raw score of 10 or 11 equaled a converted score of 3; a raw score of 12 or 13 equaled a converted score of 4; and a raw score of 14 or more equaled a converted score of 5. This set of converted scores was used for the Rational Gambler Scale. The order of the converted scores was reversed for use on the Pathological Gambler Scale.

Once the conversion of the I-E Scale was completed, a score for each of the four gambler's scales was calculated for each subject. The cutoff points were then determined that would partition off the top and bottom thirds on each of these scales. These cutoff points are given in Table 7.

The design used in the present investigation called for the testing of 19 hypotheses. The data that were analyzed, in testing these hypotheses, were of two types. The data on the level of anxiety, the level of defensiveness, and the degree of externality were ordinal in nature. Therefore, an analysis of variance was deemed to be the appropriate statistical technique. The data on the incidence of gambling by the subject's parents and the incidence of a big win in the subject's own gambling history, on the other hand, were nominal in nature. The appropriate statistical techniques for these data were, therefore, the  $\chi^2$  statistic and the lambda asymmetric index of predictive association or the phi coefficient depending on the size of the contingency table (i.e., the phi coefficient is appropriate only for 2 X 2 tables).

Three separate one-way analyses of variance were performed, one for each of the personality characteristics under consideration. For both the level of anxiety and the level of defensiveness, the hypotheses that had been made were such that the analysis of variance could be done using five orthogonal, planned comparisons. Table 8 gives the

Table 7  
Cutoff Scores for the Four Gambler Scales

	Top Third Cutoff Score	Bottom Third Cutoff Score
Rational Gambler Scale	$\geq 16$	$\leq 14$
Social Gambler Scale	$\geq 24$	$\leq 20$
Pathological Gambler Scale	$\geq 21$	$\leq 17$
System Playing Gambler Scale	$\geq 11$	$\leq 8$

Table 8  
 Weightings Assigned to the Groups  
 for the Planned Comparison Tests

Group	APG	IPG	IRG	ISoG	ISyG	C
Comparison						
1) APG X IPG	+1	-1	0	0	0	0
2) ISoG X ISyG	0	0	0	+1	-1	0
3) ISoG/ISyG X C	0	0	0	+1	+1	-2
4) APG/IPG X ISoG/ ISyG/C	+3	+3	0	-2	-2	-2
5) IRG X APG/IPG/ ISoG/ISyG/C	+1	+1	-5	+1	+1	+1
APG--Admitted Pathological Gamblers						
IPG--Identified Pathological Gamblers						
IRG--Identified Rational Gamblers						
ISoG--Identified Social Gamblers						
ISyG--Identified System Playing Gamblers						
C--Control Group						

weightings assigned to the different groups for each of the five comparisons and the groups that were contrasted in each comparison.

Since the I-E Scale was intimately associated with the determination of the four identified groups of gamblers in the race track sample, it was inappropriate to use a statistical design such as that used for the measures of anxiety and defensiveness. Therefore, a one-way analysis of variance using the Duncan's Range Test to compare the three main samples was performed.

In addition to the differences found in the measures used in this research (i.e., ordinal vs. nominal data), there were also differences in the hypotheses that were proposed. Thus, ten of the hypotheses stated that there was no difference between two groups of subjects on a given measure. For the remaining hypotheses, a difference between groups was predicted. For the hypotheses where no difference was expected, a Type II error (i.e., failure to reject the null hypothesis when, in fact, the groups were different) was felt to be the more serious type of error. Therefore, in these cases, alpha was set at .10.

For the remaining hypotheses, a Type I error (i.e., rejecting the null hypothesis when there was, in fact, no difference) was considered the more serious error. In addition, the fact that multiple statistical tests were being done, raised the issue of reduced levels of confidence in

the results. Thus, it was decided to set a relatively restrictive alpha of .01.

The remaining data that were collected on the Personal Information Survey were, for the most part, nominal in nature. Thus, in developing the profiles of the different types of gamblers, the modal response was used for these data. There were, however, some data that were of a ratio nature (e.g., age and years of education). In these instances, the mean was used to develop the profiles.

The final proposed use of the data was to complete a third factor analysis of the Race Track Betting Behavior Questionnaire and the I-E Scale using the 334 subjects obtained at the race track. The factor analysis by Kusyszyn and Rubenstein (1971) found differing factor loadings for different items. This suggests the possibility of assigning weightings to the different items in order to make the scales more sensitive. However, the fact that the preliminary study done by the present author did not find total support for Kusyszyn and Rubenstein's factor loadings made it inappropriate to assign weights in the present study. If, on the other hand, a third factor analysis, done with a large sample, supported the findings by the original authors, it would be possible to refine the various scales. Therefore, a factor analysis, using a Varimax Rotation, was performed and four factors were extracted.

## CHAPTER IV

### RESULTS

The first step in the analysis of the data was to test the formal hypotheses which had been made. Table 9 summarizes the results which were used in making these statistical tests.

#### Comparison of the Admitted Pathological Gambler Group with the Identified Pathological Gambler Group

Hypothesis 1: There is no difference between the admitted pathological gambler group and the identified pathological gambler group in the level of anxiety. On the S-R Inventory of Anxiousness, the admitted pathological gambler group had a mean of 106.95 (standard deviation = 28.01), while the identified pathological gambler group had a mean of 108.52 (standard deviation = 14.74). This difference is not significant,  $t(39) = -.25$ ,  $p > .79$ . The two groups seem to be quite similar in the level of anxiety. However, Cochran's C-test for the homogeneity of variance did find that the variance of the two groups differed significantly ( $p < .006$ ). Both groups manifested a relatively normal distribution. However, the admitted pathological gambler group was more extreme in its responses with a range of 107 on this measure

Table 9

## Summary of the Data Used in the Analyses of the Hypotheses

	Admitted Patho- logical	Identified Patholog- ical	Identified Social	Identified System Playing	Control	Identified Rational	Total Race Track Sample
<b>Anxiety</b>							
<u>N</u>	20	21	20	20	34	23	326
Mean	106.95	108.52	98.65	102.90	96.03	95.39	101.10
<u>SD</u>	28.01	14.74	18.69	20.19	17.42	17.02	21.58
<b>Defensiveness</b>							
<u>N</u>	21	22	21	20	35	23	334
Mean	12.05	13.95	16.62	17.70	17.17	19.13	15.81
<u>SD</u>	4.81	5.89	5.64	5.08	5.79	5.61	5.89
<b>Externality</b>							
<u>N</u>	21				35		334
Mean	8.62	N/A	N/A	N/A	7.60	N/A	9.94
<u>SD</u>	4.71				4.88		4.30
(continued)							



Table 9 (continued)

	Admitted Patho- logical	Identified Patholog- ical	Identified Social	Identified System Playing	Control	Identified Rational	Total Race Track Sample
Big Win							
No	3 (14.3%)	11 (50%)	N/A	N/A	N/A	10 (43.5%)	139 (42%)
Yes	18 (85.7%)	11 (50%)				13 (56.5%)	192 (58%)
Parental Gambling							
Neither Parent Gambled	10 (47.6%)	7 (31.8%)			21 (60%)	11 (47.8%)	131 (39.2%)
At least one in Moderation	9 (42.9%)	12 (54.5%)	N/A	N/A	14 (40%)	10 (43.5%)	172 (51.5%)
At least one to Excess	2 (9.5%)	3 (13.6%)			0	2 (8.7%)	31 (9.3%)

as compared to a range of only 49 for the identified pathological gambler group. Hays (1973) stated that when sample sizes are equal, as they were in this particular comparison, relatively large differences between population variances seem to have relatively small consequences for the conclusions derived from a  $t$ -test. Furthermore, the difference in means between these two groups was quite small. It would seem justified, therefore, to conclude that the two groups are the same in their level of anxiety.

Hypothesis 2: There is no difference between the admitted pathological gambler group and the identified pathological gambler group in the level of defensiveness. The admitted pathological gambler group obtained a mean of 12.05 (standard deviation = 4.81) on the Crowne-Marlowe Social Desirability Scale compared to a mean of 13.95 (standard deviation = 5.89) for the identified pathological gambler group. This difference is not significant,  $t(41) = -1.13$ ,  $p > .26$ . Furthermore, Cochran's  $C$ -test for the homogeneity of variance was non-significant ( $p > .99$ ) Thus, it was concluded that the two groups were not different in the level of defensiveness.

Hypothesis 3: There is no difference between the admitted pathological gambler group and the identified pathological gambler group in the incidence of a big win. For the variable incidence of a big win, it was found that 18 of the 21 subjects in the admitted pathological gambler group

reported such an occurrence. For the identified pathological gambler group, only 11 of the 22 subjects reported having had a big win. For this hypothesis, the comparison was significant, Pearson's  $\chi^2 (1) = 4.72, p < .03$ . The two groups are different in terms of the incidence of a big win in the subjects' gambling histories.

Hypothesis 4: There is no difference between the admitted pathological gambler group and the identified pathological gambler group in the incidence of gambling by the subjects' parents. The question that was asked on the Personal Information Survey was worded in such a way that the subject indicated not only whether one or both of his parents gambled, but also whether that gambling was moderate or excessive. A 2 by 3 contingency table was, therefore, established. The results were non-significant,  $\chi^2 (2) = 1.14, p > .56$ . The two groups did not differ on this variable.

Comparison of the Identified Social Gambler Group, the Identified System Playing Gambler Group and the Control Group

Hypothesis 5: There is no difference between the identified social gambler group and the identified system playing gambler group in the level of anxiety. On the S-R Inventory of Anxiousness, the identified social gambler group had a mean of 98.65 (standard deviation = 18.69) while the identified system playing gambler group had a mean of 102.90 (standard deviation = 20.19). This difference was not sig-

nificant,  $t(38) = -.69$ ,  $p > .49$ . It seemed, therefore, that the two groups were similar in their level of anxiety.

Hypothesis 6: There is no difference between the identified social gambler group and the identified system playing gambler group in the level of defensiveness. On the Crowne-Marlowe Social Desirability Scale, the identified social gambler group had a mean of 16.62 (standard deviation = 5.64), and the identified system playing gambler group had a mean of 17.70 (standard deviation = 5.08). The comparison of these two groups was not significant,  $t(39) = -.63$ ,  $p > .53$ . The two groups appear to be the same in their level of defensiveness.

Hypothesis 7: There is no difference between the combined identified social/identified system playing gambler groups and the control group in the level of anxiety. The combined identified social/system playing gambler group had a mean of 100.77 (standard deviation = 19.56). The control group had a mean of 96.03 (standard deviation = 17.42). The comparison of these two groups was not significant,  $t(72) = 1.05$ ,  $p > .29$ . These two groups also appeared to be similar on the variable of anxiety.

Hypothesis 8: There is no difference between the combined identified social/identified system playing gambler groups and the control group in the level of defensiveness. The combined identified social/system playing gambler group had a mean of 17.15 (standard deviation = 5.49). The control

group had a mean of 17.17 (standard deviation = 5.79). The comparison of these two groups was not significant,  $t(73) = -.01$ ,  $p > .99$ . The groups were similar in the level of defensiveness.

Since the three groups under consideration appeared to be similar on the personality characteristics that were measured, their combination will be referred to as the combined social group in further analysis.

#### Comparison of the Combined Pathological Group with the Combined Social Group

Hypothesis 9: The combined identified pathological/admitted pathological group will have a significantly higher level of anxiety than will the combined identified social/system playing gambler/control group. For the variable of anxiety, the combined pathological group had a mean of 107.76 (standard deviation = 22.51). The combined social group had a mean of 98.59 (standard deviation = 19.79). The difference was not significant ( $t(113) = 2.23$ ,  $p < .03$ ) since alpha had been set at .01 for this comparison. However, the result did approach significance and was in the direction that had been predicted.

Hypothesis 10: The combined identified pathological/admitted pathological group will have a significantly higher level of defensiveness than will the combined identified social/system playing gambler/control group. The combined

pathological group had a mean of 13.00 (standard deviation = 5.61) on the variable of defensiveness. The combined social group had a mean of 17.16 (standard deviation = 5.72). The result of the comparison was significant,  $t(117) = -3.90$ ,  $p < .001$ . However, the difference was in the direction opposite from that which had been predicted.

Comparison of the Identified Rational Gambler Group with the other Five Groups Combined

Hypothesis 11: The identified rational gambler group will have a significantly lower level of anxiety than the other five groups combined. The identified rational gambler group had a mean of 95.39 (standard deviation = 17.02) on the S-R Inventory of Anxiousness. The combination of the remaining five groups had a mean of 101.86 (standard deviation = 19.79). The difference was not significant,  $t(136) = 1.62$ ,  $p > .10$ , but was in the direction which had been predicted.

Hypothesis 12: The identified rational gambler group will have a significantly lower level of defensiveness than the other five groups combined. On the Crowne-Marlowe Social Desirability Scale, the identified rational gambler group had a mean of 19.13 (standard deviation = 5.61), while the combination of the remaining groups had a mean of 15.66 (standard deviation = 5.90). The difference was significant,  $t(140) = -2.88$ ,  $p < .005$ , but again, was in the opposite direction from that which had been predicted.

Comparison of the Identified Rational Gambler Group with the Combined Pathological Gambler Group

Hypothesis 13: There is no difference between the identified rational gambler group and the combined identified/admitted pathological gambler group in the incidence of a big win in the subjects' gambling histories. In the identified rational gambler group, 13 of the 23 subjects reported the occurrence of a big win. For the combined pathological group, 29 of the 43 subjects reported having had a big win. This finding is non-significant, Pearson  $\chi^2 (1) = .37, p > .54$ . The two groups were apparently not different from each other on this variable.

Hypothesis 14: There is no difference between the identified rational gambler group and the combined identified/admitted pathological gambler group in the incidence of gambling by the subjects' parents. For the variable of incidence of gambling by the subjects' parents, the identified rational gambler group contained 11 subjects who reported that neither parent gambled, 10 who reported moderate gambling by at least one parent, and 2 who reported excessive gambling by at least one parent. The corresponding figures for the combined pathological group are: 17 subjects neither of whose parents gambled, 21 subjects who had at least one parent who gambled in moderation, and 5 subjects who had at least one parent who gambled to excess. The result of this analysis was not significant, Pearson  $\chi^2 (2) = .46, p > .79$ .

The groups were not different.

The Admitted Pathological Gambler Group Compared with the Total Race Track Sample and the Control Group

Hypothesis 15: The admitted pathological gambler group will have a significantly higher incidence of gambling by the subjects' parents than will the control group. In the admitted pathological gambler group, 10 subjects reported that neither parent gambled, 9 reported that at least one parent gambled moderately, and 2 reported that at least one parent gambled to excess. The corresponding figures for the control group were 21 subjects who reported that neither parent gambled and 14 subjects who reported that at least one parent gambled moderately. No subject in the control group reported excessive gambling by a parent. Despite the absence of parents who gambled to excess in the control group, the result of the analysis of the data was not significant, Pearson  $\chi^2 (2) = 3.72, p > .15$ . The groups did not differ.

Hypothesis 16: The admitted pathological gambler group will have a significantly higher incidence of gambling by the subjects' parents than will the total race track sample. The total race track sample contained 131 subjects who reported that neither parent gambled, 172 subjects who reported that at least one parent gambled moderately, and 31 subjects who reported that at least one parent gambled to excess. The result from the analysis of this data was not



significant, Pearson's  $\chi^2$  (2) = .64,  $p > .72$ . These two groups did not differ on this variable.

Hypothesis 17: The admitted pathological gambler group will have a significantly higher incidence of a big win in the subjects' gambling histories than will the total race track sample. In the admitted pathological gambler group, 18 subjects reported that they had had a big win, while 3 reported that they had not had a big win. For the total race track sample, the corresponding figures were 192 subjects who had had a big win and 139 who had not. The difference was not significant, Pearson's  $\chi^2$  (1) = 5.20,  $p < .02$ . This finding did, however, approach the alpha level of .01.

#### Comparison of the Three Samples on the I-E Scale

Hypothesis 18: The admitted pathological gambler group will have a significantly higher degree of externality than the total race track sample.

Hypothesis 19: The admitted pathological gambler group will have a significantly higher degree of externality than the control group.

The hypotheses concerning the degree of externality of the three samples were tested using the Duncan's Range Test. The mean for the control group was 7.60 (standard deviation = 4.88). The mean for the admitted pathological gambler group was 8.62 (standard deviation = 4.71). The mean for the total race track sample was 9.94 (standard deviation = 4.30). The

difference between the means of the groups would have had to have exceeded 3.66 to reach significance at the .01 level. Thus, the results of the analysis of the data for each of these hypotheses was non-significant.

### Profiles of the Different Types of Gamblers

Table 10 summarizes the demographic data and gambling histories that were collected for the different groups in this research. Since there were 29 variables under consideration with 10 possible comparisons for each variable, there were 290 statistical comparisons that could be made on this data. Such a procedure was deemed inappropriate since such a large number of statistical tests would, by chance alone, produce three significant findings if alpha were set at .01. Higher levels of alpha (e.g., .05) would have led to even more spuriously significant results, while setting a more restrictive level of alpha (e.g., .001) would have led to a large number of Type I errors. Therefore, no statistical analyses were undertaken with this data.

An examination of the data in Table 10 did, however, seem to point to a trend in the findings. On a number of variables, the admitted pathological group and the identified pathological gambler group gave the same modal response. Furthermore, these responses were different from the responses given by the other three identified groups. Thus, both pathological groups reported that their parents were likely

Table 10

## Profiles of the Different Types of Gamblers

Variable	Admitted Patho- logical	Identified Patholog- ical	Identified Rational	Identified Social	Identified System Playing	
<u>N</u>	21	22	23	21	20	
Age	Mean <u>SD</u>	42.29 11.25	26.32 6.39	30.52 10.47	36.48 13.54	34.05 11.99
Sex	Male (100%)	Male (77.3%)	Male (69.5%)	Male (76.2%)	Male (50%)	
Race	White (95.2%)	White (90.9%)	White (95.6%)	White (85.7%)	White (90%)	
Religion	Catholic (61.9%)	Catholic (81.8%)	Protestant (43.5%)	Catholic (57.1%)	Catholic (45%)	
Marital Status	Married (71.4%)	Single (45.5%)	Married (52.2%)	Married (47.6%)	Married (65%)	
Income	\$20-25,000 (21.1%)	\$10-15,000 (31.8%)	\$10-15,000 (43.5%)	\$10-15,000 (28.6%)	\$10-15,000 (25%)	
Father Gambled	No (52.4%)	Yes (59.1%)	Yes (52.2%)	No (52.4%)	Yes (55%)	
(continued)						

Table 10 (continued)

Variable	APG	IPG	IRG	ISoG	ISyG
Mother Gambled	No (76.2%)	No (63.6%)	No (78.2%)	No (81%)	No (60%)
Siblings Gambled <sup>a</sup>	Yes (52.4%)	Yes (50%)	No (69.5%)	No (52.4%)	No (55%)
Other Relatives Gambled	No (57.1%)	No (54.6%)	No (60.8%)	No (52.4%)	No (65%)
First Gambled at age <sup>b</sup>	M SD 13.00 3.74	15.64 7.95	17.09 5.48	17.00 6.77	19.15 7.01
Overall Success at Gambling	Lost (95.2%)	Lost (54.5%)	Lost (43.5%)	Lost (81%)	Lost (45%)
What % of income is a Big Win <sup>b</sup>	5% (42.9%)	3% (22.7%)	1% (43.5%)	1% (38.1%)	1% (25%)
Had a Big Loss <sup>a</sup>	Yes (100%)	Yes (68.2%)	No (78.3%)	No (61.9%)	No (70%)
Frequency at the Race Track <sup>b</sup>	3-5 times a week (33.3%)	1-2 times a week (40.9%)	Less than Bi-weekly (52.2%)	Less than Bi-weekly (52.4%)	Less than Bi-weekly (55%)
Number of Other Gambling Activities <sup>a</sup>	4 (28.6%)	4 (31.8%)	3 (30.4%)	3 (33.3%)	3 (45%)

(continued)

Table 10 (continued)

Variable		APG	IPG	IRG	ISoG	ISyG
Favorite Type of Gambling		Horses (57.1%)	Horses (50%)	Horses (43.5%)	Horses (76.2%)	Horses (40%)
Is Gambling a problem <sup>b</sup>		Yes (100%)	No (77.3%)	No (95.7%)	No (90.5%)	No (100%)
Largest Bet in the Last Three Years <sup>b</sup>	$\frac{M}{SD}$	\$1304 2496.16	\$218 433.47	\$133 267.23	\$113 229.81	\$106 228.20
Hours Spent on Gambling Per Week <sup>b</sup>	$\frac{M}{SD}$	33.88 20.41	15.09 14.59	10.72 17.71	7.02 9.15	7.31 10.77
Parents Complained about S's Gambling <sup>a</sup>		Yes (66.7%)	Yes (50%)	No (87%)	No (85.7%)	No (95%)
Siblings Complained about S's Gambling <sup>b</sup>		Yes (52.4%)	No (81.8%)	No (95.7%)	No (85.7%)	No (100%)
Friend Complained about S's Gambling <sup>b</sup>		Yes (57.1%)	No (54.5%)	No (91.3%)	No (90.5%)	No (100%)

(continued)

Table 10 (continued)

Variable	APG	IPG	IRG	ISoG	ISyG
Spouse Com- plained about S's Gambling <sup>b,c</sup>	Yes (94.4%)	No (58.3%)	No (92.8%)	No (78.6%)	No (100%)
Other Relative Complained about S's Gambling <sup>b</sup>	No (68.4%)	No (77.3%)	No (91.3%)	No (95.2%)	No (100%)
Employer Com- plained about S's Gambling <sup>b</sup>	No (66.7%)	No (90.9%)	No (100%)	No (95.2%)	No (100%)
Nature of the Complaints	Time & Money (71.4%)	Money (40%)	Money (100%)	Money (66.7%)	Money (50%)
Length of Gam- bling Career	M <u>SD</u> 29.29 11.70	10.68 7.03	13.44 10.88	19.48 13.71	14.90 11.28
<sup>a</sup> On these items, the modal response for the two pathological groups was the same, and that response was different from the remaining groups.					
<sup>b</sup> On these items, the modal response for the identified pathological gambler group was closer to that given by the admitted pathological group than was the response given by the remaining groups.					
<sup>c</sup> On this item, the percentage was determined by dividing the number in the group who had been married into the number who reported that their spouse had complained					

to have complained about their gambling behaviors. Both groups reported the occurrence of a big loss. The two groups were alike in the number of other gambling activities in which they engaged. Finally, both groups were more likely to have siblings who gambled.

In addition to the items where the modal response was the same for the two pathological groups and different from the modal response of the other three groups, there were a number of other items where the response of the identified pathological gambler group was closer to that of the admitted pathological gambler group than were the responses of the other three groups. Included among these variables were complaints concerning the subjects' gambling behaviors by siblings, spouses, other close relatives, close friends, and employers. Furthermore, the age at which the subjects' first gambled, the frequency of attendance at the race track, the largest bet in the last three years, and the amount of time spent gambling were, for the identified pathological gambler group, closer to that of the admitted pathological gambler group than were the responses of the other identified groups. Another variable where the identified pathological gambler group was closer to the admitted pathological gambler group than were the other groups was in the percentage of income that would have to be won to be considered a big win. Finally, the subjects in the identified pathological gambler group were more likely to consider their gambling behavior a pro-

blem than were the other three groups.

Factor Analysis of the Race Track Betting Behavior Questionnaire and the I-E Scale

The final proposed use of the data that were collected in this investigation was to attempt to replicate the factor analysis performed by Kusyszyn and Rubenstein (1971) on the Race Track Betting Behavior Questionnaire and the I-E Scale. A Varimax Rotation was, therefore, performed. Table 11 presents the results of this factor analysis compared to that performed by Kusyszyn and Rubenstein and to that done by the present author in the preliminary study.

As was the case with the factor analysis performed in the preliminary study, the present factor analysis provides moderate support for the factors found by Kusyszyn and Rubenstein.

The strongest support is found for the Pathological Gambler Scale. This scale contains seven items which had significant loadings on Factor III in the original study. In the present investigation, five of these seven items load significantly on Factor I. The two remaining items have negligible loadings on this factor. One of these items (i.e., I bet on tips from trainers, friends, etc.) does, however, load significantly on Factor IV in the present study. The only other item with a significant loading on Factor IV (i.e., Other people change my mind about the horse I wanted



Table 11

Comparison of the Three Factor Analyses of the  
Race Track Betting Behavior Questionnaire and the I-E Scale

	Kusyszyn & Rubenstein <u>N</u> = 175	Present Study <u>N</u> = 334	Preliminary Study <u>N</u> = 28
Rational Gambler Scale	Factor I egv = 2.03	Factor III egv = 0.85	Factor I egv = 2.34
When I go to the track I am confident of winning	.67	.41	.22
I study the racing form or program	.66	.46	.15
I-E Locus of Control	-.37	-.14	.73
I feel the races are fixed <sup>a</sup>	-.56	-.11	-.63
Social Gambler Scale	Factor II egv = 1.68	Factor II egv = 1.44	Factor III egv = 1.32
I bet to win	.73	.79	.81
The amount I bet is affected by the odds <sup>a</sup>	.53	.08	-.28
Luck is important for winning at the track <sup>a</sup>	.38	.01	-.28
I bet on every race	.37	.19	.12
I go to the track to relax	.32	.05	.17
I bet to show	-.63	-.55	-.56
Pathological Gambler Scale	Factor III egv = 1.59	Factor I egv = 1.80	Factor II egv = 1.62
Other people change my mind about the horse I wanted to bet <sup>b</sup>	.67	.31	.61

(continued)

Table 11 (continued)

	Kusyszyn & Rubenstein	Present Study	Preliminary Study
Pathological Gambler Scale (continued)			
I feel bad after I have a losing day	.56	.42	.06
When I am down money I bet more to try to get it back	.50	.55	.80
I bet less when the track is slow or sloppy	.41	-.02	-.03
I bet on tips from trainers, friends, etc.	.38	.01	.39
I-E Locus of Control	.32	.42	-.08
I bet on every race	.30	.42	.30
System Playing Gambler Scale	Factor IV egv = 1.30	Factor III egv = 0.85	Factor IV egv = 1.24
I have a "system"	.74	.38	.97
I go to the track to relax	.48	.18	-.06
I bet less when the track is slow or sloppy	.35	.42	.13
Luck is important for winning at the track <sup>a</sup>	-.46	-.13	-.14
<sup>a</sup> In addition to the factor loadings reported above, these items also loaded on Factor I in the present study:			
I feel the races are fixed			.44
The amount I bet is affected by the odds			.33
Luck is important for winning at the track			.43
(continued)			

Table 11 (continued)

<sup>b</sup>Factor IV had only two items with significant factor loadings. These two items were found to load significantly on the Pathological Gambler Scale in the original study:

Other people change my mind about the horse I wanted to bet	.54
----------------------------------------------------------------	-----

I bet on tips from trainers, friends, etc.	.60
-----------------------------------------------	-----

to bet.) is also an item on the Pathological Gambler Scale and loads significantly on Factor I in the present investigation. Thus, there is some overlap between Factor IV and Factor I in the present study which suggests that these factors may tap similar behaviors. Furthermore, the item, "I bet on tips from trainers, friends, etc.", did have a significant loading in the preliminary study. Thus, only one item (i.e., I bet less when the track is slow or sloppy) on the Pathological Gambler Scales fails to find any support.

The items on the Rational Gambler Scale (Factor I in the Kusyszyn & Rubenstein study) and on the System Playing Gambler Scale (Factor IV in the Kusyszyn & Rubenstein study) all had factor loadings on Factor III in the present study. For both of these scales, there were two items which had significant loadings in the present study. The two remaining items on each of the two scales had factor loadings that were in the same direction as in the original study, but they did not reach a significant level.

The least support was found for the Social Gambler Scale. Of the six items on this scale, only two received support in the present study. Furthermore, these findings were practically identical to those found in the preliminary study. Thus, in two separate studies, this factor has had little support.

## CHAPTER V

### DISCUSSION

#### The Reliability of the Four Factors on the Race Track Betting Behavior Questionnaire and the I-E Scale

In the factor analyses of the Race Track Betting Behavior Questionnaire and the I-E Scale, only one of the original factors (i.e., the pathological gambler factor) had consistent support in the subsequent analyses. On the other hand, support for the social gambler factor in the original study (Kusyszyn & Rubenstein, 1971) was consistently lacking in the two subsequent analyses by the present author. The two remaining factors found moderate support.

One issue that would affect the different factor analyses that were performed is the reliability of the different items that went into the factor analyses. In the preliminary study by the present author, it was found that the reliability of the items ranged from .33 to .91. Thus, while the items have, in general, acceptable levels of reliability, error variance is still a factor, and in some cases a rather significant factor. Differences found among the three factor analyses may, therefore, be partially attributable to the lack of sufficient reliability of the items. Furthermore, there may be differences among the

populations that were sampled. The original Kusyszyn and Rubenstein study, for example, was conducted at two Canadian race tracks. The present author is unfamiliar with the social attitudes held toward gambling in Canada, but it is possible that there are significant differences between those attitudes and the attitudes which predominate in the United States. Such differences could have an affect on the way subjects would respond to the measuring instruments under consideration. Even with the two factor analyses performed by the present author, there are differences in the samples. For example, in one case, the subjects filled out only the two questionnaires to be factor analyzed. In the other case, these were only two of five questionnaires. Further, the populations which were sampled may have been different. In the preliminary study, the population was sampled in the fall of the year when the weather was pleasant. In the present study, the population was sampled in the middle of the coldest winter on record. Given the fact that none of the items in the factor analyses was totally reliable and that the populations that were sampled may have differed from each other in several important ways, it would appear that these instruments and the scales that were derived from them can be of some value in distinguishing among different types of gamblers.

Of particular relevance to the area of pathological gambling is the general support that was found for the Path-

ological Gambler Scale. This scale would be quite useful in terms of undertaking further research. It could, for example, be used to select a sample of pathological gamblers who are actively gambling. This sample could then be used in research exploring the relationship of different variables to pathological gambling behaviors. Furthermore, this scale, in the context of the Race Track Betting Behavior Questionnaire and the I-E Scale, can be considered to be at least semi-disguised, and thus, of value where the purpose of a research project needs to be disguised.

Finally, while total support of the factors extracted by Kusyszyn and Rubenstein is lacking, the four gambler scales (corresponding to these factors) used in this research, did, in fact, appear to differentiate among three distinct types of gamblers. Thus, there is empirical evidence which supports the utility of these instruments in the differentiation of three types of gamblers.

#### Comparison of the Two Pathological Gambler Groups

Despite the apparent support for the Pathological Gambler Scale that was found in the factor analyses discussed in the preceding section, the scale would be of little practical value if it did not, in fact, identify individuals whose gambling behaviors were pathological or at least potentially pathological. Thus, the results of the various statistical analyses comparing the identified pathological

gambler group with the admitted pathological gambler group, which served as a criterion group, were quite important. These hypotheses were, for the most part, clearly supported by the data. Thus, the two groups were found to be quite similar on the variables of anxiety, defensiveness, and the incidence of gambling by the subjects' parents.

The only hypothesized similarity which was not supported by the data was the incidence of a big win in the subjects' gambling histories. This finding may, however, have been the result of other differences between the two groups that are presently under consideration. Of particular interest was the difference in the average length of the gambling careers of the two groups. The admitted pathological gambler group was significantly older ( $t(41) = 5.76, p < .001$ ) than the identified pathological gambler group. The mean age of the admitted pathological gambler group was 42.29 (standard deviation = 11.25) while the mean age of the identified pathological gambler group was 26.32 years (standard deviation = 6.39). The age at which the two groups first gambled, on the other hand, was not significantly different,  $t(41) = 1.38, p > .10$ . The means and standard deviations for this variable were: admitted pathological gambler group--mean = 13.00 years, standard deviation = 3.74; identified pathological gambler group--mean = 15.64 years, standard deviation = 7.95. Thus, the length of the average gambling career for the admitted pathological



gambler group was almost three times as long as that for the identified pathological gambler group. The difference found between the two groups for the variable of incidence of a big win might, therefore, have been due to the longer gambling career of the admitted pathological gambler group and the resultant increase in opportunities for a big win to occur. This issue is, however, further confused by the fact that the two groups were apparently using different criteria in defining what constituted a big win. The modal percentage of income which constituted a big win for the admitted pathological gambler group was 5%, while that for the identified pathological gambler group was 3%. Thus, for the admitted pathological gambler group the likelihood of a big win was not only greater, but the amount of money involved was also apparently greater. Whether the longer gambling career of the admitted pathological gambler group is the major factor in these differences is, therefore, unclear.

Given the support that was found for the hypotheses concerning the similarities between these two groups, it is reasonable to assume that the two groups share common features. However, the correlational nature of this investigation leaves open the question of whether pathological gambling is the cause or the result of these similarities. It is possible, therefore, that some factor or factors other than pathological gambling is the basis of the similarities that were found between the two groups.

While there is, therefore, some question as to the causality of the similarities that were found, support for the conclusion that the similarities were due to pathological gambling is found in the data which was collected from the subjects concerning their gambling histories. This data was composed largely of information concerning the occurrence of a particular experience or the extent of a particular behavior, and thus, gave some indication of the types of behaviors and experiences the subjects in the different groups had undergone. In a number of instances, the identified pathological gambler group reported experiences and behaviors which were more "pathological" than those reported by any group except the admitted pathological gambler group. Thus, in comparison with the other three identified gambler groups, the identified pathological gambler group tended to make larger wagers, to spend more time on gambling activities, and to have had a loss which was greater than they could afford. They were also more likely to have started gambling at an earlier age, to have participated in a wider range of gambling activities, and to gamble more frequently. Finally, the identified pathological gambler group was more likely to have had significant others in their lives complain about their gambling behaviors than any of the other three identified groups. For each of these variables, the identified pathological gambler group's responses were more pathological than the other three identified groups. How-

ever, on each of these variables, the admitted pathological gambler group's responses were even more extreme. Thus, it would appear that the identified pathological gambler group was, in fact, more pathological than the other identified groups, but less pathological than the admitted pathological gambler group. The greatest difference between the two pathological groups was in their age, and thus, in the length of their gambling careers. There appear to be, therefore, two alternative explanations of the similarities between the two groups. First, there is the possibility that the identified pathological gambler group should, in fact, be labeled as potential pathological gamblers. That is, since this group had had relatively short gambling careers, their gambling behaviors, while potentially pathological, had not yet become a problem. This would assume that pathological gambling is a disorder that develops gradually over a period of time. If this is in fact the case, then it would appear that the Pathological Gambler Scale would have considerable value in terms of both treatment and research into pathological gambling behaviors. There is, however, an alternative explanation. This second possibility is that the causal factor underlying the similarities between the two groups was immaturity. For the admitted pathological gambler group, it might be assumed that pathological gambling behaviors might be an expression of an immature personality. For the identified pathological gambler group,

immaturity, in terms of their relative youth rather than a personality disorder, might lead to pathological-like gambling behavior. Clinicians and theorists in the field of pathological gambling (e.g., Bergler, 1958 and Custer, 1976) have suggested that this behavior is functionally equivalent to alcoholism. If the two disorders are functionally equivalent, then it can be assumed that pathological gambling, like alcoholism, is a progressive disorder with behaviors becoming more extreme as time passes. Such a situation would, of course, support the idea that the identified pathological gambler group found in the present study was, in fact, composed of potential pathological gamblers whose behaviors would become more extreme as they continued to gamble. However, further research is needed to determine which of the two possible alternatives is more likely to be valid. This research should take the form of a replication of the present research paradigm but with the two pathological groups being matched on the variables of age and length of gambling careers. If the first possibility was the true situation, then groups matched for age and length of gambling careers would be even more similar than was the case in the present investigation. If, on the other hand, the relative youth of the identified pathological gambler group in the present investigation was the cause of the similarities that were found, then comparing an identified and an admitted pathological gambler group, matched for age, should

yield no more similarity than was found in the present study, and probably less similarity. The latter would be expected because the identified group would be more mature than was the identified pathological gambler group in the present study.

Similarities Among the Identified Social Gambler Group, the Identified System Playing Gambler Group, and the Control Group

The hypotheses predicting similarities between the identified social gambler group and the identified system playing gambler group, and between these two groups combined and the control group were all supported by the data. Furthermore, on the variables of anxiety and defensiveness, these three groups were, as expected, in the middle ranges. Finally, on the data which were collected concerning personal gambling histories, the identified social gambler group and the identified system playing gambler group gave similar responses to most of the items, including the size of the largest bet in the last three years and the amount of time devoted to gambling. The identified system playing gambler group did have an abnormally large percentage of female subjects. Also, the identified system playing gambler group, as a whole, reported a higher overall rate of success in their gambling than did the identified social gambler group. These findings may have been simply random variations, and

thus, have had little import. On the other hand, it may be that using a system, most of which include one or more of the basic principles of handicapping (Ainslie, 1968), would lead to more success than not using one, as was likely to be the case among the subjects in the identified social gambler group. In fact, the success rate reported by the identified system playing gambler group closely approximated that of the identified rational gambler group who, presumably, follow the full handicapping procedures. Moreover, the simplified form of handicapping may have an intrinsic appeal to women who have traditionally lacked training in handling complex problem solving tasks such as handicapping a race.

In general, however, the identified social gambler group and the identified system playing gambler group appear to be quite similar to each other and to the control group. In fact, most researchers and writers, both professional and popular, in the area of gambling divide the gambling population into three groups (i.e., pathological gamblers, social gamblers, and rational or professional gamblers), with the social gamblers making up the overwhelming majority of the gambling population. It is possible, therefore that the social gambler group identified in this research would be no different from any other sample of race track patrons once the pathological and rational gamblers were excluded from the population. To explore this possibility further, t-tests were made comparing the combination

of the identified social gambler group and the identified system playing gambler group with the subjects from the race track sample who had not met the criteria for inclusion in one of the four identified groups. The two groups were not significantly different on the variable of anxiety,  $t(280) = .08$ ,  $p > .96$ . On this variable, the combined social/system playing gambler group had a mean of 100.77 (standard deviation = 19.56), while the remainder of the race track sample had a mean of 101.05 (standard deviation = 22.70). For the variable of defensiveness, the combined social/system playing gambler group had a mean of 17.15 (standard deviation = 5.49) and the remainder of the race track sample had a mean of 15.44 (standard deviation = 5.88). The difference is not significant,  $t(287) = 1.72$ ,  $p > .10$ . These findings suggest that while there is a distinct group of social gamblers within the gambling population, the majority of them did not meet the criteria used in this research to identify such gamblers. It might be appropriate, therefore, to modify the criteria used in future research to include all subjects who do not meet the criteria for inclusion in the rational or pathological groups.

#### Comparison of the Three Types of Gamblers

Kogan and Wallach (1964) in their study on risk taking found that those subjects whose wagers were consistently risky manifested the highest levels of both of the modera-

ting variables of anxiety and defensiveness. Those subjects, apparently, did not take situational variables into account and were, therefore, likely to lose more money (or win less) than subjects who were low on both variables. The latter group of subjects were seen as taking a cognitive (i.e., rational) approach in their wagering. It was felt that these two extremes would be represented in the present study by the combined pathological group and the identified rational group, respectively. Thus, it was hypothesized that the combined pathological group would manifest the highest levels of anxiety and defensiveness. Conversely, the identified rational gambler group was expected to manifest the lowest levels of these two variables. The combined social group was expected to manifest moderate levels of these variables. Furthermore, it was predicted that the combined pathological gambler group would be significantly higher than the combined social group on these variables, and that the identified rational gambler group would be significantly lower on these variables than the combination of the other five groups.

Level of anxiety. The findings of the statistical analyses on the variable of anxiety failed to reach the level of alpha which had been set. The differences were, however, in the direction which had been predicted, and they did approach significance. Since the expectations were that the extremes would be represented by the identified patho-



logical gambler group and the identified rational gambler group, a post hoc comparison of these two groups on the variable of anxiety was performed. The results of this comparison were significant,  $t(42) = 2.72$ ,  $p < .01$ . Thus, a derivative of the hypotheses under consideration was significant and the difference was in the direction which had been predicted.

It is, of course, possible that some other measure of anxiety might have found more significant results. The authors of the S-R Inventory of Anxiousness (Endler, et al., 1962) report only moderate correlations between their instrument and several other measures of anxiety (i.e., the Taylor Manifest Anxiety Scale, the Mandler and Sarason TAQ, and the Gordon and Sarason GAQ) ranging from .34 to .44. Thus, the total S-R Inventory of Anxiousness does not appear to be in full agreement with other anxiety scales and may, in fact, be measuring a somewhat different aspect of anxiety. Furthermore, the present investigation did not use the full S-R Inventory of Anxiousness. The items which were used dealt with what the authors of the inventory termed anxiety in interpersonal situations. Thus, a rather specific type of anxiety was being considered in the present research. Further research using several different measures of anxiety with different types of gamblers would be necessary in order to fully evaluate the relationship between anxiety and gambling behaviors. However, the results that were found in

the present investigation are promising and suggest that there is a difference in the level of anxiety found in the different types of gamblers.

Level of defensiveness. The findings for the variable of defensiveness were very significant. It appears, therefore, that the different types of gamblers are, in fact, different from each other in their level of defensiveness. However, the differences were in the opposite direction to that which had been predicted. Thus, the identified rational gambler group was the most defensive, while the combined pathological gambler group was the least defensive. One possible explanation for these findings suggested itself. The items on the Race Track Betting Behavior Questionnaire were written to represent typical race track behaviors and beliefs (Kusyszyn & Rubenstein, 1971). Further, various writers on the "art" of handicapping races (i.e., Ainslie, 1968; Beyer, 1975; and Fabricand, 1976) clearly spell out those behaviors which are likely to lead to success at the race track (e.g., studying the Daily Racing Form and being confident in one's ability as a handicapper) and those which are undesirable (e.g., listening to tips from others and betting on every race). In addition, several researchers (i.e., Livingston, 1974 and Zola, 1967) have noted that, among gamblers, the ability to be a successful handicapper is a socially desirable role to achieve. Thus, it seemed possible that those subjects who met the criteria for in-

clusion in the identified rational gambler group were responding out of the same motivation which would lead to a high score on the Social Desirability Scale. Conversely, those subjects who met the criteria for inclusion in the identified pathological gambler group, in that they admitted to behaviors which have a low social desirability among gamblers, might be expected to have a low score on the Social Desirability Scale. If this were, in fact, the case, then there would be a positive relationship between the Social Desirability Scale and the Rational Gambler Scale for the identified rational gambler group, while the corresponding relationship for the identified pathological gambler group would be negative. For the other two identified gambler groups and for the total race track sample, the relationship would be positive, but smaller than that for the identified rational gambler group. The relationship between the Social Desirability Scale and the Pathological Gambler Scale would be negative, although for the identified pathological gambler group it would be less than that for the other groups.

To evaluate this possible explanation of the unexpected findings on defensiveness, a Pearson product-moment correlation coefficient was computed for each of these comparisons. The results of this analysis are reported in Table 12. These results suggested that the motivation to appear in a socially desirable light may have, in fact, accounted for the reversal of the actual findings from those

Table 12

Correlation of the Social Desirability Scale with the  
Rational Gambler Scale and the Pathological Gambler Scale

Social Desirability Scale		Rational Gambler	Pathological Gambler
Correlated with:		Scale	Scale
	<u>N</u>		
Identified Rational Group	23	$\underline{r} = .40^*$	$\underline{r} = .07$
Identified Social Group	21	$\underline{r} = .30$	$\underline{r} = -.13$
Identified Pathological Group	22	$\underline{r} = -.18$	$\underline{r} = -.06$
Identified System Playing Group	20	$\underline{r} = -.10$	$\underline{r} = -.25$
Total Race Track Sample	329	$\underline{r} = .12^{***}$	$\underline{r} = -.34^{***}$

\*  $p < .05$   
 \*\*\*  $p < .001$

that were expected. For the total race track sample, a small, but significant positive correlation was found between the Social Desirability Scale and the Rational Gambler Scale. Moreover, a moderate and significant negative correlation was found between the Social Desirability Scale and the Pathological Gambler Scale. Thus, it appears that the items on these two scales were related to the factor of social desirability for the total race track sample. When the data for the different identified groups of gamblers were analyzed, the findings gave additional support to the assumption that the factor of social desirability was influencing the subjects' responses on the Race Track Betting Behavior Questionnaire. As was predicted, a positive correlation was found between the Social Desirability Scale and the Rational Gambler Scale for the identified rational gambler group. This correlation was, in fact, the strongest that was found for the four identified gambler groups. The correlation for the identified pathological gambler group, on the other hand, was the most negative (although not reaching significance) of the four groups. When the correlations of the Rational Gambler Scale with the Social Desirability Scale were compared with the correlations of the Pathological Gambler Scale with the Social Desirability Scale, it was found that for all groups except the identified pathological gambler group, the correlation of the Rational Gambler Scale was more positive (or less negative)

than the correlation with the Pathological Gambler Scale. For the identified pathological gambler group, however, the findings were reversed with a more negative correlation for the Rational Gambler Scale than for the Pathological Gambler Scale, although neither of the correlations was significant. Thus, there does appear to be evidence that indicates that social desirability was a factor which had a moderating affect on the way in which the subjects in this research responded to the items on the Race Track Betting Behavior Questionnaire.

These findings cast some doubt on the characteristics of the identified rational gambler group. It had been assumed that this group would be composed of individuals who were successful in their gambling. However, the correlation between the Social Desirability Scale and the Rational Gambler Scale raises the possibility that the subjects in the identified rational gambler group were merely presenting themselves in a socially desirable role. While the admitted pathological gambler group served as a criterion group against which the identified pathological gambler group could be compared and the control group served a similar purpose for the identified social gambler group and the identified system playing gambler group, there was no non-race track sample against which the identified rational gambler group could be compared. Furthermore, there was no objective criterion against which the relative success of the dif-

ferent identified gambler groups could be checked. The subjects were asked to indicate whether they had won, broken even, or lost during the course of their gambling careers. On this question, the identified rational gambler group did report the best overall results. This finding would suggest that the identified rational gambler group was, indeed, more successful at gambling than were any of the other groups. However, if the motivation to appear in a socially desirable light influenced the subjects' responses on the Rational Gambler Scale, it is reasonable to assume that the same motivation would influence their response to a question concerning their success in gambling. Thus, before any conclusions can be drawn equating rational gamblers, as identified in this study, with successful gamblers, additional research is needed. One possibility would be to keep track of the relative success of different types of gamblers in an actual gambling situation. An alternative would be to compare a group of rational gamblers to some criterion group such as successful entrepreneurs on the variables of anxiety and defensiveness.

The three types of gamblers compared to the groups identified by Kogan and Wallach (1964). While research such as that proposed above might clarify whether the rational gambler, as identified in this investigation, is more successful at gambling than the other types of gamblers, other questions still remain. For example, the identified ra-

tional gambler group did not correspond to Kogan and Wallach's low motivational disturbance group. This finding was contrary to that which had been expected. In fact, the identified rational gambler group corresponded to Kogan and Wallach's low anxious-high defensive group. Kogan and Wallach characterized this group as having a tendency to ignore situational variables when decisions were made in interpersonal situations. Similarly, the identified pathological gambler group appeared to correspond to Kogan and Wallach's high anxious-low defensive group rather than to the high motivational disturbance group as had been expected. Kogan and Wallach characterized this group as having a disregard for situational factors on tasks that were of a manifest problem solving nature. What affect these findings would have on a subject's approach to gambling and relative success in the activity is unclear. Gambling is an inherently competitive activity in that for each winner there has to be a loser. Furthermore, being acknowledged as a successful handicapper by one's fellow gamblers is a socially desirable role (Livingston, 1974 and Zola, 1967). There is, therefore, an interpersonal aspect to gambling. On the other hand, handicapping a race appears to be a problem solving task. Thus, gambling can have both interpersonal and problem solving aspects. One possibility is that all of the subjects viewed gambling as primarily a problem solving task. In this case, those subjects who are high anxious-low defen-



sive (i.e., the pathological gambler groups) would be most prone to disregard situational factors and would, therefore, be expected to have the least success. Those subjects who had the lowest tendency to disregard situational factors in problem solving tasks (i.e., the identified rational gambler group) would be expected to have the most success. This possibility would be supported if it can be shown that the subjects in the identified rational gambler group were, in fact, more successful in their gambling.

A second possibility suggests itself if the identified rational gambler group is, in fact, not successful at gambling. This possibility is that different types of gamblers view gambling from different perspectives. Thus, the pathological gambler group may view gambling as a problem solving task. This would account for the lack of success of the pathological gambler. The rational gambler, if in fact this type of gambler is not successful, may view gambling as an interpersonal situation, and thus, also fail to take situational factors into account. This set of circumstances is, of course, assuming that the rational gambler, as identified in the present investigation, actually has a problem with gambling, but has refused to acknowledge it. The conclusion suggested by this second possibility is that motivational disturbance caused by high levels of either anxiety or defensiveness may lead to difficulties with gambling. On the other hand, gambling should not be a problem for those

subjects who manifested lower levels of anxiety and defensiveness (i.e., social gamblers). For this group of gamblers, gambling would serve merely as a form of entertainment. Such a possibility would not, moreover, rule out the existence of individuals who are successful at gambling. It would, however, mean that the procedures used in the present investigation were not capable of identifying such subjects.

The questions raised by the findings currently under discussion emphasize the need for additional research. It would appear that such research should include structured interviews and objective measures of gambling outcomes with different types of gamblers. Such a procedure would permit a more in depth examination of these areas than was possible using the present research paradigm. Areas which need clarification include the relative success or failure of the different types of gamblers and the attitudes and perceptions with which different types of gamblers approach gambling.

#### Incidence of a Big Win

For the variable of incidence of a big win, the findings are open to some question. It was found that the difference between the admitted pathological gambler group and the total race track sample on this variable did not reach the alpha level which had been set. Over 85% of the admitted pathological gambler group reported having had a big

win. In contrast, only 58% of the total race track sample reported a big win. However, there were different perceptions of what constituted a big win for these two groups. A big win for the admitted pathological gambler group involved considerably more money (i.e., a much higher percentage of total income) than did a big win for the total race track sample. This was true for all measures of central tendency. For the admitted pathological gambler group, the mean percent of income that represented a big win was 25.19% (standard deviation = 32.83); the median was 9.5%; and the mode was 5%. For the total race track sample, the corresponding percentages were: mean = 12.32% (standard deviation = 22.68); median = 4.06%; and mode = 1%. A  $t$ -test on the difference between the means for these two groups was significant,  $t(353) = 1.77$ ,  $p < .04$ . It appears, therefore, that the relatively high incidence of a big win in the total race track sample resulted from a difference in the perception of what constituted a big win. Thus, in responding to the item on the Personal Information Survey, the two groups were, in effect, using different criteria. These findings must, therefore, be viewed with caution, but they do suggest that there is, in fact, a difference between pathological gamblers and non-pathological gamblers on this variable. Furthermore, the difference between the admitted pathological gambler group and the total race track sample in the perception of what constituted a big win, in that it was

significant, suggests that the two groups differ not only in the occurrence of a big win, but also in terms of what constitutes a big win, with the admitted pathological gambler group establishing a much higher criterion.

For the variable of incidence of a big win, it was found that there was a significant difference between the admitted pathological gambler group and the identified pathological gambler group, while there was no difference between the identified rational gambler group and a combination of the two pathological gambler groups. Since two groups that had been found to be different in the incidence of a big win were combined to test the latter hypothesis, the findings were open to some question. In order to clarify this point, Pearson  $\chi^2$  analyses were undertaken to compare the identified rational gambler group with each of the pathological gambler groups separately. In the identified rational gambler group, 13 of the 23 subjects reported a big win as compared to 11 out of 22 subjects in the identified pathological gambler group who reported a big win. These two groups were quite similar, Pearson  $\chi^2 (1) = .02$ ,  $p > .88$ . The comparison of the identified rational gambler group with the admitted pathological gambler group (where 18 of 21 subjects reported a big win), on the other hand, revealed a significant difference, Pearson  $\chi^2 (1) = 4.48$ ,  $p < .05$ . Furthermore, while the two identified groups were significantly different from the admitted pathological gam-

bler group, they were not significantly different from the total race track sample in which 192 of 331 subjects reported a big win, Pearson  $\chi^2 (1) = .35, p > .68$ .

One factor which might account for the differences between the identified rational and identified pathological gambler groups and the admitted pathological gambler group is the length of the subjects' gambling careers. The identified rational and identified pathological gambler groups had the shortest gambling careers of any of the groups under consideration (mean = 13.44 and 10.68 years, respectively). In contrast, the admitted pathological gambler group had the longest average gambling career (mean = 29.29 years). Thus, the two identified groups had much shorter gambling careers than did the admitted pathological gambler group, and, presumably, less opportunity to have a big win. The length of a subject's gambling career may, therefore, be a factor in determining whether that subject had had a big win. However, the same reasoning would apply to the total race track sample as well. Therefore, both the length of the subjects' gambling career and their perception of what constituted a big win appear to have had an affect on the findings for the variable of the incidence of a big win. Further research is needed to determine if, in fact, different types of gamblers differ in the incidence of a big win. Such research should control for the variables of length of gambling career and the criteria used to determine

if a big win had occurred.

#### Incidence of Gambling by the Subjects' Parents

The predictions concerning the incidence of gambling by the subjects' parents, which were made for the different groups, were not supported by the data. Thus, while there were no differences among the admitted pathological gambler group, the identified pathological gambler group, and the identified rational gambler group on this variable, there were also no differences between these groups and either the total race track sample or the control group. Furthermore, these findings were true for both the incidence of gambling to any extent by a parent and for the incidence of excessive gambling by a parent. Thus, it would appear that there is no relationship between parental gambling and the occurrence of pathological gambling for the subjects in this research. Further research where the extent and form of parental gambling could be explored in depth might reveal some distinction among different types of gamblers, but on the basis of the present findings, such research does not appear promising.

#### Degree of Externality

The hypotheses which had been made concerning the degree of externality of the three samples were not supported by the data. The finding that the total race track

sample was more externally oriented than the control group does tend to support the conclusion of Kusyszyn and Rubenstein (1971) that race track patrons, in general, appeared to be greater believers in luck or fate than the general population. The difference had, however, a relatively low level of significance ( $p < .10$ ) on the Duncan's Range Test. The degree of externality does not appear to differentiate the admitted pathological gambler group from either the total race track sample or the control group. Externality does not, therefore, appear to be a factor that is associated with the specific area of pathological gambling.

#### Methodological Issues

In addition to the discussion of the results of this investigation, there are several methodological issues which should be discussed.

The present investigation was substantially correlational in nature. There was no controlled experimental treatment of the subjects who participated. Therefore, the results, when they support the hypotheses that were made, can be interpreted as indicative of an association between a given variable and the different types of gamblers under consideration, but no cause-effect relationships are implied. There are many moral, ethical, and legal questions surrounding the general area of gambling and the more specific area of pathological gambling. Furthermore, relatively little

empirically verified information is available concerning the behaviors that were under consideration in this investigation. An in vivo investigation designed to collect further information to determine whether it was possible to differentiate among types of gamblers, and to seek additional support for some of the theoretical propositions which have been advanced, appeared to be the most appropriate way to proceed in this area. It was felt that such a study could enhance the data base and clarify hypotheses which would give direction to further research.

There were certain methodological problems which may place limitations on any generalizations made from the findings in this study. One issue is the fact that all of the data that was collected in this investigation was self-report. Thus, subjects wishing to present themselves in a particular light, whether their motivation was conscious or unconscious, could conceivably respond to the questionnaire in a manner which would correspond to the desired image. In fact, as noted above, the motivation to appear in a socially desirable light (i.e., as successful handicappers) may have been a moderating variable which affected the subjects' responses on the Race Track Betting Behavior Questionnaire.

A related methodological problem concerns the affect on the data of the response biases created by the demands of this investigation. In soliciting the participation of prospective subjects, no mention was made of pathological



gambling. However, many subjects made spontaneous comments which indicated that they felt that this was the primary concern of the investigation. Some of these comments were rather indirect, such as informing the interviewer that this was the subject's first trip to the race track or that the subject only attended once or twice a year. Others were more direct, such as, "I'm not the one you should be talking to. It's my friend here who has the problem." Despite assurances by the interviewers that a random sample of race track patrons was desired, it seems likely that a number of subjects approached the questionnaires under the influence of either their own preconceived notions concerning pathological gambling, or their conception of the purposes of the questionnaires or the expectations of the investigator.

A third methodological problem concerns the definition of some of the variables under consideration. The definitions of anxiety, defensiveness, and externality were operationally defined in terms of the score on the appropriate measuring instrument. However, the variables of a big win and gambling by the subjects' parents lacked such clear definition. These variables were, in effect, open to interpretation by the subjects. Thus, for the variable of incidence of gambling by the subjects' parents, one subject might indicate that a parent gambled because that parent made small wagers with friends on the Super Bowl. For a different subject, such behavior by a parent might not be

considered to be gambling. Moreover, the differentiation between moderate and excessive gambling was open to the same subjective interpretation. Similarly, the variable of the incidence of a big win was open to subjective interpretation. In fact, a significant difference was found between the admitted pathological gambler group and the total race track sample in the percentage of income which constituted a big win. Furthermore, the subjective interpretation issue applies to other items on the Personal Information Survey. Thus, while subjects were asked to indicate whether they considered their gambling behavior to be a problem, no elaboration was called for. While more information in these areas would have been desirable, obtaining it would have increased the demands that were being made on subjects who were under no obligation to participate in the research.

Finally, as noted in Chapter III, the race track sample, which was the primary sample in this investigation, had a marked bias toward younger, white subjects. While the sampling procedure was designed to obtain a random sample of race track patrons, there was no way to assure the randomness of those subjects who actually completed the questionnaires. Furthermore, it is difficult to assess what factors may have encouraged or discouraged participation in this project. One factor which did have an impact was the length of the survey. Thus, the return rate for the preliminary study, where the survey was only one-third the

length of the survey used in the present study, was more than double the return rate in the present study. On the other hand, the control group in the present study had a higher return rate than the race track sample. Thus, the length of the survey cannot be assumed to be the only factor which led to the relatively low return rate for the race track sample. One possible factor which may be applicable is the finding by Morris (1957) that his gambling subjects manifested a lower feeling of social responsibility than his control group. If participation in psychological research can be considered an indication of feelings of social responsibility, then the lower return rate for the race track sample may be interpreted as supporting Morris' findings. Another factor also seems relevant to this issue. In recent years, legalized gambling has become more and more widespread. However, gambling still carries the onus of being an immoral activity. Thus, by being asked to participate in a survey on gambling, the race track patrons were, in effect, "caught in the act" with possible resultant feelings of guilt and embarrassment. One way to expunge this guilt would have been to put the entire situation (along with the survey) out of mind. Other factors which may have had an influence include the educational level of the prospective subjects (the instructions and questions were somewhat complex) and the race and age of the interviewers all of whom were white and relatively young. Regardless of the reasons,

there were obvious biases in the race track sample. Thus, caution must be followed in attempting to generalize from the results found with this sample to the total race track population.

One final point should be made concerning the rate of return found for the samples in this investigation. While the return rate for the total race track sample was lower than that for the control group, it was still relatively high considering the amount of effort that was required of the subjects. The return rate in the present study might, for example, be contrasted with that of a survey of psychologists done by the Association for the Advancement of Psychology ("Psychologists on the Issues", 1977). The focus of this survey was research funding and research programs, and thus, presumably of relevance to those surveyed. However, only 3% of those surveyed bothered to complete and return the surveys.

While there are obvious methodological problems with the present investigation, efforts were made to exercise as much control as possible over the collection of the data. Thus, several interviewers were used, a random sampling method was devised and followed, and the sampling was done at several different locations for each population that was sampled. Moreover, in analyzing the data that was collected in this investigation, a quite restrictive level of alpha was used. In contrast, Morris (1957) chose to use an alpha

of .10 because of the fact that so little was known about gambling. Finally, the criteria that were set for the inclusion of subjects in the identified gambler groups were very restrictive. Thus, subjects with the highest scores on any given gambler scale were frequently excluded from that identified group because their score on one of the other scales was not in the bottom third. The composition of the identified groups, therefore, did not appear to represent the extremes in any of the four categories.

The various controls and restrictions that were employed in the present investigation, to some extent, offset the methodological problems discussed above. Furthermore, the fact that despite the restrictions that were imposed, the results generally support the hypotheses that were made adds credence to the validity of the findings.

## CHAPTER VI

### SUMMARY

The purpose of the present investigation was to attempt to differentiate among three types of gamblers (i.e., pathological gamblers, social gamblers, and rational gamblers) and to explore the possible relationships among these types of gamblers and three personality characteristics (i.e., anxiety, defensiveness, and externality) and two personal gambling experiences (i.e., history of gambling by the subjects' parents and the history of a big win in the subjects' own gambling history).

The literature which is available concerning pathological gambling consists, for the most part, of theoretical statements based on relatively small numbers of clinical cases (e.g., Barker & Miller, 1966a; 1966b; and 1968; Bergler, 1958; Boyd & Bolen, 1970; Gladstone, 1967; etc.) The few empirical studies which have been done in an effort to find empirical support for these theoretical positions (Hunter & Brunner, 1928; McGlothlin, 1954; and Morris, 1957) have found ambiguous or even contradictory results. However, in each of these studies, differences among the gambling subjects were found. If there are different types of gamblers, then attempting to investigate pathological gambling

behaviors while using subjects sampled from the general gambling population would tend to mask differences which would differentiate between pathological gamblers and non-pathological gamblers and non-gamblers. In fact, the one study which has compared a group of admitted pathological gamblers (i.e., members of Gamblers Anonymous) with a control group did find support for the hypotheses which had been made (Roston, 1961). Unfortunately, the number of pathological gamblers who seek help for their problem is relatively small, thus, placing limitations on research using admitted pathological gamblers as subjects. Furthermore, there may be significant differences between pathological gamblers who seek help and those who do not. Thus, it would appear that research should be directed toward developing methods of discriminating among different types of gamblers.

There have been several studies which identified different types of gamblers (Kusyszyn & Rubenstein, 1971; Martinez & LaFranchi, 1969; and Morris, 1957). These studies have consistently found three types of gamblers: pathological gamblers, social gamblers, and rational gamblers. However, only one of these studies, that by Martinez and LaFranchi, actually associated the different types of gamblers with some objective criterion (i.e., the amount of money that they won or lost). At the same time, this study was more observational than the other two and less well controlled. The validity of a trichotomized classification

of gamblers has not, therefore, been clearly established. The primary purpose of the present investigation was to attempt to identify different types of gamblers within the total gambling population. Moreover, these different types of gamblers were compared to a group of admitted pathological gamblers and to a group sampled from the general population.

The literature on risk taking (Alker, 1969; Cameron & Myers, 1966; and Kogan & Wallach, 1964) suggested that two variables, anxiety and defensiveness, served to moderate the approach subjects took in making decisions under conditions of risk. Furthermore, these same variables were cited as being associated with pathological gambling by various clinicians who had worked with this population (Bergler, 1958; Gladstone, 1967; Livingston, 1974; Moran, 1970; and Scodel, 1967). Thus, it was felt that the different types of gamblers would manifest different levels of anxiety and defensiveness.

Finally, the clinical literature indicated that two different gambling experiences, gambling by the individual's parents (Bolen & Boyd, 1968; Moran, 1970; and Seager, 1970) and the history of a big win in the individual's own gambling history (Coleman, 1976 and Custer, 1976), were related to the occurrence of pathological gambling. It was felt, therefore, that there would be differences among the three samples on these variables.



In the present investigation, three populations were sampled. The main sample consisted of 334 subjects drawn from the population of those individuals in attendance at four race tracks. Within this sample four types of gamblers were identified using scales derived from the Race Track Betting Behavior Questionnaire (Kusyszyn & Rubenstein, 1971) and the Rotter I-E Locus of Control Scale. The identified rational gambler group consisted of 23 subjects; the identified social gambler group consisted of 21 subjects; the identified pathological gambler group consisted of 22 subjects; and the identified system playing gambler group had 20 subjects. In addition to the race track sample, a sample of 21 admitted pathological gamblers and a control group consisting of 35 patrons at two shopping centers was collected.

Each subject completed the I-E Scale and the Race Track Betting Behavior Questionnaire (subjects in the control group who had never gambled did not complete the latter). In addition, each subject completed a modified version of the S-R Inventory of Anxiousness (only three of the original eleven anxiety provoking situations were used) and the Crowne-Marlowe Social Desirability Scale, which served as a measure of defensiveness. Finally, each subject completed a Personal Information Survey which requested demographic data and information concerning the subject's gambling history and experiences.

The participation of all subjects in this investigation was voluntary. The subjects in the race track sample and the control group were approached by an interviewer who briefly explained the purpose of the study and requested the prospective subject's participation. If a subject agreed to participate, he was given a set of five questionnaires to take home, fill out, and return in an envelope which was provided. In the race track sample, 32.9% of those who agreed to participate actually returned the questionnaires. For the control group, the return rate was 58.3%. The subjects in these two groups had the opportunity to win \$10.00 if they enclosed their name and address with the questionnaires. They could, if they chose, remain anonymous. 41.2% of the subjects took advantage of the opportunity for a chance to win \$10.00. Thus, while this was a factor, the chance to remain anonymous appeared to be more important.

The admitted pathological gambler group was obtained through the cooperation of the Regional Council of Gamblers Anonymous which distributed 35 sets of questionnaires at three different Gamblers Anonymous meetings. Of these 35 sets of questionnaires, 60% were returned.

There were no significant differences found between the race track sample and the control group in terms of the variables of age, race, and sex. The admitted pathological gambler group was, however, significantly older than the

other two samples. In addition, the race track sample had significant biases toward younger, white subjects when compared to the actual race track population.

The four scales used to identify the different types of gamblers were derived from a factor analysis of the Race Track Betting Behavior Questionnaire and the I-E Scale performed by Kusyszyn and Rubenstein (1971). A factor analysis done in a preliminary study by the present author had found partial support for the original factor analysis. However, the sample in the preliminary study was small, and hence, of low reliability. It was decided, therefore, to perform another factor analysis on these two instruments using the total race track sample.

Finally, although no formal hypotheses had been made, the demographic data and the information concerning the subjects' gambling histories were tabulated for the groups under consideration. The data was then used to develop profiles of the different types of gamblers. This information was also used to support and clarify the findings from the statistical analyses of the formal hypotheses that had been made.

The analysis of the data was first directed at establishing whether the group of subjects in the race track sample who had been identified as pathological gamblers was similar to the admitted pathological gambler group. It was hypothesized that the two groups would be the same on the

variables of anxiety, defensiveness, the incidence of gambling by the subjects' parents, and the incidence of a big win in the subjects' gambling careers. The first three hypotheses were supported by the data. The probability of differences as large as those which were found in the data occurring by chance ranged from  $>.26$  to  $>.79$ . Furthermore, for the data concerning the subjects' gambling histories and experiences, the identified pathological gambler group was more similar to the admitted pathological gambler group than were the other three groups on such variables as the largest bet in the last three years, the occurrence of a big loss, the amount of time spent on gambling activities, the age at which the subjects started gambling, the number of gambling activities engaged in, the frequency of gambling, and the incidence of complaints by significant others about the subjects' gambling behaviors. Thus, the two groups do appear to be similar. However, on each of the variables listed above, the admitted pathological gambler group gave more extreme responses than did the identified pathological gambler group. Moreover, on one of the formal hypotheses, the incidence of a big win, the two groups were significantly different ( $p < .03$ ). The two groups also differed greatly on the variables of age and length of gambling career. It appears possible, therefore, that the relative extremity of the personal gambling histories and the incidence of a big win for the admitted pathological gambler

group resulted from a gambling career which was considerably longer than that of the identified pathological gambler group. If this is the case, then it would appear that the identified pathological gambler group consists of potential pathological gamblers whose behavior has not yet reached the extreme form found in the admitted pathological gambler group. Alternatively, the pathological-like behaviors of the identified pathological gambler group may have resulted from their relative immaturity, and hence, would moderate with age. Further research is needed to evaluate these alternatives.

The second step in the analysis of the data was to determine whether the identified social gambler group, the identified system playing gambler group, and the control group were alike on the variables of anxiety and defensiveness. The data supported these hypotheses. The probability of differences as large as those which were found occurring by chance ranged from  $>.29$  to  $>.99$ . Thus, the three groups appear to be quite similar. Furthermore, the identified social gambler group was similar to the identified system playing gambler group on most of the variables on the personal gambling histories. The only items which were different were an abnormally high percentage of female subjects in the identified system playing gambler group, and a relatively high rate of success at gambling reported by the same group. These differences may simply have been arti-

facts of the research design or may suggest that using a system is both appealing to females and likely to lead to a greater amount of success. In general, however, the identified social gambler group and the identified system playing gambler group appeared to be similar to each other and not significantly different from a sample collected from the general population. These three groups were, therefore, combined for the purposes of further analysis.

The next step in the analysis was to compare the combined pathological group with the combined social group and the combination of these two groups with the identified rational gambler group on the variables of anxiety and defensiveness. The literature on risk taking (i.e., Kogan & Wallach, 1964, etc.) suggested that the combined pathological group would manifest the highest level on both of these variables, while the identified rational gambler group would manifest the lowest levels. On the variable of anxiety, the results were not significant, but they were in the direction which had been predicted, and they did approach significance. Furthermore, a derivative hypothesis, that the identified pathological gambler group was significantly more anxious than the identified rational gambler group, was significant ( $p < .01$ ). For the variable of defensiveness, the findings were significant. However, they were in the opposite direction to that which had been predicted. Thus, the identified rational gambler group was the most defensive, while

the combined pathological group was the least defensive. Further analysis suggested that the motivation to appear in a socially desirable light may have affected the inclusion of subjects in one or the other of the identified gambler groups. Thus, subjects in the identified rational gambler group may have been trying to present themselves as successful gamblers rather than actually being rational in their approach to gambling. This motivation appears to be identical to the motivation which would lead to a high score on the Social Desirability Scale and may, therefore, account for this group's high score on that scale. On the other hand, subjects who admitted to socially undesirable gambling behaviors (i.e., the pathological gambler groups) did not seem to be motivated to appear in a socially desirable light, and thus, would be expected to show low levels of defensiveness on other measures of this variable. These findings do raise the question of whether the rational gamblers, as identified in this research, actually approach gambling in a rational manner, and whether they are more successful than other types of gamblers. While there is some indication that this group is more successful (i.e., they reported a relatively high level of success in their gambling), this data is also subject to the influence of the motivation to appear in a socially desirable light. A second question raised by these findings is whether the difference between the expected findings and the actual results on the variable

of defensiveness has implications for the relative success of the different types of gamblers, and for their perception of what gambling represents. Kogan and Wallach's study (1964) suggested that subjects who are low in defensiveness and high in anxiety (i.e., the pathological gambler groups) function poorly in manifest problem solving situations. On the other hand, subjects who are high on defensiveness and low on anxiety (i.e., the identified rational gambler group) have difficulty with tasks performed in an interpersonal situation. What affect, if any, these differences would have on a subject's gambling behaviors and success would have to be evaluated through further research.

For the variable of the incidence of a big win, it had been hypothesized that the identified rational gambler group, the identified pathological gambler group, and the admitted pathological gambler group would be similar. Furthermore, it was predicted that the admitted pathological gambler group would be significantly different from the total race track sample. The latter prediction was not supported by the data. However, the findings did approach significance ( $p < .022$ ). On the other hand, the identified rational gambler group and the identified pathological gambler group, while similar to each other, were significantly different from the admitted pathological gambler group, and were, in fact, similar to the total race track sample. Thus, this variable did not discriminate among the identified



gambler groups. There were, however, significant differences between the admitted pathological gambler group and the other groups on the variables of the length of their gambling careers and the percentage of income which constituted a big win. These differences were likely to have affected the findings on the variable of the incidence of a big win, but further research would be needed to determine exactly what the effects were.

On the variable of gambling by the subjects' parents, it was hypothesized that the identified rational gambler group, the identified pathological gambler group, and the admitted pathological gambler group would be similar. These hypotheses were supported by the data. However, it was also hypothesized that the admitted pathological gambler group would be significantly different from the total race track sample and the control group. These hypotheses were not supported by the data. For these hypotheses, the probability of differences as large as those found occurring by chance were  $>.72$  and  $>.15$ , respectively. Thus, gambling by the subjects' parents did not discriminate among the different groups.

The three samples were also compared on their degree of externality. It was hypothesized that the admitted pathological gambler group would be significantly more externally oriented than either the total race track sample or the control group. However, the only significant difference

that emerged was that the total race track sample was significantly more externally oriented than the control group. While this may have implications for a comparison of the gambling population with the general population, it does not appear to be relevant as a discriminator among types of gamblers.

The final analysis of the data was to perform a factor analysis on the Race Track Betting Behavior Questionnaire and the I-E Scale. The results of this factor analysis showed considerable support for the Pathological Gambler Scale; moderate support of the Rational Gambler Scale and the System Playing Gambler Scale; and only minimal support for the Social Gambler Scale. The lack of totally reliable items in the factor analysis along with possible differences among the populations which were sampled may have contributed to the lack of total support for the four scales. Moreover, the fact that the hypotheses made regarding similarities and differences among the groups of gamblers identified by these scales were, in general, supported, adds credence to the viability of these scales.

While the two gambling experiences under consideration in this investigation were not totally supported by the data, most of the hypotheses that were made were supported. The findings are, therefore, promising and will hopefully lead to further research in this area.

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APPENDIX A

## Personal Information Survey

## I. Personal Information:

Age: \_\_\_\_\_ Sex: \_\_\_\_\_ Race: \_\_\_\_\_ Religion: \_\_\_\_\_

Marital Status: Single \_\_\_\_\_  
 .. Married \_\_\_\_\_, how long \_\_\_\_\_  
 (check one) Widow(er) \_\_\_\_\_, how long \_\_\_\_\_  
 Separated \_\_\_\_\_, how long \_\_\_\_\_  
 Divorced \_\_\_\_\_, how long \_\_\_\_\_

Years of Education Completed: less than 8 \_\_\_\_\_ 13 years \_\_\_\_\_  
 8 years \_\_\_\_\_ 14 years \_\_\_\_\_  
 (check one) 9 years \_\_\_\_\_ 15 years \_\_\_\_\_  
 10 years \_\_\_\_\_ 16 years \_\_\_\_\_  
 11 years \_\_\_\_\_ more than 16 \_\_\_\_\_  
 12 years \_\_\_\_\_

Occupation: \_\_\_\_\_

Annual Income: Under \$5,000 \_\_\_\_\_ \$15,000 to \$20,000 \_\_\_\_\_  
 (check one) \$5,000 to \$10,000 \_\_\_\_\_ \$20,000 to \$25,000 \_\_\_\_\_  
 \$10,000 to \$15,000 \_\_\_\_\_ Over \$25,000 \_\_\_\_\_

## II. Family Gambling History:

- 1) Did any of the following gamble?      2) If yes, was their gambling moderate or excessive?  
 (check one)

	yes	no	moderate	excessive
a) Your father	_____	_____	_____	_____
b) Your mother	_____	_____	_____	_____
c) Your sisters or brothers	_____	_____	_____	_____
d) Other close relatives	_____	_____	_____	_____

## III. Personal Gambling History:

- 1) How old were you when you first gambled? \_\_\_\_\_
- 2) As you remember it, when you first started gambling did you usually:  
 Win \_\_\_\_\_ Break Even \_\_\_\_\_ Lose \_\_\_\_\_
- 3) Over the years do you feel that you have:  
 a) won more than you lost \_\_\_\_\_  
 b) about broken even \_\_\_\_\_ (check one)  
 c) lost more than you won \_\_\_\_\_

(continued)



## Personal Information Survey

- 4) In terms of a percentage of annual income, what would you consider to be a "big win"?
- a) 1% of annual income \_\_\_\_\_  
 b) 2% of annual income \_\_\_\_\_  
 c) 3% of annual income \_\_\_\_\_  
 d) 4% of annual income \_\_\_\_\_  
 e) 5% of annual income \_\_\_\_\_  
 f) some other percentage \_\_\_\_\_, please specify \_\_\_\_\_
- 5) Have you ever had a "big win"? yes \_\_\_\_\_ no \_\_\_\_\_  
 a) If yes, what year was it? \_\_\_\_\_
- 6) Have you ever lost more than you felt you could afford?  
 yes \_\_\_\_\_ no \_\_\_\_\_  
 a) If yes, how much did you lose? \$ \_\_\_\_\_  
 b) If yes, what year was it? \_\_\_\_\_

## IV. Current Gambling Behaviors

- 1) How frequently do you go to the race track? (check one)  
 Every day \_\_\_\_\_ Once every 1 or 2 weeks \_\_\_\_\_  
 3 to 5 times a week \_\_\_\_\_ Less than once every 2 weeks \_\_\_\_\_  
 1 or 2 times a week \_\_\_\_\_
- 2) Check those gambling activities in which you participate:  
 Wagering on card games \_\_\_\_\_ Lotteries \_\_\_\_\_  
 Wagering on sports events \_\_\_\_\_ Bingo \_\_\_\_\_  
 Wagering on dice games \_\_\_\_\_ Other \_\_\_\_\_
- 3) Check the one gambling activity listed below which you feel is your favorite:  
 Wagering on horse races \_\_\_\_\_ Lotteries \_\_\_\_\_  
 Wagering on card games \_\_\_\_\_ Bingo \_\_\_\_\_  
 Wagering on sports events \_\_\_\_\_ Other \_\_\_\_\_  
 Wagering on dice games \_\_\_\_\_ No Favorite \_\_\_\_\_
- 4) What is the largest bet you have made in the last 3 years? \$ \_\_\_\_\_
- 5) On the average, how many hours a week do you devote to gambling activities (including time spent handicapping races, evaluating sports events, and time spent going to and from gambling activities)? \_\_\_\_\_ hours per week.
- 6) Do you feel that your gambling behavior is a problem for you?  
 yes \_\_\_\_\_ no \_\_\_\_\_
- 7) Have any of the following ever complained about your gambling?  
 Parent \_\_\_\_\_ Spouse \_\_\_\_\_  
 Brother or sister \_\_\_\_\_ Other relative \_\_\_\_\_  
 Close friend \_\_\_\_\_ Employer \_\_\_\_\_
- a) if yes, did they complain about:  
 The amount of time you spend gambling \_\_\_\_\_  
 The amount of money involved \_\_\_\_\_ (check one)  
 Both \_\_\_\_\_

## Race Track Betting Behavior Questionnaire

For each statement below, decide which of the answers to the right best applies to you. Check the proper circle. Please be as honest as you can.

	Almost always	often	some- times	seldom	almost never
1. I go to the track to relax.	0	0	0	0	0
2. I bet on every race.	0	0	0	0	0
3. When I am down money, I bet more to try to get it back.	0	0	0	0	0
4. I bet to win.	0	0	0	0	0
5. The amount I bet is affected by the odds.	0	0	0	0	0
6. I bet on tips from trainers, friends, etc.	0	0	0	0	0
7. I have a "system."	0	0	0	0	0
8. Luck is important for winning at the track.	0	0	0	0	0
9. I bet to show.	0	0	0	0	0
10. I feel that the races are fixed.	0	0	0	0	0
11. I study the racing form or program.	0	0	0	0	0
12. I bet less when the track is slow or sloppy.	0	0	0	0	0
13. Other people change my mind regarding the horse I wanted to bet.	0	0	0	0	0
14. I feel badly after I have a losing day.	0	0	0	0	0
15. When I go to the track, I am confident of winning.	0	0	0	0	0

Personal Belief Questionnaire (I-E)

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair which you more strongly believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal beliefs. Obviously there are no right or wrong answers.

Please answer the items carefully, but do not spend too much time on any one item. Be sure to choose on (and only one) answer for each choice. Circle the letter of the choice you have selected.

1. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from mistakes they make.
2. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
3. a. In the long run, people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
4. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
5. a. Without the right breaks, one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
6. a. No matter how hard you try some people just don't like you.  
b. People who can't get other people to like them don't understand how to get along with others.
7. a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
8. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.  
b. Getting a good job depends mainly on being in the right place at the right time.
9. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
10. a. The average citizen can have an influence in government decisions.  
b. This world is run by the few people in power, and there is not much that the little guy can do about it.

(continued)

## Personal Belief Questionnaire (I-E)

11. a. When I make plans, I am almost certain that I can make them work.  
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
12. a. In my case getting what I want has little or nothing to do with luck.  
b. Many times we might just as well decide what to do by flipping a coin.
13. a. Who gets to be boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
14. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
b. By taking an active part in political and social affairs the people can control world events.
15. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There really is no such thing as "luck".
16. a. It is hard to know whether or not a person really likes you.  
b. How many friends you have depends on how nice a person you are.
17. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
18. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
19. a. Many times I feel that I have little influence over the things that happen to me.  
b. It is impossible for me to believe that chance or luck plays an important role in my life.
20. a. People are lonely because they don't try to be friendly.  
b. There's not much use in trying too hard to please people, if they like you, they like you.
21. a. What happens to me is my own doing.  
b. Sometimes I feel that I don't have enough control over the direction my life is taking.
22. a. Most of the time I can't understand why politicians behave the way they do.  
b. In the long run, the people are responsible for bad government on a national as well as a local level.

## Personal Reaction Inventory (C-II)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. If you feel the statement is true as applied to you, circle the T after the statement; if false as applied to you, circle the F after the statement.

1. Before voting I thoroughly investigate the qualifications of all candidates. .... T F
2. I never hesitate to go out of my way to help someone in trouble. .... T F
3. It is sometimes hard for me to go to work if I am not encouraged. .... T F
4. I have never intensely disliked anyone. .... T F
5. On occasion, I have had doubts about my ability to succeed in life. .... T F
6. I sometimes feel resentful when I don't get my way. .... T F
7. I am always careful about my manner of dress. .... T F
8. My table manners at home are as good as when I eat out in a restaurant. .... T F
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. .... T F
10. On a few occasions, I have given up doing something because I thought too little of my ability. .... T F
11. I like to gossip at times. .... T F
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. .... T F
13. No matter who I'm talking to, I'm always a good listener. .... T F
14. I can remember "playing sick" to get out of something. .... T F
15. There have been occasions when I took advantage of someone. .... T F
16. I'm always willing to admit when I make a mistake. .... T F
17. I always try to practice what I preach. .... T F
18. I don't find it particularly difficult to get along with loud mouthed obnoxious people. .... T F

(continued)

## Personal Reaction Inventory (C-M)

- |     |                                                                                          |   |   |
|-----|------------------------------------------------------------------------------------------|---|---|
| 19. | I sometimes try to get even rather than<br>forgive and forget.....                       | T | F |
| 20. | When I don't know something, I don't at all<br>mind admitting it.....                    | T | F |
| 21. | I am always courteous, even to people who are<br>disagreeable.....                       | T | F |
| 22. | At times I have really insisted on having things<br>my own way.....                      | T | F |
| 23. | There have been occasions when I felt like<br>smashing things.....                       | T | F |
| 24. | I would never think of letting someone else<br>be punished for my wrong-doings.....      | T | F |
| 25. | I never resent being asked to return a favor.....                                        | T | F |
| 26. | I have never been irked when people expressed<br>ideas very different from my own.....   | T | F |
| 27. | I have never made a long trip without checking<br>the safety of my car.....              | T | F |
| 28. | There have been times when I was quite jealous<br>of the good fortune of others.....     | T | F |
| 29. | I have almost never felt the urge to tell<br>someone off.....                            | T | F |
| 30. | I am sometimes irritated by people who<br>ask favors of me.....                          | T | F |
| 31. | I have never felt that I was punished without<br>cause.....                              | T | F |
| 32. | I sometimes think when people have a misfortune<br>they only got what they deserved..... | T | F |
| 33. | I have never deliberately said something that hurt<br>someone's feelings.....            | T | F |

## Inventory of Attitudes Toward Specific Situations

This inventory is designed to study peoples' reactions and attitudes toward various types of situations. Below are represented three situations which most people have experienced personally or vicariously through stories, etc. For each of the situations certain common types of personal reactions and feelings are listed. Indicate by circling the appropriate number on the continuum given after each of these reactions or feelings, the degree to which you would show that reaction or feeling.

## I. You are getting up to give a speech before a large group.

1. Your heart beats faster.  
Not at all 1-----2-----3-----4-----5 Very much so
2. You get an "uneasy feeling."  
Not at all 1-----2-----3-----4-----5 Very much so
3. Your emotions disrupt your actions.  
Not at all 1-----2-----3-----4-----5 Very much so
4. You feel exhilarated and thrilled.  
Not at all 1-----2-----3-----4-----5 Very much so
5. You want to avoid the situation.  
Not at all 1-----2-----3-----4-----5 Very much so
6. You perspire.  
Not at all 1-----2-----3-----4-----5 Very much so
7. You need to urinate frequently.  
Not at all 1-----2-----3-----4-----5 Very much so
8. You enjoy the challenge.  
Not at all 1-----2-----3-----4-----5 Very much so
9. Your mouth gets dry.  
Not at all 1-----2-----3-----4-----5 Very much so
10. You become immobilized.  
Not at all 1-----2-----3-----4-----5 Very much so
11. You get a full feeling in your stomach.  
Not at all 1-----2-----3-----4-----5 Very much so
12. You seek experiences like this.  
Not at all 1-----2-----3-----4-----5 Very much so
13. You have loose bowels.  
Not at all 1-----2-----3-----4-----5 Very much so
14. You experience nausea.  
Not at all 1-----2-----3-----4-----5 Very much so

(continued)

## Inventory of Attitudes Toward Specific Situations

- II. You are entering a competitive contest before spectators.
1. Your heart beats faster.  
Not at all 1-----2-----3-----4-----5 Very much so
  2. You get an "uneasy feeling."  
Not at all 1-----2-----3-----4-----5 Very much so
  3. Your emotions disrupt your actions.  
Not at all 1-----2-----3-----4-----5 Very much so
  4. You feel exhilarated and thrilled.  
Not at all 1-----2-----3-----4-----5 Very much so
  5. You want to avoid the situation.  
Not at all 1-----2-----3-----4-----5 Very much so
  6. You perspire.  
Not at all 1-----2-----3-----4-----5 Very much so
  7. You need to urinate frequently.  
Not at all 1-----2-----3-----4-----5 Very much so
  8. You enjoy the challenge.  
Not at all 1-----2-----3-----4-----5 Very much so
  9. Your mouth gets dry.  
Not at all 1-----2-----3-----4-----5 Very much so
  10. You become immobilized  
Not at all 1-----2-----3-----4-----5 Very much so
  11. You get a full feeling in your stomach.  
Not at all 1-----2-----3-----4-----5 Very much so
  12. You seek experiences like this.  
Not at all 1-----2-----3-----4-----5 Very much so
  13. You have loose bowels.  
Not at all 1-----2-----3-----4-----5 Very much so
  14. You experience nausea.  
Not at all 1-----2-----3-----4-----5 Very much so

(continued)



## Inventory of Attitudes Toward Specific Situations

## III. You are going into an interview for a very important job.

1. Your heart beats faster.  
Not at all 1-----2-----3-----4-----5 Very much so
2. You get an "uneasy feeling."  
Not at all 1-----2-----3-----4-----5 Very much so
3. Your emotions disrupt your actions.  
Not at all 1-----2-----3-----4-----5 Very much so
4. You are exhilarated and thrilled.  
Not at all 1-----2-----3-----4-----5 Very much so
5. You want to avoid the situation.  
Not at all 1-----2-----3-----4-----5 Very much so
6. You perspire.  
Not at all 1-----2-----3-----4-----5 Very much so
7. You need to urinate frequently.  
Not at all 1-----2-----3-----4-----5 Very much so
8. You enjoy the challenge.  
Not at all 1-----2-----3-----4-----5 Very much so
9. Your mouth gets dry.  
Not at all 1-----2-----3-----4-----5 Very much so
10. You become immobilized.  
Not at all 1-----2-----3-----4-----5 Very much so
11. You get a full feeling in your stomach.  
Not at all 1-----2-----3-----4-----5 Very much so
12. You seek experiences like this.  
Not at all 1-----2-----3-----4-----5 Very much so
13. You have loose bowels.  
Not at all 1-----2-----3-----4-----5 Very much so
14. You experience nausea.  
Not at all 1-----2-----3-----4-----5 Very much so

APPENDIX B

Cover Letter for the Race Track Sample (original procedure)

Psychology Department  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, Illinois 60626

Dear Survey Participant:

Recently, you agreed to participate in a survey concerning gambling behaviors and their relationship to a person's beliefs, attitudes, and opinions. Enclosed are the questionnaires which you agreed to fill out, along with an envelope in which you can return them when they are completed.

The area of gambling behaviors has been largely ignored by the social sciences. This survey will, to some extent, rectify this by providing objective data which will lead to a better understanding of this area. The information you provide will, therefore, be of considerable value and your cooperation is greatly appreciated.

Specific instructions are given for each of the questionnaires, but some general comments are in order. First, it should be stressed that the questionnaires deal with personal behaviors, beliefs, attitudes, and opinions. Obviously, there are no right or wrong answers. It is requested, therefore, that you answer the questions that are asked as honestly as you can in terms of your own behaviors, beliefs, attitudes, and opinions.

Secondly, in order that the final results of this survey accurately reflect the way the different areas under consideration relate to each other, it is important that you answer all of the questions that are asked.

Finally, some of the information that is requested is of a personal nature. All of this information is important to the purposes of this survey. However, I feel that it is equally important that your privacy be protected. Therefore, no one but myself will have access to the lists of names and addresses of the people who are participating in the survey. Furthermore, as soon as the questionnaires are returned, your name will be removed from the file so that your privacy will be assured.

I would again like to thank you for cooperating in this survey and assure you that your contribution is a valuable one.

Very truly yours,

Edward Conrad

Follow-up Letter sent to the Race Track Sample (original procedure)

Psychology Department  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, Illinois 60626

Dear Survey Participant:

Several weeks ago I sent you a set of questionnaires with the request that you fill them out and return them. I have not yet received these from you. It is important to the accuracy of this study that as many of those who agreed to participate as possible actually do complete the questionnaires and return them. I am, therefore, urging you to take the time to fill these out and return them in the enclosed envelope. I have also enclosed a second set of questionnaires in case you have lost or misplaced the original set.

Very truly yours,

Edward Conrad

Cover Letter for the Race Track Sample (revised procedure)

Psychology Department  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, Illinois 60626

Dear Survey Participant:

The enclosed questionnaires are part of a doctoral research project concerning the relationship of gambling experiences and behaviors to a person's attitudes, beliefs, and opinions. The area of gambling behaviors has been largely ignored by the social sciences. This survey will, to some extent, rectify this by providing objective data which will lead to a better understanding of this area. The information that you provide will, therefore, be of considerable value and your cooperation is greatly appreciated.

Specific instructions are given for each of the questionnaires, but some general comments are in order. First, it should be stressed that the questionnaires deal with personal behaviors, beliefs, attitudes, and opinions. Obviously, there are no right or wrong answers. It is requested, therefore, that you answer the questions that are asked as honestly as you can in terms of your own behaviors, beliefs, attitudes, and opinions.

Secondly, in order that the final results of this survey accurately reflect the way the different areas under consideration relate to each other, it is important that you answer all of the questions that are asked.

In order to encourage participation in this project, the names of five participants will be drawn by Mr. Robert Seidenberg, reporter for the racing paper, Between the Races. Each of the five will receive a check in the amount of \$10.00. The names of the winners will be published in Mr. Seidenberg's column, Front O' the Barn. In order to be eligible for participation in the drawing, the completed surveys must be received within two weeks of the date they were given to you.

Finally, some of the information that is requested is of a personal nature. All of this information is important to the purposes of this survey. However, I feel that it is equally important that your privacy be protected. Therefore, please be sure that you do not put your name on any of the questionnaires. If you wish to participate in the drawing, put your name and address on a separate piece of paper and enclose it with the questionnaires. When the surveys are received, your name and address will be separated from the questionnaires so that it will be impossible to associate your name with the answers you have given. You can, of course, maintain total anonymity by not enclosing your name and address.

I would again like to thank you for cooperating in this survey and assure you that your contribution is a valuable one.

Very truly yours,

Edward Conrad

Cover Letter for the Control Group

Psychology Department  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, Illinois 60626

Dear Survey Participant:

The enclosed questionnaires are part of a doctoral research project concerning the relationship of gambling experiences and behaviors to a person's attitudes, beliefs, and opinions. The area of gambling behaviors has been largely ignored by the social sciences. This survey will, to some extent, rectify this by providing objective data which will lead to a better understanding of this area. The information that you provide will, therefore, be of considerable value and your cooperation is greatly appreciated.

Specific instructions are given for each of the questionnaires, but some general comments are in order. First, it should be stressed that the questionnaires deal with personal behaviors, beliefs, attitudes, and opinions. Obviously, there are no right or wrong answers. It is requested, therefore, that you answer the questions that are asked in terms of your own behaviors, beliefs, attitudes, and opinions as honestly as you can.

Secondly, in order that the final results of this survey accurately reflect the ways the different areas under consideration relate to each other, it is important that you answer all of the questions that are asked. However, if you have never bet on a horse race, you should skip the Race Track Betting Behavior Questionnaire. Similarly, if you have never gambled at all, you should skip parts III and IV of the Personal Information Survey. Please answer all other questions.

In order to encourage participation in this project, the names of five participants will be drawn. Each of the five will receive a check in the amount of \$10.00.

Finally, some of the information that is requested is of a personal nature. All of this information is important to the purposes of this survey. However, I feel that it is equally important that your privacy be protected. Therefore, please be sure that you do not put your name on any of the questionnaires. If you wish to participate in the drawing, put your name and address on a separate sheet of paper and enclose it with the questionnaires. When the surveys are received, your name and address will be separated from the questionnaires so that it will be impossible to associate your name with the answers you have given. You can, of course, maintain total anonymity by not enclosing your name and address.

I would again like to thank you for cooperating in this survey and assure you that your contribution is a valuable one.

Very truly yours,

Edward Conrad

Cover Letter for the Admitted Pathological Gambler Group

Psychology Department  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, Illinois 60626

Dear Gamblers Anonymous Member:

Enclosed are a set of questionnaires which I am using in a research project concerning gambling. I am a doctoral candidate in the psychology department at Loyola University and this project is for my doctoral dissertation. Essentially, I am trying to find out if there is a relationship between an individual's experiences with gambling and his beliefs, attitudes, and opinions. While I am seeking the participation of a large number of individuals who are currently gambling, I believe that individuals, such as yourself, who have a problem with gambling, have recognized it, and are trying to do something about it, can make a particularly significant contribution to this research. I am, therefore, asking that you take a few minutes to fill out these surveys and return them in the envelope provided.

Specific instructions are given for each of the questionnaires, but some general comments are in order. First, it should be stressed that the questionnaires deal with personal behaviors, beliefs, attitudes, and opinions. Obviously, there are no right or wrong answers. It is requested, therefore, that you answer the questions that are asked as honestly as you can in terms of your own behaviors, beliefs, attitudes, and opinions.

Secondly, in order that the final results of this survey accurately reflect the way the different areas under consideration relate to each other, it is important that you answer all of the questions that are asked.

Finally, you will notice that two of the questionnaires, the Personal Information Survey and the Race Track Betting Behavior Questionnaire, contain questions dealing directly with gambling behaviors and experiences. Please answer these questions in terms of what you did when you were gambling. Also, please answer the question at the bottom of this page.

I would like to take this opportunity to thank you for cooperating in this survey and to assure you that your contribution is a valuable one.

Very truly yours,

Edward Conrad

I have not gambled for \_\_\_\_\_ years and \_\_\_\_\_ months.

APPROVAL SHEET

The dissertation submitted by Edward L. Conrad has been read and approved by the following committee:

Dr. Patricia M. Barger, Director  
Professor, Psychology, Loyola

Dr. John R. Shack  
Associate Professor, Psychology, Loyola

Dr. Ann E. Heilman  
Assistant Professor, Psychology, Loyola

Dr. Gerald Mozdzierz  
Staff Psychologist  
Hines Veterans Administration Hospital

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

30 November 77  
Date

Patricia M Barger, Ph.D  
Director