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**Analysis of The Gambling Research Instrument**

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### Abstract

The Gambling Research Instrument (GRI; Feasel, 2000) was developed to provide a continuously scored index of problematic gambling involvement for use in research populations. A total of 41 items that correspond to the ten DSM-IV criteria for Pathological Gambling were generated. In the current study, data provided by over 100 casino patrons are used to refine the GRI to a 25 item scale, examine its structure, and investigate its internal and external validity. Factor analysis of instrument items is employed to confirm a three-factor model that comprises Dependence, Loss of Control, and Disruption. Structural equation modeling is used to explore a model in which increasing Dependence causes Loss of Control, which leads to subsequent Disruption.

### Analysis of the Gambling Research Instrument

In 1980 Pathological Gambling was first recognized as a mental disorder in the Third Diagnostic and Statistical Manual of Mental Disorders (DSM-III, APA, 1980). At the time, Pathological Gambling was thought to be a severe neurotic disorder (Murray, 1993) classified as an Impulse Disorder. In 1987, the DSM-III-R revised the diagnosis, adding additional criteria used to describe Pathological gambling, similar to how we think of Pathological Gambling today (APA, 1987). Further revisions were introduced in the DSM-IV, in which ten criteria for diagnosis were established (APA, 1994). If five of the criteria are satisfied and cannot be accounted for by a Manic episode, the individual is diagnosed as a Pathological Gambler.

The DSM-IV classifies Pathological Gambling as an Impulse Disorder Not Elsewhere Classified. Impulse Disorders Not Elsewhere Classified are described using three general characteristics: failure to resist an impulse or drive (Loss of Control), temptation to perform an act that is harmful to the person or others (Disruption), and increased feeling of tension or arousal before an act and relief or gratification after completing the act (Dependence).

The Impulse Disorder diagnosis is general. However, the DSM-IV also lists ten criteria that describe symptoms and behaviors that are specific to Pathological Gambling. Each of the ten specific criteria corresponds to one of the three more general characteristics of Impulse Disorders Not Elsewhere Classified. For example, the first criterion, “preoccupation with gambling,” corresponds to Dependence. The ninth criterion, “has jeopardized or lost a significant relationship, job or education or career opportunity because of gambling,” is more characteristic of Disruption. Such assumptions should be relatively easy to test; however, very little research has been devoted to examining the factorial structure of Pathological Gambling. One exception is provided by Steel and Blaszczynski (1996), administering multiple instruments to a population

of Pathological Gamblers in order to measure specific characteristics such as depression and impulsivity. Steel and Blaszczynski found a four factor structure: Psychological Distress, Sensation Seeking, Crime and Liveliness, and Impulsive Antisocial. A strength of this study was the evaluation of a variety of personality traits and cognitive and behavioral tendencies (e.g. Becks Depression Inventory, Eysenck and Eysenck Impulsivity Scale, and Zuckerman's Sensation Seeking Scale) among pathological gamblers. However, the study did not allow for exploration or a detailed description of the factorial structure of Pathological Gambling as defined by the DSM-IV.

Pathological Gambling does not easily lend it self to an exploration of the factor structure. Since the recognition of Pathological Gambling in the DSM III the literature has largely focused on two main areas of research. The first area consists of investigations that focus on the comorbidity of additional pathologies such as substance abuse, obsessive-compulsive disorder, and personality disorders (e.g. Blaszczynski and Alex, 1999). The second area attempts to find specific differences between pathological gamblers and recreational gamblers or individuals who do not gamble. Commonly the variables of interest are personality traits (e.g. Blaszczynski; Frisk 1998; Dickerson, Cunningham, England, and Hinchy, 1991; Levy and Finberg, 1991), and research is conducted to demonstrate that pathological gamblers score higher on various traits such as risk or impulsivity. Results from such research are often inconclusive, or they contradict findings from previous research (Dickerson et al, 1991; Lesieur and Rosenthal, 1991). When differences between pathological and recreational or nongamblers are observed, researchers may conclude that the variable on which groups differed is the cause of pathological gambling. However, such logic becomes circular. For example, while risk seeking or depression may cause pathological gambling, it may also be true that they are merely indicators of

pathological gambling (Feasel and Jones, 2000). It is necessary to develop a different method that will facilitate the investigation of relationships between problem and pathological gambling and personality, demographic or other experiential variables.

Another factor that has complicated the study of the structure of pathological gambling and its relation to other individual difference variables is the nature of diagnostic instruments that are most commonly used in gambling research. Many scales consist of several “yes/no” questions, and a cut-off score determines diagnosis of problem or pathological gambling. If an individual’s score is above a particular point (i.e., replies “yes” to a specified number of questions), he or she is considered a likely candidate for Pathological Gambling. One of the most popular examples of such a scale is the South Oaks Gambling Screen (SOGS; Lesieur and Blume, 1987). Lesieur and Blume developed a 26 item scale to diagnose Pathological Gambling. Twenty dichotomous (i.e., “yes/no”) items count toward the final score. A score of one is assigned for each response of “yes,” and a total score of five or higher is considered to indicate probable Pathological Gambling. Many other diagnostic instruments have been developed, including Gamblers Anonymous (GA) and National Opinion Research Company (NORC) measures. Both instruments rely exclusively on dichotomously-scored items; scores of seven for the Gambler Anonymous measure and five for the NORC measure result in classification as a probable pathological gambler. These instruments are useful for studying the epidemiology of pathological gambling. However, they are not useful for studying relationships between problem gambling and other individual difference variables (Feasel and Jones, 2000). Item thresholds are so high that most respondents have scores of four or less, yielding a bifurcated distribution of problem and nonproblem gamblers (or, at best, a trifurcated distribution of pathological, problem, and nonpathological gamblers). Such a range of scores would be very difficult to use,

for example, in order to examine the relationship between problem gambling and depression. It is necessary to develop a scale that would allow for greater variability in scores, in addition to measuring the level of problem gambling behavior.

In the current study, the Gambling Research Instrument (GRI; Feasel and Jones, 2000) is analyzed, as an alternative to diagnostic and screening measures, to study Pathological and Problem Gambling. The GRI was designed to measure the level at which an individual is described by each of the ten criteria given in the DSM-IV. The GRI does this by allowing respondents to indicate varying levels of agreement or frequency of behaviors using Likert scale responses.

In addition, the factorial structure of Pathological Gambling, as defined by the DSM-IV characteristics of Impulsivity Disorders Not Elsewhere Diagnosed, can be explored. A three factor structure is hypothesized in which the factors describe each of the three general characteristics of Impulsivity Disorders. The factorial structure will also be used to explore the characteristics of the GRI such as its internal validity and reliability. Lastly, a causal relationship between each of the three factors is examined. It is hypothesized that the factors describe a causal sequence of severity, in which Dependence causes Loss of Control, which in turn causes subsequent Disruption.

## Method

### Participants

Data were collected from 128 experienced gamblers, recruited in one of three ways: 32 subjects were selected from a casino after playing roulette for at least 45 minutes, 47 subjects were recruited by mailing out a letter to VIP members of a mid-western casino boat, and the remaining 49 subjects responded to an ad in select local papers requesting experienced gamblers.

Each subject was asked to complete the Gambling Research Instrument (GRI; Feasel 2000) in addition to a variety of demographic and gambling experience questionnaires and to return the questionnaires by mail. Due to incomplete data or unreturned questionnaires, data from 24 subjects could not be used. Of the 104 remaining subjects, 44 were male, 55 were female, and 5 did not specify gender. The age of the subjects ranged from 21 years to 76 years with a mean age of 46.5 years old.

### Instrument

The GRI was developed to provide a continuous index of problem gambling based on the description given in the DSM-IV. Between two and seven items were developed to correspond to each DSM-IV criterion for Pathological Gambling. For example, as mentioned earlier, the first criterion listed in the DSM-IV for a pathological gambler (i.e. Preoccupation with Gambling) is described by items such as: “There are few things I would rather do than gamble,” and “It is hard to get my mind off gambling.” (All of the items are listed in Appendix A.) The resulting 41 Likert scale test items are scored from 1 to 6. Response options for 24 of the items range from Strongly Disagree to Strongly Agree; for the remaining 17 items participants respond using response categories from Never to Frequently.

## Results

### Gambling Experience

Data were inspected to verify that participants were experienced gamblers. It is important that our subjects are experienced in some form of gambling since the GRI items are written for the population of experienced gamblers. Basic descriptive statistics were computed for each subject's number of visits to a casino in the past twelve months and for frequency of participation in other gambling activities (e.g., bingo, betting on sports events, stock markets,

etc.) over the past twelve months and over the subject's lifetime. Four of the subjects did not record number of visits to a casino in the last year. Of the remaining 100 subjects, 96 had visited a casino one or more times; the median number of casino visits in the last year was nine. The four subjects who had not been to a casino in the last year, as well as three of the subjects who did not record number of casino visits, did indicate participation in other gambling activities, including stock markets, lottery tickets, and betting on sports events. The most common gambling activity participants listed was betting on slot machines (Median = 40 times per year).

#### GRI Item Selection

Scale items were evaluated for content validity, and of the original 41 items, 15 were eliminated on the basis of this analysis. Eliminated items were judged to be ambiguous, "double-barreled," etc. In addition, since the items were written to indicate specific DSM-IV criteria, the homogeneity of items intended to measure each criterion were examined using factor analysis, where possible, and simple correlation matrices. Two additional items were eliminated in this analysis. The final analysis uses 25 items. Each of the ten diagnostic criteria was represented by between one and five of the retained items. In order to allow for derivation of a summative scale score in which each item diagnostic criterion is equally weighted, criterion scores are computed as the mean of responses to the items that correspond to each DSM-IV criterion. Nine of the ten criterion scores are treated as "composite" items; one criterion score (criterion number seven) is measured using a single item. The ten criterion scores are treated as single items in subsequent analyses.

#### Factor and Path Analysis



A factor model of the scale was developed based on the structure of the 10 DSM-IV criteria. The hypothesized structure should contain 3 factors: Dependence (DSM-IV criteria 1, 2, 4, and 5), Lack of Control (DSM-IV criteria 3, 6, and 7), and Disruption (DSM-IV criteria 8, 9, and 10). To test the three-factor model, the correlations shown in Table 1.1 were used in a confirmatory factor analysis using Proc CALIS in SAS. The resulting factor loadings are presented in Table 1.2.

Table 1.1 Correlation Matrix

CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
c1	1.0000	.4560	.7072	.7125	.4951	.4522	.4371	.3678	.3663	.4447
c2	.4560	1.0000	.4786	.4488	.4206	.4886	.4096	.4824	.2879	.3968
c3	.7072	.4786	1.0000	.6195	.4728	.7843	.6390	.5392	.5244	.6830
c4	.7125	.4488	.6195	1.0000	.4782	.4274	.3330	.3665	.3395	.4254
c5	.4951	.4206	.4728	.4782	1.0000	.3686	.3737	.4444	.4695	.4442
c6	.4522	.4886	.7843	.4274	.3686	1.0000	.5206	.4661	.4638	.6453
c7	.4371	.4096	.6390	.3330	.3737	.5206	1.0000	.5041	.4903	.4349
c8	.3678	.4824	.5392	.3665	.4444	.4661	.5041	1.0000	.6032	.6225
c9	.3663	.2879	.5244	.3395	.4695	.4638	.4903	.6032	1.0000	.7046
c10	.4447	.3968	.6830	.4254	.4442	.6453	.4349	.6225	.7046	1.0000

Table 1.2 Confirmatory Factor Loadings

CRITERIA	DEPEND	DISRUPT	CONTROL
c1	.8946 (.083)		
c2	.3907 (.117)	.2508 (.251)	
c3			.9869 (.073)
c4	.8009 (.086)		
c5	.3727 (.113)	.3243 (.113)	
c6			.7938 (.083)
c7			.6494 (.089)
c8		.7365 (.088)	
c9		.7856 (.086)	
c10		.8851 (.082)	

The confirmatory factor analysis yielded a Goodness of Fit Index (GFI) equal to .90 and Root Mean Square Residual equal to .05 [ $\chi^2$  (df=30)=57.08, p=.002]. The residual matrix is presented in Table 2.

**Table 2 Residual Matrix**

CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
c1	.0000	-.0203	.0166	-.0040	-.0020	-.1033	-.0173	-.0041	-.0305	-.0023
c2	-.0203	.0000	-.0088	.0225	.0693	.0967	.0889	.1352	-.0824	-.0205
c3	.0166	-.0088	.0000	.0012	-.0550	.0008	-.0018	-.0060	-.0571	.0279
c4	-.0040	.0225	.0012	.0000	.0331	-.0699	-.0738	.0335	-.0157	.0252
c5	-.0020	.0693	-.0550	.0331	.0000	-.0559	.0265	.0507	.0494	-.0290
c6	-.1033	.0967	.0008	-.0699	-.0559	.0000	.0051	.0276	-.0040	.1183
c7	-.0173	.0889	-.0018	-.0738	.0265	.0051	.0000	.1454	.1077	.0038
c8	-.0041	.1352	-.0060	.0335	.0507	.0276	.1454	.0000	.0246	-.0294
c9	-.0305	-.0824	-.0571	-.0157	.0494	-.0040	.1077	.0246	.0000	.0093
c10	-.0023	-.0205	.0279	.0252	-.0290	.1183	.0038	-.0294	.0093	.0000

The average absolute residual is .0330, with an average absolute residual of .0403 for all off-diagonal values.

The three factors, Dependence, Loss of Control, and Disruption, had McDonalds Omega values of .60, .86, and .60, respectively. In addition, the internal convergent and discriminant validity were explored by computing the correlation of the item sums within each factor with the other two factors. Table 3 displays the validity coefficients.

**Table 3 Convergent and Discriminant Validity**

	SUM	DEPEND	DISRUPT	CONTROL
1	Y1	.7767	.4385	.6075
2	Y2	.4384	.7765	.5824
3	Y3	.7243	.6945	.9260

To confirm that the three factors are measuring one common construct, problem gambling, a second level factor analysis was used. The loadings and uniquenesses of the factors Dependence, Loss of Control, and Disruption are listed in Table 4.1

**Table 4.1 Second Level Factor Analysis**

FACTOR	LOADING	UNIQUENESS
depend	.7674 (.087)	.4112
control	.7358 (.088)	.4586
disrupt	1.0193 (.077)	-.0391

The Schmid-Leiman “transformation” loadings of each criterion on the second level factor were computed and are listed in Table 4.2. Of course, the fit indices are not relevant since a single cluster factor model can perfectly predict a 3 by 3 correlation matrix. The reliability of the total scale was computed from the two-level factor analysis using the 10 loadings on the general factor and the total test score variance; this analysis produced a McDonald’s Omega equal to .7953.

**Table 4.2 Computed Hierarchical Factor Analysis**

CRITERIA	DEPEND	CONTROL	DIRUPT	PROBLEM GAMBLING
c1	.3679			.6865
c2	.1607	.1150		.4844
c3			-.0386	1.0059
c4	.3293			.6146
c5	.1532	.1487		.5246
c6			-.0310	.8092
c7			-.0253	.6619
c8		.3377		.5419
c9		.3603		.5780
c10		.4059		.6512

Lastly a path analysis with latent variables was used to test a causal relationship between the three factors, such that Dependence causes Loss of Control, which then causes Disruption.

Figure 1 in Appendix B gives the coefficients and their appropriate standard deviations.

The Goodness of Fit Index is equal to .89 with a Root Mean Square Residual equal to .06 [ $\chi^2$  (df=31)=61.39,  $p<.001$ ]. The observed residual matrix is presented in Table 5; the absolute mean residual for all off-diagonal values equals .048.

**Table 5 Path Analysis Residual Matrix**

CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
c1	.0000	.0919	-.0732	.0192	.0923	-.0726	-.0091	-.0496	-.0256	-.0325
c2	.0919	.0000	-.0718	.0212	.0441	-.0572	-.0693	.0057	-.0024	.0179
c3	-.0732	-.0718	.0000	.0405	-.0576	.0835	.0473	.1384	-.0400	-.0025
c4	.0192	.0212	.0405	.0000	-.0610	-.0809	.0045	.0527	.0669	.0046
c5	.0923	.0441	-.0576	-.0610	.0000	.0556	.0038	-.0678	-.0405	-.0031
c6	-.0726	-.0572	.0835	-.0809	.0556	.0000	-.0087	-.0380	-.0147	.0688
c7	-.0091	-.0693	.0473	.0045	.0038	-.0087	.0000	.0492	.0375	-.0434
c8	-.0496	.0057	.1384	.0527	-.0678	-.0380	.0492	.0000	.0107	-.0424
c9	-.0256	-.0024	-.0400	.0669	-.0405	-.0147	.0375	.0107	.0000	.0261
c10	-.0325	.0179	-.0025	.0046	-.0031	.0688	-.0434	-.0424	.0261	.0000

## Discussion

The GRI was developed to be a useful tool for measuring problem gambling behavior with a continuous index, allowing for meaningful investigation of relations between problem gambling and other personality or demographic variables, and the structure of problem gambling to be explored.

The GFI and RMSR suggest the factorial model had an acceptable fit representing nearly an independent clusters factorial structure. However, McDonald (1999) suggests that inspection of the residual matrix can also indicate fit. In the model, most standardized residuals are less than .1, indicating a good fit. There are a few residuals greater than .1, which may be a result of

sampling error. This possibility will be investigated with the collection of data from additional subjects.

Two of the criteria, Tolerance and Escape, which were initially believed to describe Dependence, are allowed to load on two different factors. To explain the allowance of a double loading the two criteria must first be defined. Tolerance, in the case of Pathological Gambling, is defined as the need to gamble with increasing amounts of money in order to achieve the same experience as when the individual first started gambling. The Escape criterion is worded in the DSM-IV as using “gambling as a way of escaping from problems or of relieving dysphoric moods.” Both criteria measure two different components. One component is about the feeling (i.e., indicator of Dependence), while the second component is about the action (i.e., indicator of Disruption). For example, one item used to measure Tolerance is, “I find it necessary to gamble with larger amounts of money (than when I first gambled) for gambling to be exciting.” The experience of feeling the need to bet more describes the component of the item that loads on the Dependence factor; however, the act of continuously betting more is disruptive. The items indicating Escape have similar properties. Feeling that gambling is way to avoid certain problems loads on the Dependence factor; however, the act of avoiding the problems is disruptive. The separation into two parts is not possible with the other two criteria of Dependence (i.e., Preoccupation and Withdrawal.) For example, the very act of thinking about gambling cannot be disruptive unless it is out of the control of the individual.

Additional work will prove worthwhile for Criterion 2 and Criterion 5 (i.e., Tolerance and Escape) of the scale. In addition to the fit of the model, the reliability and validity (i.e., correlation of the factor with the sum of all factor items) need to be discussed. The reliability for the factor, Loss of Control, is good (equaling .8574); however, there seems to be a need for more

work on the items indicating the factors of Dependence and Disruption. Reliabilities of .60, admittedly, are not as high as one would like to see when compared to the Loss of Control Factor. It is speculated that the two composites that load on both Dependence and Disruption contribute to the lower reliability.

Often convergent and discriminant validity are considered in terms of the relationship of external measures with the measure in question. McDonald (1999) explains that internal convergent and discriminant validity can be checked without additional measures. In terms of the factor model, validity can be defined by the correlation between the item score within a factor and the factor itself. The correlations of the item score with the factor the items load on is expected to be higher than the correlations of an item score with alternative factors of the GRI. The highest validities are on the diagonal, while the off diagonal contains lower validities, providing for assessment of internal convergent and discriminant validity. It should be noted that the inspection of such a matrix in a case with items that load on more than one factor should be done with caution. Since criteria 2 and 5 load on both Dependence and Disruption it is expected that the items will increase the correlation between factor sums and other factors; this pattern is observed for the correlation between the sum of the items loading on the Disruption factor and the Dependency factor.

Having discussed the qualities of each subscale, it is also important to examine the qualities of the entire instrument. To show the instrument does measure a single construct (i.e., pathological gambling) a reasonable practice is to use a hierarchical factor analysis, estimating both the individual loadings and the general loadings of each item simultaneously. However, in the case of the GRI, the solution results in a negative uniqueness causing a problem in the iterative procedure. At first glance it would appear to be an improper solution. However, since

the loading is only .524 standard deviations from zero, it is not thought to be significantly different from zero, and is only negative due to sampling error, which allows the loading to be treated as 1.00 with a unique variance equal to zero. To overcome the negative uniqueness problem we used a two level factor analysis and then estimated the hierarchical factor model using a transformation suggested by Schmid-Leiman. The resulting estimates of the hierarchical factor analysis suggest the GRI does measure one thing in common to all items, and it is therefore appropriate to use the sum of the ten DSM-IV criteria to compute an index of problem gambling.

Finally, a causal relationship between the three factors of Dependence, Loss of Control, and Disruption describing a path of severity was tested using the following logic: First Pathological Gamblers develop a *dependency*. They begin to gamble more frequently, and when they are not gambling they are thinking about when they will gamble next. The Pathological Gambler finds he or she is allowing increasingly more money for trips to the casino. Eventually, the feelings of the need to gamble increase to the point that the Pathological Gambler begins to *lose control*. He or she must return to the casino to “win back” lost money. At this point, the gambler also realizes it might be time to cut back yet still returns to the casino, leading to *disruption*. Now the Pathological Gambler is “driven” to obtain money in whatever ways are necessary, causing disruptive and even illegal acts, such as excessive borrowing and even stealing.

Such a model yields a marginal fit. While the residuals are not all as small as one would want, some small sample variance could be allowed. The largest concern is the poor fit of the second criterion in the model. Many of the large residuals are due to the second criterion (i.e., Tolerance). As suggested previously, the poor composite fit could be due to the nature of the

criterion itself, which will be explored further and with a larger sample to better explore the lack of fit.

While the description mentioned is the basis for the path analysis tested, there are many other possible structural equation models that could have been chosen. Possibly the second best choice is that Dependence causes both Loss of Control and Disruption, in addition to Loss of Control causing Disruption. It does not seem plausible that a person who has reached a level of dependence, yet still has control of the situation, would do anything that would be disruptive as a direct result of the Dependence. As hypothesized in the original model, Dependence can only be disruptive if mediated through Loss of Control.

It should also be noted, due to the indeterminacy of structural equation models, there is yet a third model that could be explored. Modeling Disruption as causing Loss of Control, which causes Dependency would result in identical parameters as the model tested. Out of context, such a model may seem reasonable, arguing that Disruption in a person's life can lead to the Loss of Control, which eventually causes them to gamble. However, in the context of the items (and criteria) such a model is no longer logical. The criteria of the DSM-IV are phrased in such a way that the disruption is a result of gambling. For example, criterion 8 is stated in the DSM-IV as "has committed illegal acts, such as forgery, fraud, theft, or embezzlement to finance gambling." If such a person's Disruption causes gambling, it is not likely the disruption involves gambling.

In conclusion, the GRI has proven to reliably measure three different aspects of gambling in a way that allows for a continuous index to indicate the level of Pathological Gambling based on the DSM-IV. The paper has demonstrated the internal validity and reliability of the scale as well as providing evidence for three sub-scales: Dependence, Loss of Control, and Disruption.



The GRI has a lower threshold for items used to measure each of the 10 criteria allowing for the study of relationships between problem gambling and additional personality, experiential, and demographic variables in hopes of finding new contributors or correlates that may contribute to problem gambling. This approach is in contrast to much of the literature in which Pathological Gamblers are identified and differences are examined between Pathological Gamblers and Non-pathological Gamblers.

In addition a causal model expressing the development of Pathological Gambling based on the 10 criteria has been defined such that first an individual develops a Dependence, which then causes a Loss of Control in the individual's life, which subsequently causes Disruption.

Future studies are planned to confirm the validity of the GRI while exploring relationships with additional Gambling scales (e.g., SOGS), and personality measurements (e.g., Depression and Risk).

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## APPENDIX A

NOTE: Items in **Bold** are kept in instrument for analysis and the criterion number is listed in parentheses at the end of each item.

## GAMBLING RESEARCH INSTRUMENT (PART I)

Please read the statements below and indicate how much you *agree* or *disagree* with each one. Write a number from the following rating scale beside each statement.

1	2	3	4	5	6
<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Slightly Disagree</b>	<b>Slightly Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>

1. \_\_\_\_ I would like to cut back on my gambling. (3)
2. \_\_\_\_ There are few things I would rather do than gamble. (1)
3. \_\_\_\_ If I lost a lot of money gambling one day, I would be more likely to want to play again the following day. (6)
4. \_\_\_\_ I enjoy talking with my family and friends about my past gambling experiences. (7R)
5. \_\_\_\_ **I find it necessary to gamble with larger amounts of money (than when I first gambled) for gambling to be exciting. (2)**
6. \_\_\_\_ **I have gone to great lengths to obtain money for gambling. (8)**
7. \_\_\_\_ I feel "high" when I gamble. (5)
8. \_\_\_\_ I worry that I am spending too much money gambling. (3)
9. \_\_\_\_ **I feel restless when I try to cut down or stop gambling. (4)**
10. \_\_\_\_ It bothers me when I have no money to gamble. (1)
11. \_\_\_\_ **I gamble to take my mind off my worries. (5)**
12. \_\_\_\_ When I lose money gambling, it is a long time before I gamble again. (6R)
13. \_\_\_\_ **I find it difficult to stop gambling. (3)**
14. \_\_\_\_ I am drawn more by the thrill of gambling than by the money I could win. (2)
15. \_\_\_\_ I am private about my gambling experiences. (7)
16. \_\_\_\_ I am ashamed of the things I've done to obtain money for gambling. (8)
17. \_\_\_\_ **Gambling helps me to feel less anxious. (5)**
18. \_\_\_\_ My family, coworkers, or others who are close to me disapprove of my gambling. (9)
19. \_\_\_\_ I would like to stop gambling. (3)
20. \_\_\_\_ **When gambling, I have an amount of money in mind that I am willing to lose, and I stop if I reach that point. (6R)** *R indicates a reverse item*
21. \_\_\_\_ **It is hard to get my mind off gambling. (1)**
22. \_\_\_\_ **Gambling has hurt my financial situation. (10)**
23. \_\_\_\_ **I gamble to improve my mood. (5)**
24. \_\_\_\_ I worry that I am spending too much time gambling. (3)

**GAMBLING RESEARCH INSTRUMENT (PART II)**

For the previous set of questions, you were asked to indicate how much you *agreed* or *disagreed* with each statement. For the set of items below, please indicate how *often* the following things occur or have occurred **during the past 12 months**. Write a number from the following rating scale beside each statement.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Never</b>	<b>Rarely</b>	<b>Occasionally</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Frequently</b>

- 1.\_\_\_\_ I have gambled with money that I intended to spend on something else. (10)
- 2.\_\_\_\_ I think about gambling. (1)
- 3.\_\_\_\_ I make larger bets than I did when I first started gambling. (2)
- 4.\_\_\_\_ I have gotten into trouble over things I have done to finance my gambling. (8)
- 5.\_\_\_\_ I have attempted to cut back on my gambling. (3)
- 6.\_\_\_\_ I have arguments with others about my gambling. (9)
- 7.\_\_\_\_ I become irritable when I am unable to gamble. (4)
- 8.\_\_\_\_ After losing money, I gamble again to win it back. (6)
- 9.\_\_\_\_ I have gotten into financial trouble because of gambling. (10)
- 10.\_\_\_\_ I think about ways to get money for gambling. (1)
- 11.\_\_\_\_ I have lied to family or friends about my gambling. (7)
- 12.\_\_\_\_ I have been unsuccessful in past attempts to control my gambling. (3)
- 13.\_\_\_\_ I have later been sorry about things I have done to obtain money for gambling. (8)
- 14.\_\_\_\_ I have missed work, class, or other appointments because of gambling. (9)
- 15.\_\_\_\_ I have spent more money gambling than I intended to. (3, 6)
- 16.\_\_\_\_ I have borrowed money from others for gambling. (10)
- 17.\_\_\_\_ I think about my past gambling experiences. (1)