DRIVER RISK INVENTORY-II

DRI-II: An Inventory of Scientific Findings

VOLUME 2

TABLE OF CONTENTS			
YEAR	**PAGE**	**YEAR**	**PAGE**

The *DRI-II Inventory of Scientific Findings* consists of two volumes. Volume 1 can be accessed on the DRI-II website (www.driver-risk-inventoryii.com) by clicking on the 'DRI-II Research' link.

Courtesy of Behavior Data Systems, Ltd. and its subsidiaries
Risk & Needs Assessment, Inc.
and Professional Online Testing Solutions, Inc.

PREFACE

The Driver Risk Inventory-II (DRI-II) is a brief, easily administered and automated (computer-scored) test that is designed for DUI/DWI offender risk and needs assessment. It includes true/false and multiple choice items and can be completed in 30 minutes. The original Driver Risk Inventory (first released in 1985) contained five empirically based scales: Truthfulness, Alcohol, Drug, Driver Risk, and Stress Coping Abilities. A sixth "classification" scale, the Substance Dependency/Abuse Scale, was added to the DRI in 1998, to create the improved "Driver-Risk Inventory-II" (or DRI-II). The DRI-II has been researched on DUI/DWI offenders, college students, outpatients, inpatients, job applicants, chemical dependency clients and others.

This document is the second of two volumes that present a cumulative record of the evolution of the DRI-II. The DRI-II database has been compiled since 1980, in over 34 states and two foreign countries. Volume 1 is over 150 pages in length, and presents 63 research studies chronologically from 1980 to 2008. Some of the early research includes original criterion validation studies conducted with established Minnesota Multiphasic Inventory (MMPI) scales, polygraph examinations, etc. Research conducted from 2009 on is presented in this Volume (Volume 2). Study results demonstrate the reliability, validity and accuracy of the DRI-II. The DRI-II has been researched and standardized on over 1.3 million DUI/DWI offenders. Its database is now one of the largest DUI/DWI offender databases in the United States.

The U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) reviewed all major DUI tests in a two-year study (DOT HS 807 475). NHTSA highly rated the DRI. As reported in Government Technology (Vol. 3, #5, May 1990), "The Driver Risk Inventory was rated as the best."

The DRI-II report explains client's attained scores and makes specific intervention and treatment recommendations. It also presents Truth-Corrected scores, significant items, a concise "structured interview", and much more. The DRI is designed to measure the severity of DUI/DWI offender problems with respect to driver risk, substance (alcohol and drugs) abuse and mental health. It is a risk and needs assessment instrument. It has demonstrated reliability, validity and accuracy, and it correlates impressively with both experienced staff judgment and other recognized tests. DRI-II research is ongoing in nature, so that evaluators can be provided with the most accurate information possible.

DRI-II tests can be given directly on the computer screen or in paper-pencil test booklet format. All tests are computer scored on-site. DRI-II reports are available within three minutes of test completion. Diskettes contain all of the software needed to score tests, build a database, and print reports. The DRI-II Windows version also has an optional human voice audio presentation that presents the test with accompanying auditory presentation of the text seen on the computer screen. Additionally, the DRI-II is available on Professional Online Testing Solution's online testing platform.

DRI-II users are typically not clinicians or diagnosticians. Their role is usually to identify client risk, substance (alcohol and other drugs) abuse problems, and client need prior to recommending intervention, supervision levels, and/or treatment. The DRI-II is to be used in conjunction with a review of available records and respondent interview. No decision or diagnosis should be based solely on DRI-II results. Client assessment is not to be taken lightly, as the resulting decisions drastically affect people's lives.

INTRODUCTION

DRIVER RISK INVENTORY (DRI)

Increased public awareness of substance (alcohol and other drugs) abuse as a nationwide health problem has clarified the need for identification and treatment of these disorders. Rising health care costs have placed increasing responsibilities on all persons working with substance abusers. Workers in the field must now document and substantiate their intervention and treatment. Patients, clients, their families, probation departments, the courts, diversion programs, corrections programs and funding agencies are now requiring substantiation and documentation of staff decision making. Substance (alcohol and other drugs) abuse and dependency problems must now be measured in terms of degree of severity, with quantitative statements substantiating intervention and treatment.

The Driver Risk Inventory (DRI) was developed to help meet these needs. The DRI is designed for adult chemical dependency and substance (alcohol and other drugs) abuse assessment. The DRI is particularly useful in court-related assessments, diversion programs, intake-referral settings, and probation departments. The DRI report is designed for court and DUI/DWI offender assessment. In this report quantitative information is obtained by empirically based measures (scales) which independently generate risk (percentile) scores. Scale development is based upon nearly 20 years of research. In addition, explanatory paragraphs describe attained scores and contain specific score-related recommendations. And each scale is presented graphically in the DRI profile.

DRI MEASURES OR SCALES

1. **Truthfulness Scale**
2. **Alcohol Scale**
3. **Drug Scale**
4. **Driver Risk Scale**
5. **Stress Coping Abilities Scale**

***6. Substance Dependency/Abuse Scale**

*NOTE: the Substance Dependency/Abuse Scale is a classification that is based on DSM-IV criteria.

The DRI is a brief, easily administered and interpreted test that is specifically designed for use with **DWI (Driving While Intoxicated)** and **DUI (Driving Under the Influence)** offenders. The acronyms **DWI** and **DUI** are used **interchangeably** in this document. The DRI is a test uniquely suited for identifying problem drinkers, substance (alcohol and other drugs) abusers and high risk drivers. The DRI represents the latest developments in psychometric techniques and computerized technology. The DRI can be administered on a computer (PC compatible) screen or by using paper-pencil test booklets. Regardless of how the DRI is administered, all tests are scored and interpreted with a computer which generates DRI reports.

The DRI requires 25 to 30 minutes for completion. The DRI can be administered individually or in groups and is appropriate for people with sixth grade or higher reading abilities (available in English and Spanish). The DRI is composed of true/false and multiple-choice items. The language is direct, non-offensive and uncomplicated. Automated scoring and interpretive procedures help ensure objectivity and accuracy. The DRI is to be used in conjunction with a review of available records, a focused interview and experienced staff judgment.

The DRI was designed to provide relevant driver risk-related information for DUI/DWI staff decision-making. The DRI measures (or scales) were chosen to further the understanding of behavioral patterns and traits relevant to understanding problem drinkers, substance (alcohol and other drugs) abusers, and high risk drivers.

UNIQUE FEATURES

Truth Correction: A sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for DRI scales. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness Scale was developed. **The Truthfulness Scale establishes how honest or truthful a person is while completing the DRI.** Correlation's between the Truthfulness Scale and all other scales permit identification of error variance associated with untruthfulness. This error variance can then be added back into scale scores, resulting in more accurate "Truth-Corrected" scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide. Truth-Corrected scores are more accurate than raw scores.

Risk Range Percentile Scores: Each DRI scale is scored independently of the other scales. DRI scale scoring equations combine client pattern of responding to scale items, Truthfulness Scale and prior history that is contained on the DRI answer sheet. The Truthfulness Scale applies a truth-correction factor so that each scale score is referred to as a Truth-Corrected scale score. These Truth-Corrected scale scores are converted to the percentile scores that are reported in the client DRI report.

DRI scale percentile scores represent "degree of severity." Degree of severity is defined as follows: **Low Risk** (zero to 39th percentile), **Medium Risk** (40th to 69th percentile), **Problem Risk** (70th to 89th percentile), and **Severe Problem** or **Maximum Risk** (90th to 100th percentile). Severe problems include dependency.

Standardization data is statistically analyzed where percentile scale scores are derived from obtained scale scores from offender populations. The cumulative distributions of truth-corrected scale scores determine the cut-off scores for each of the four risk range categories. Individual scale score calculations are automatically performed and results are presented in the DRI report numerically (percentile), by attained risk category (narrative) and graphically (DRI profile).

DRI Database: Every time a DRI is scored the test data is automatically stored on the diskette for inclusion in the DRI database. This applies to DRI diskettes used anywhere in the United States and Canada. When the preset number of tests are administered (or used up) on a DRI diskette, the diskette is returned for replacement and the test data contained on these used diskettes is input, in a confidential (no names) manner, into the DRI database for later analysis. This database is statistically analyzed annually, at which time future DRI diskettes are adjusted to reflect demographic changes or trends that might have occurred. This unique and proprietary database also enables the formulation of annual summary reports that are descriptive of the populations tested. Summary reports provide important testing information, for budgeting, planning, management and program description.

Confidentiality (Delete Client Names): Many agencies and programs are rightfully concerned about protecting their client's confidentiality. The proprietary Delete Client Names option is provided to allow

deletion of client names from test diskettes prior to their being returned to Risk & Needs Assessment. This is optional and once the names have been deleted they are gone and cannot be retrieved. Deleting client names does not delete demographic information or test data. It only deletes the client names when the option is used. The option is available at any time and can be used whether the diskette is full or not. Once the client names are deleted there can be no further editing of the client names. This ensures client confidentiality.

DESCRIPTION OF EMPIRICALLY BASED MEASURES OR SCALES

DRI scales were developed from large item pools. Initial item selection was a rational process based upon clearly understood definitions of each scale. Subsequently, items and scales were analyzed for final test selection. The original pool of potential test items was analyzed and the items with the best statistical properties were retained. **Final test and item selection was based on each item's statistical properties**. It is important that users of the DRI familiarize themselves with the definition of each scale. For that purpose a description of each DRI scale follows.

Truthfulness Scale: The Truthfulness scale measures how "truthful" the client was while completing the DRI. This type of a scale is a necessary, if not essential, requirement for any test involved in court-related procedures. Since the outcome of a person's test score could affect their driving privileges at the very least, or result in more serious consequences, it would be naive to believe that DUI/DWI offenders answer all questions truthfully. All interview and self-report test information is subject to the dangers of untrue answers due to defensiveness, guardedness, or deliberate falsification. The Truthfulness Scale identifies these self-protective, recalcitrant and guarded people who minimize or even conceal self report information. The Truthfulness Scale also establishes that the client understood the test items that he or she was responding to.

Drinking drivers frequently attempt to falsify their answers or minimize alcohol-related problems if the test outcome plays a major part in sentencing (Keistner and Speight, 1975). DUI/DWI offenders have been demonstrated to substantially under-report alcohol use when being evaluated for referral (Jalazo, et al., 1978). DUI/DWI offenders' self-assessments about whether they are "problem drinkers" often do not match those made by trained personnel (Sandler, et al., 1975). Nancy Hammond and Leslie Tamble's DWI Assessment: A Review of the Literature (1983) emphasized that DUI/DWI offenders tend to minimize or even conceal information regarding their alcohol-related problems.

Alcohol Scale: The Alcohol Scale is a measure of the client's alcohol proneness and alcohol related problems. Frequency and magnitude of alcohol use or abuse are important factors to be considered when evaluating DUI/DWI clients. DUI/DWI risk evaluation and screening programs are based upon the concept of an objective, reliable and accurate measure of alcohol use or abuse. Alcohol is a major licit or legal drug. The burgeoning awareness of the impact of illicit drugs on licensed drivers emphasizes the need for a DUI/DWI test to also discriminate between licit and illicit drugs.

Drug Scale: The Drug scale is an independent measure of the client's drug abuse-related problems. Illicit (or illegal) drug abuse and its effects are important factors to be considered when evaluating DUI/DWI offenders. Without this type of a drug scale, many drug abusers would remain undetected. Thus, the DRI differentiates between "alcohol" and "drug" abuse or licit versus illicit drugs. Increased public awareness of illicit drug (marijuana, cocaine, ice, crack, heroin, etc.) abuse emphasizes the importance of including an independent measure of drug use or abuse in any DUI/DWI risk assessment instrument.

The national outcry in the 1980's concerning cocaine use momentarily obscured the fact that Americans also abuse a number of other substances--including marijuana. Marijuana can be an intoxicant, depressant, hallucinogen, stimulant, or all of the above. The principal mind-altering ingredient in marijuana (THC) may linger for days or even weeks. Studies have shown that THC intoxication can return--for no apparent reason--even when a person has not recently smoked marijuana (University of California, Berkeley, Wellness Letter, May 1987). Dr. Adrian Williams of the Insurance Institute for Highway Safety estimates that as many as three-fourths of those arrested for driving under the influence of alcohol have been using marijuana as well.

Driver Risk Scale: The Driver Risk scale is an independent measure of the respondent being a driver risk, independent of that person's involvement with alcohol or drugs. Mortimer, et. al. (1971)[1] concluded that alcoholics were significantly more involved in inappropriate driving behavior and moving violations. Selzer (1971)[2] concluded that for maximal screening effectiveness, test results and arrest records be used jointly. Identification of driver risk independent of chemical dependency also is helpful in detecting the abstaining, yet aggressively irresponsible driver. The National Council on Alcoholism, (NCA Newsletter, 1984) noted that "research results indicated drivers' potential for risk-taking behavior may exist independently of alcohol use, and manifest itself as aggressive irresponsibility."

The National Highway Traffic Safety Administration (NHTSA) concluded **"One of the DRI scales is designed to detect irresponsible driving and provides an assessment for driver risk, a particularly useful feature for evaluating the DWI offender that does not exist in any other instrument we reviewed"** (DOT HS 807 475).

Stress Coping Abilities Scale: The Stress Quotient Scale (renamed the Stress Coping Abilities Scale) is a measure of the respondent's ability to cope with stress. How effectively one copes with stress determines whether or not stress affects one's overall adjustment and driving abilities. Stress exacerbates other symptoms of emotional as well as substance abuse-related problems. Markedly impaired stress coping abilities are frequently correlated with other emotional and psychological problems. A high risk (90 to 100 percentile) score on the Stress Quotient scale is indicative of markedly impaired stress coping abilities and likely reflects other identifiable mental health problems. The Stress Quotient scale is also significantly correlated with other indices of emotional problems that affect a person's driving abilities.

Many states are beginning to consider requiring DUI/DWI risk evaluation and screening procedures to include screening of "mental health problems." The Stress Quotient scale facilitates evaluation in these important areas of inquiry in a non-offensive and non-intrusive manner. The purpose or intent of the Stress Quotient scale is not obvious or threatening to the respondent. DUI/DWI client defensiveness and resistance is minimized. Thus, important information regarding DUI/DWI offender's stress coping abilities is obtained and made available to the screening agency in an objective and timely manner.

Substance Dependency/Abuse Classification Scale: Psychoactive substance use, abuse and dependency are discussed and defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). And it is from this source that the Substance Dependency/Abuse Scale evolved.

Dependency as used in the DRI is defined as admission to three or more of the seven DSM-IV symptoms of dependency. Substance Abuse is defined as admission to one or more of the four DSM-IV symptoms. The Substance Dependency/Abuse Scale incorporates the seven DSM-IV Substance Dependency criteria items and the four DSM-IV Substance Abuse criteria items. The DRI Alcohol Scale and Drug Scale measure risk or severity level and include DSM-IV equivalent items to support DSM-IV criteria items.

Defendant admission of three of the seven DSM-IV dependency items results in Substance Dependence classification. Similarly, defendant admission to one of the four DSM-IV abuse items results in Substance Abuse classification.

DRI items are personal. The straightforward nature of the DRI may appear to some people as intrusive. Although perhaps discomforting to some, such criticism is directly related to the DRI's strength in assessing substance abuse and related problems objectively. Information deemed personal by some is necessary in acquiring information relevant to each DUI/DWI client's situation. Extensive efforts were made to word the DRI in a non-offensive, non-intrusive and easily understood manner.

DRI-Short Form: The **DRI-Short Form** is designed for use with the reading impaired, in high volume DUI/DWI agencies, and as an alternative retest instrument. It can be administered directly on the computer screen, given in paper-and-pencil test booklet format or read to the client in 15 minutes. The DRI-short form has a fifth (5th) grade reading level. DRI-Short Form scales correlate significantly with comparable scales on the DRI. The DRI-Short Form contains five scales: Truthfulness, Alcohol, Drug, Driver Risk and Substance Dependency/Abuse. DRI-Short Form tests can be administered in individual or group testing settings.

[1]Mortimer, R.G., Filkins, L.D., and Lower, J.S. 1971 Court Procedures for identifying problem drinkers: Phase 11 (U.S. Department of Transportation, Report No. HSRI 71-120, HUF-1 1) Ann Arbor, Michigan: University of Michigan Highway Safety Research Institute.

[2]Selzer, M.L., 1971. Differential risk among alcoholic drivers. Proceedings of the American Association for Automotive Medicine 14: 107-213.

EMPIRICAL RESEARCH

The Driver Risk Inventory (DRI) validation studies were conducted with established Minnesota Multiphasic Personality Inventory (MMPI) scales as well as Polygraph examinations and other reports. Reliability and validity studies have been conducted on substance abuse inpatients, outpatients, college students, job applicants, defendants, diversion program attendees, probationers, inmates and counseling patients. The DRI has been studied in court settings and DUI/DWI programs.

Empirically based DRI scales (or measures) were developed by statistically relating scale item configurations to known substance (alcohol and other drugs) abuse groups. The DRI was then normed against DUI offender populations. A summary of much of this DRI research is presented in Volume 1, which includes the first 63 DRI-II studies.

64. Study of DRI-II in a Midwest State DWI Program

This study (2009) examined DRI-II test statistics in a Midwest statewide DWI program. Data was obtained from agencies that administered the DRI-II. Offenders were tested throughout the years beginning June 1, 2008 and ending May 31, 2009. There were **23,590** offenders included. DRI-II reliability, validity and accuracy were examined.

Method

Participants in this study (N=23,590, 2009) consisted of DWI offenders; 17,284 (74.8%) of offenders were male and 5,820 (25.2%) were female. Demographic composition of the sample follows. Age: 20 & under (10.7%); 21-30 (39.6%); 31-40 (21.0%); 41-50 (18.3%); 51-60 (8.0%) and 61 & over (2.3%). Ethnicity: Caucasian (87.4%); African American (7.4%), Hispanic (3.3%), Asian (0.6%), Native American (0.4%) and Other (0.9%). Education: Eighth grade or less (2.0%); Some high school (14.6%); H.S. graduate/G.E.D. (62.2%); Trade/Technical school (11.9%); Some college (6.7%); College graduate (2.4%); and Advanced Degree (0.4%). Marital Status: Single (56.9%), Married (20.6%), Divorced (17.2%), Separated (4.1%) and Widowed (1.3%).

Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets a similar score when re-tested as he/she did when originally tested. Table 144 shows the reliability scores for each DRI-II scale. Perfect reliability is 1.00.

Table 144. DRI-II Reliability Coefficient Alphas (N = 23,590, 2009)

DRI-II Scale	Alpha coefficient
Truthfulness Scale	**.86**
Alcohol Scale	**.91**
Driver Risk Scale	**.87**
Drugs Scale	**.91**
Stress Coping Abilities	**.91**

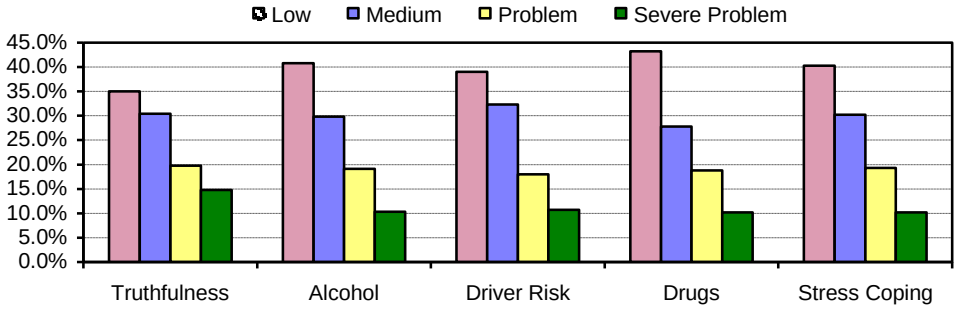
**Note: The Substance Abuse/Dependency Scale is a classification scale, not a measurement scale, and is therefore excluded from this analysis.

All DRI-II scales have a reliability of .86 or higher. The professionally accepted reliability standard is .75. All DRI-II scales exceed this standard and demonstrate exceptional reliability.

Accuracy

Test accuracy is determined by how close attained scale scores are to predicted scores. Four risk categories are assigned: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem Risk (90 to 100th percentile). The top row of Table 1 shows the percentages of offenders that were predicted to score within each risk range. The body of Table 145 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Problem Risk range for the Driver Risk Scale: 20% of offenders were predicted to score within this range. The attained percentage of offenders who scored in this range was 19.8%, which is a difference of 0.2 points from the predicted percentage.

Figure/Table 145. DRI-II Scales Risk Range Accuracy (N = 23,590, 2009)



Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	35.0	**(4.0)**	30.4	**(1.4)**	19.8	**(0.2)**	14.8	**(3.8)**
Alcohol	40.8	**(1.8)**	29.8	**(0.2)**	19.1	**(0.9)**	10.3	**(0.7)**
Driver Risk	39.0	**(0.0)**	32.3	**(2.3)**	18.0	**(2.0)**	10.7	**(0.3)**
Drugs	43.2	**(4.2)**	27.8	**(2.2)**	18.8	**(0.1)**	10.2	**(0.8)**
Stress Coping	40.3	**(1.3)**	30.2	**(0.2)**	19.3	**(0.6)**	10.2	**(0.8)**

**Note: The Substance Abuse/Dependency Scale is a classification scale, not a measurement scale, and is therefore excluded from this analysis.

Nineteen out of 20 attained risk range percentiles were within **4.0** points of the predicted percentages (the one exception, the Low Risk range for the Drugs Scale, was within 4.2 points of the predicted percentage). The average difference between attained percentages and predicted percentages was **1.5** point. These results strongly support the accuracy of the DRI-II as an offender-assessment instrument.

Validity

Generally, a test validation procedure consists of a correlation between the test and a criterion. The criterion is often another test that measures the same thing. This type of validation has been conducted in several studies on DRI-II scales. These studies are presented earlier in Volume 1 of *DRI-II: An Inventory of Scientific Findings*. These studies are not practical in everyday settings. Therefore, unique database validity analyses were developed and are presented in annual summary reports.

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another well-established test. This type of validation (concurrent validation) has been conducted in numerous studies on DRI-II scales. These studies are presented in Volume 1 of *DRI-II: An Inventory of Scientific Findings.*

Predictive validity refers to a test's ability to predict observable criterion behaviors. In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was predicted that the offenders who had undergone treatment would attain higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" offenders would have Alcohol and/or Drugs Scale scores that fell within the 70th and 100th percentile range (the Elevated Risk range). The possibility of "treated" offenders scoring in the non-problematic range (zero to 69th percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the Elevated Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Over ninety

percent (**97.5%)** of offenders who had been treated for alcohol problems scored in the Elevated Risk range on the Alcohol Scale. The majority (**98.3%)** of the offenders who had been treated for drug problems scored in the Elevated Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems.

Another analysis was performed for the Driver Risk Scale. Two comparative groups- "aggressive drivers" and "non-aggressive drivers"- were established using direct admissions. The "aggressive driver" group made the self-admission that they were aggressive drivers, whereas the "non-aggressive driver" group did not. It was predicted that a large percentage of aggressive drivers would score within the Elevated Risk range (70^{th} to 100^{th} percentile) on the Driver Risk Scale. Analysis results confirmed this prediction. The majority of aggressive drivers (**88.4%**) were Driver Risk Scale "Elevated Risk" offenders. The Driver Risk Scale accurately identifies aggressive drivers. This finding and the findings from the Alcohol and Drugs scale analyses support the predictive validity of the DRI-II.

A third validity analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that First Offenders and Multiple Offenders would differ significantly from one another in terms of their scale scores. *T*-test results (presented in Table 146) revealed that Multiple Offenders scored significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Driver Risk Scale, and Stress Coping Abilities scale (on which higher scores indicate poorer stress coping abilities).

Table 146. DRI-II Independent Samples *t*-test Results (N=23,590, 2009)

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	*t*-value	Cohen's *d* (effect size)
Truthfulness	45.98	43.21	8.49	0.13
Alcohol	64.70	83.57	-61.33*	1.27
Driver Risk	63.26	73.71	-34.80*	0.57
Drugs	28.09	42.44	-29.94*	0.45
Stress Coping Abilities	51.10	57.79	-15.26	0.23

*Significant at $p < .001$

These results strongly support the predictive validity of the DRI-II. Predictive validity analyses corroborate that the Alcohol, Drugs, Driver Risk, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

Substance Abuse/Dependency Scale

The DRI-II Substance Abuse/Dependency Scale classifies offenders as "substance dependent", "substance abuse" or non-problematic according to their responses regarding DSM-IV criteria. Offenders are classified "substance abuse" if they admit to one or more of the four abuse criteria (symptoms). These DSM-IV criteria are discussed in the *DRI-II Orientation and Training Manual*. Offenders are classified "substance dependent" if they admit to three or more of the seven dependency criteria (symptoms) or if they have ever been diagnosed "substance dependent" in the past. According to DSM-IV methodology, once an individual has been diagnosed "dependent, that diagnosis applies for the rest of his or her life.

Table 147. DSM-IV Classification Scale (N=23,590, 2009)				
Classification	**Males %**	**Females %**	**Total N**	**%**
Non-Problematic	14.2	19.9	3,407	15.9
Substance Abuse	85.6	80.0	18,274	83.9
Substance Dependent	19.7	15.4	4,062	18.7
Diagnosed dependent in past	7.7	6.8	1,631	7.5

The table above shows that nearly 19 percent (18.7%) of the total population was classified as "substance dependent" according to DSM-IV criteria. Almost nine percent (8.6%) of the population had been diagnosed "substance dependent" in the past. The majority offenders were classified as substance abusers and 15.9 percent of the population was classified as non-problematic.

When offender status is considered, the majority (91.5%) of Multiple Offenders in this sample were diagnosed "substance abuse" and over one third (36.2%) were diagnosed "substance dependent". Approximately 18 percent had been diagnosed "substance dependent" in the past. Less than ten percent (9.7%) of Multiple Offenders were classified as non-problematic.

The percentage of First Offenders that were diagnosed "substance abuse" (81.1%) was comparable to that of Multiple Offenders. However, unlike Multiple Offenders, the second largest proportion (18.7%) of First Offenders was classified as non-problematic. Only 12.9 percent were diagnosed "substance dependent". A considerably smaller percentage of First Offenders (4.1%) had been diagnosed "substance dependent" in the past than Multiple Offenders.

The results of chi-square analyses indicated that the differences between the percentages of First Offenders and Multiple Offenders that were classified "substance dependent" (χ^2 = 1449.39, p <.001, *V*= .26), "substance dependent" in the past (χ^2 = 1068.15, p <.001, *V*= .22), and non-problematic (χ^2 = 324.54, p <.001, *V*= .12) were all statistically significant.

65. Study of DRI-II in a Southwest State DUI Program

This study (2009) examined DRI-II test statistics in a southwest statewide DUI program. Data was obtained from agencies that administered the DRI-II. DUI offenders were tested beginning April 1, 2008 and ending September 31, 2009. There were **4,171** DUI offenders included in this study. DRI-II reliability, validity and accuracy were examined.

Method

Participants in this study (N=4,171, 2009) consisted of DUI offenders; 3,511 offenders were (85.0%) male and 622 (15.0%) were female. Demographic composition of the sample follows. Age: 20 & under (8.3%); 21-30 (40.3%); 31-40 (23.8%); 41-50 (17.9%); 51-60 (7.5%) and 61 & over (2.2%). Ethnicity: Caucasian (58.3%); African American (6.7%), Hispanic (24.3%), Asian (1.0%), Native American (7.5%) and Other (2.2%). Education: Eighth grade or less (25.0%); Some high school (22.4%); High school graduate/G.E.D. (26.2%); Some college (7.1%) and College graduate (19.3%). Marital Status: Single (66.1%), Married (17.0%), Divorced (12.2%), Separated (3.8%) and Widowed (0.9%).

Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets a similar when re-tested as he/she did when originally tested. Table 148 shows the reliability coefficients for each DRI-II scale. Perfect reliability is 1.00.

Table 148. DRI-II Reliability Coefficient Alphas (N = 4,171, 2009)

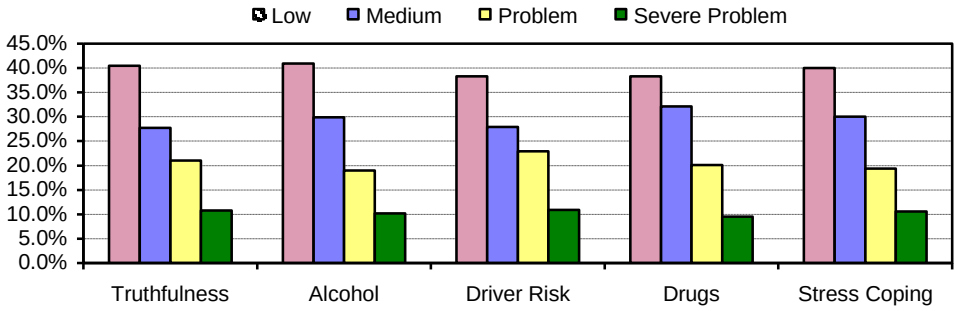
DRI-II Scale	Alpha coefficient
Truthfulness Scale	**.89**
Alcohol Scale	**.92**
Driver Risk Scale	**.87**
Drugs Scale	**.92**
Stress Coping Abilities	**.93**

All DRI-II scales have a reliability of .89 or higher. The professionally accepted reliability standard is .75. DRI-II scale reliability coefficients all exceed this standard and demonstrate impressive reliability.

Accuracy

Test accuracy is determined by the differences between attained scale scores and predicted scores. Small differences indicate high accuracy. Four risk categories are assigned: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem Risk (90 to 100th percentile). The top row of Table 149 shows the percentages of offenders that were predicted to score within each risk range (these predicted percentages for each DRI-II scale risk category were obtained from DRI-II standardization data). The body of Table 149 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 40.6%, which is a difference of 1.6 percentage points from what was predicted.

Figure/Table 149. DRI-II Scales Risk Range Accuracy (N = 4,171, 2009)



Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	40.6	**(1.6)**	29.7	**(0.3)**	21.3	**(1.3)**	8.4	**(2.6)**
Alcohol	39.2	**(0.8)**	30.0	**(0.0)**	20.2	**(0.2)**	10.6	**(0.4)**
Driver Risk	39.5	**(0.5)**	32.9	**(2.9)**	19.0	**(1.0)**	8.6	**(2.4)**
Drugs	39.0	**(0.0)**	28.7	**(1.3)**	20.3	**(0.3)**	12.0	**(1.0)**
Stress Coping	40.2	**(1.2)**	29.8	**(0.8)**	19.6	**(0.4)**	10.4	**(0.6)**

All out of the attained risk range percentiles (20 out of 20) were within **2.9** points of the predicted percentages**.** The average difference between attained percentages and predicted percentages was **1.0** point. These statistics corroborate that the DRI-II is an accurate DUI offender assessment.

Validity

Generally, a test validation procedure consists of a correlation between the test and a criterion measure. The criterion is often another test that measures the same thing. This type of validation has been conducted in several studies on DRI-II scales. These studies are presented earlier in Volume 1 of *DRI-II: An Inventory of Scientific Findings*. These studies are not practical in everyday settings. Therefore, unique database validity analyses were developed and are presented in annual summary reports.

Substance Abuse/Dependency Scale

Offender substance abuse/dependency problems can play a role in DUI/DWI offenses. To explore this, the DRI-II Substance Abuse/Dependency Scale classifies offenders as "substance dependent", "substance abuse" or non-problematic according to their responses to specific abuse and dependency-related test items. Offenders are classified "substance abuse" if they admit to one or more of the four abuse criteria (symptoms). These DSM-IV criteria are discussed in the DRI-II Orientation and Training Manual. Offenders are classified "substance dependent" if they admit to three or more of the seven dependency criteria (symptoms) or if they have ever been diagnosed "substance dependent" in the past. According to DSM-IV methodology, once an individual is diagnosed "dependent", that diagnosis applies for the rest of his/her life. Also according to DSM-IV nomenclature, offenders who do not fall within the 'substance abuse' or 'substance dependent' categories are classified as 'non-problematic'.

Table 150. DSM-IV Classification Scale (N=4,171, 2009)

Classification	First Offenders %	Multiple Offenders %	Total N	%
Non-Problematic	42.0	17.7	1,562	38.2
Substance Abuse	57.2	82.0	2,500	61.1
Substance Dependent	18.5	33.2	861	20.6
Diagnosed dependent in past	6.5	13.9	315	7.6

The table above shows that approximately 20 percent (20.6%) of the total population was classified as "substance dependent" according to DSM-IV criteria. Almost eight percent (7.6%) of the population had been diagnosed "substance dependent" in the past. Over 60 percent of offenders were classified as substance abusers and 38.2% percent of the population was classified as non-problematic. Over 80% of offenders were classified as either "substance dependent" or "substance abuse".

When offender status is considered, the majority (82.0%) of Multiple Offenders were diagnosed "substance abuse" and over one third (33.2%) were diagnosed "substance dependent" according to DSM-IV criteria. Approximately 14 percent had been diagnosed "substance dependent" in the past. Less than one-fifth (17.7%) of Multiple Offenders were classified as non-problematic.

Similar to Multiple Offenders, the majority of First Offenders (57.2%) fell in the DSM-IV "substance abuse" category. However, unlike Multiple Offenders, the second largest proportion of First Offenders (42.0%) was classified as non-problematic. Only 18.5 percent were diagnosed "substance dependent". A

considerably smaller percentage of First Offenders (6.5%) had been diagnosed "substance dependent" in the past than Multiple Offenders.

The results of chi-square analyses indicated that the differences between the percentages of First Offenders and Multiple Offenders that were classified "substance abuse" (χ^2 = 135.69, p <.001, *V*= .18), "substance dependent" (χ^2 = 69.37, p <.001, *V*= .13), "substance dependent" in the past (χ^2 = 41.16, p <.001, *V*= .10), and non-problematic (χ^2 = 130.52, p <.001, *V*= .18) were all statistically significant.

66. Study of DRI-II in a Midwest State DUI Program

This study (2010) examined DRI-II test statistics in a Midwest statewide DUI program. Data was obtained from agencies that administered the DRI-II. Offenders were tested beginning April 1, 2008 and ending March 31, 2009. There were **10,876** offenders included. DRI-II reliability, validity and accuracy were examined.

Method

Participants in this study (N=10,876, 2009) consisted of DUI offenders; 8,489 (78.2%) of offenders were male and 2,371 (21.8%) were female. Demographic composition of the sample follows. Age: 20 & under (9.9%); 21-30 (38.3%); 31-40 (22.3%); 41-50 (19.2%); 51-60 (7.9%) and 61 & over (2.4%). Ethnicity: Caucasian (72.4%); African American (6.8%), Hispanic (7.2%), Asian (0.7%), Native American (12.2%) and Other (0.7%). Education: Eighth grade or less (3.0%); Some high school (17.1%); H.S. graduate (66.2%); Some college (12.1%) and College graduate (1.6%). Marital Status: Single (51.6%), Married (23.7%), Divorced (18.8%), Separated (4.3%) and Widowed (1.6%).

Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets a similar score when re-tested as he/she did when originally tested. Table 144 shows the reliability scores for each DRI-II scale. Perfect reliability is 1.00.

Table 151. DRI-II Reliability Coefficient Alphas (N = 10,876, 2010)

DRI-II Scale	Alpha coefficient
Truthfulness Scale	**.86**
Alcohol Scale	**.91**
Driver Risk Scale	**.86**
Drugs Scale	**.92**
Stress Coping Abilities	**.95**

**Note: The Substance Abuse/Dependency Scale is a classification scale, not a measurement scale, and is therefore excluded from this analysis.

All DRI-II scales have a reliability of .86 or higher. The professionally accepted reliability standard is .75.

Accuracy

Test accuracy is determined by how close attained scale scores are to predicted scores. Small differences indicate high accuracy. Four risk categories are assigned for each DRI-II scale: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem Risk (90 to 100th percentile). These predicted percentages for each DRI-II scale risk category were obtained from DRI-II standardization data. The top row of Table 152 shows the percentages of offenders that were predicted to score within each risk range. The body of Table 145 presents the actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Problem Risk range for the Driver Risk Scale: 20% of offenders were predicted to score within this range. The attained percentage of offenders who scored in this range was 19.8%, which is a difference of 0.2 points from the predicted percentage.

Figure/Table 152. DRI-II Scales Risk Range Accuracy (N = 10,876, 2010)

Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	39.0	**(0.0)**	30.0	**(0.0)**	20.5	**(0.5)**	10.5	**(0.5)**
Alcohol	40.2	**(1.2)**	30.1	**(0.1)**	19.6	**(0.4)**	10.1	**(0.9)**
Driver Risk	38.4	**(0.6)**	32.4	**(2.4)**	19.1	**(0.9)**	10.1	**(0.9)**
Drugs	38.8	**(0.2)**	30.9	**(0.9)**	19.7	**(0.3)**	10.7	**(0.3)**
Stress Coping	40.4	**(1.4)**	30.0	**(0.0)**	19.2	**(0.8)**	10.4	**(0.6)**

Twenty of 20 attained risk range percentiles were within **2.4** points of the predicted percentages (the two exceptions, the Low Risk and Medium Risk Ranges Scale, was within 4.2 points of the predicted percentage). The average difference between attained percentages and predicted percentages was **1.5** points. These results strongly support the accuracy of the DRI-II as an offender-assessment instrument.

Validity

Generally, a test validation procedure consists of a correlation between the test and a criterion. The criterion is often another test that measures the same thing. This type of validation has been conducted in several studies on DRI-II scales. These studies are presented earlier in Volume 1 of *DRI-II: An Inventory of Scientific Findings*. These studies are not practical in everyday settings. Therefore, unique database validity analyses were developed and are presented in annual summary reports.

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another well-established test. This type of validation (concurrent validation) has been conducted in numerous studies on DRI-II scales. These studies are presented in Volume 1 of *DRI-II: An Inventory of Scientific Findings.*

In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was predicted that the offenders who had undergone treatment would attain higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" offenders would have Alcohol and/or Drugs Scale scores that fell within the 70th and 100th percentile range (the Elevated Risk range). The possibility of "treated" offenders scoring in the non-

problematic range (zero to 69th percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the Elevated Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Over eighty percent (**83.5%)** of offenders who had been treated for alcohol problems scored in the Elevated Risk range on the Alcohol Scale. The majority (**81.7%)** of the offenders who had been treated for drug problems scored in the Elevated Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems.

A third validity analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that First Offenders and Multiple Offenders would differ significantly from one another in terms of their scale scores. *T*-test results (presented in Table 153) revealed that Multiple Offenders scored significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Driver Risk Scale, and Stress Coping Abilities scale (on which higher scores indicate poorer stress coping abilities).

Table 153. DRI-II Independent Samples *t*-test Results (N=10,876, 2010)

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	*t*-value	Cohen's *d* (effect size)
Truthfulness	44.72	45.22	-0.99	0.02
Alcohol	38.08	60.84	-46.58*	0.92
Driver Risk	47.03	58.97	-29.65*	0.60
Drugs	21.02	36.27	-22.76*	0.45
Stress Coping Abilities	48.07	50.70	-5.01*	0.10

*Significant at $p < .001$

These results strongly support the predictive validity of the DRI-II. Predictive validity analyses corroborate that the Alcohol, Drugs, Driver Risk, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

Substance Abuse/Dependency Scale

The DRI-II Substance Abuse/Dependency Scale classifies offenders as "substance dependent", "substance abuse" or non-problematic according to their responses regarding DSM-IV criteria. Offenders are classified "substance abuse" if they admit to one or more of the four abuse criteria (symptoms). These DSM-IV criteria are discussed in the *DRI-II Orientation and Training Manual*. Offenders are classified "substance dependent" if they admit to three or more of the seven dependency criteria (symptoms) or if they have ever been diagnosed "substance dependent" in the past. According to DSM-IV methodology, once an individual has been diagnosed "dependent, that diagnosis applies for the rest of his or her life.

Table 154. DSM-IV Classification Scale (N=10,876, 2010)

Classification	Males %	Females %	Total N	%
Non-Problematic	27.9	37.2	3,256	29.9
Substance Abuse	52.6	45.6	5,555	51.1
Substance Dependent	19.5	17.2	2,064	19.0

Diagnosed dependent in past	9.4	9.2	973	9.4

The table above shows that nearly one-fifth (19.0%) of the total population was classified as "substance dependent" according to DSM-IV criteria. Approximately nine percent (9.4%) of the population had been diagnosed "substance dependent" in the past. Over half of the tested offenders were classified as substance abusers and 29.9 percent of the population was classified as non-problematic.

When offender status is considered, nearly 60 percent (57.9%) of Multiple Offenders in this sample were diagnosed "substance abuse" and close to one third (29.0%) were diagnosed "substance dependent". Approximately 16 percent had been diagnosed "substance dependent" in the past. Thirteen percent (13.1%) of Multiple Offenders were classified as non-problematic. The percentage of First Offenders that were diagnosed "substance abuse" (46.0%) was comparable to that of Multiple Offenders. However, unlike Multiple Offenders, the second largest proportion (42.1%) of First Offenders was classified as non-problematic. Only 11.9 percent were diagnosed "substance dependent". A considerably smaller percentage of First Offenders (4.8%) had been diagnosed "substance dependent" in the past than Multiple Offenders.

67. Study of DRI-II in a Midwest State DWI Program

This study (2010) examined DRI-II test statistics in a Midwest statewide DWI program. Data was obtained from agencies that administered the DRI-II. Offenders were tested in November 2009. There were 15,980 DWI offenders included. DRI-II reliability, validity and accuracy were examined.

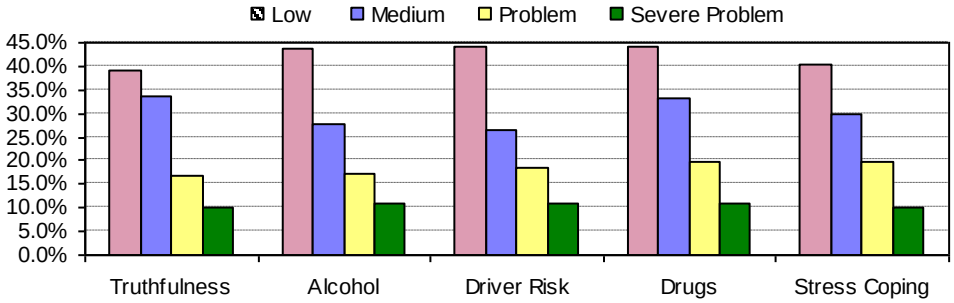
Method

Participants in this study (N=15,980, 2010) consisted of DWI offenders. There were 11,885 (74.8%) males and 3,994 (25.2%) females. Demographic composition of the sample follows. Age: 20 & under (10.0%); 21-30 (44.2%); 31-40 (20.5%); 41-50 (17.6%); 51-60 (6.6%) and 61 & over (1.1%). Ethnicity: Caucasian (76.3%); African American (7.3%), Hispanic (10.2%), and Other (6.2%). Education: Eighth grade or less (0.7%); Some high school (3.7%); H.S. graduate (43.6%); Some college (26.7%); and College graduate (25.3%). Marital Status: Single (60.5%), Married (23.2%), Divorced (0.9%), Separated (12.3%) and Widowed (3.1%).

Accuracy

Test accuracy is determined by examining the differences between attained scale scores and predicted scores. Four risk categories are assigned: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem Risk (90 to 100th percentile). The top row of Table 1 shows the percentages of offenders that were predicted to score within each risk range (these predicted percentages were obtained from DRI-II standardization data). The body of Table 155 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 39.3%, which is a difference of 0.3 percentage points from what was predicted.

Table 155. DRI-II Scales Risk Range Accuracy (N = 15,980, 2010)



Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	39.6	**(0.6)**	29.6	**(0.4)**	22.8	**(3.1)**	8.0	**(3.0)**
Alcohol	41.0	**(2.0)**	27.3	**(2.7)**	20.0	**(2.7)**	11.7	**(0.7)**
Driver Risk	41.6	**(2.6)**	27.3	**(2.7)**	16.3	**(1.5)**	14.8	**(3.8)**
Drugs	39.2	**(0.2)**	27.4	**(2.6)**	22.5	**(0.3)**	10.9	**(0.1)**
Stress Coping	40.0	**(1.0)**	30.4	**(0.4)**	19.6	**(0.4)**	10.0	**(1.0)**

**Note: The Substance Abuse/Dependency Scale is a classification scale, not a measurement scale, and is therefore excluded from this analysis.

Twenty out of 20 attained risk range percentiles were within **3.8** points of the predicted percentages**.** The average difference between attained percentages and predicted percentages was **1.7** points. These results demonstrate that the DRI-II is an accurate offender assessment.

Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets a similar score when re-tested as he/she did when originally tested. Table 156 shows the reliability scores for each DRI-II scale. Perfect reliability is 1.00.

Table 156. DRI-II Reliability Coefficient Alphas (N = 15,980, 2010)

DRI-II Scale	Alpha coefficient
Truthfulness Scale	**.90**
Alcohol Scale	**.92**
Driver Risk Scale	**.86**
Drugs Scale	**.92**
Stress Coping Abilities	**.92**

All DRI-II scales have a reliability of .90 or higher. The professionally accepted reliability standard is .75.

Validity

In this analysis, our prediction criterion was whether offenders identified themselves as problematic substance (alcohol or drugs) users – if so, it was predicted that the majority of these offenders would score within the Elevated Risk range (70^{th} to 100^{th} percentile) on the Alcohol Scale and Drugs Scale,

respectively. Direct self-admission 'true or false' items – "I am an alcoholic" and "I am a drug addict" were used to identify self-admitted 'problem' alcohol users and 'problem' drug users. Although it was still possible for self-admitted 'problem' users' Alcohol Scale or Drugs Scale scores to fall into the zero to 69th percentile, it was expected that the majority would score in the Elevated Risk range. As expected, validity analysis confirmed this prediction. The majority (**97.7%)** of offenders who had been treated for alcohol problems scored in the Elevated Risk range on the Alcohol Scale. All (**100%)** of the offenders who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems.

A third analysis was performed for the Driver Risk Scale. Two comparative groups- "aggressive drivers" and "non-aggressive drivers"- were established using direct admissions. The "aggressive driver" group made the self-admission that they were aggressive drivers, whereas the "non-aggressive driver" group did not.

It was predicted that a large percentage of aggressive drivers would score within the High Risk range (70th to 100th percentile) on the Driver Risk Scale. Analysis results confirmed this prediction. The majority of self-admitted aggressive drivers (**86.6%**) scored at the 70th percentile or higher on the Driver Risk Scale. The Driver Risk Scale accurately identifies aggressive drivers. This finding and the findings from the Alcohol Scale/Drugs Scale analyses support the predictive validity of the DRI-II.

Substance Abuse/Dependency Scale

The DRI-II Substance Abuse/Dependency Scale classifies offenders as "substance dependent", "substance abuse" or non-problematic according to their responses regarding DSM-IV criteria. Offenders are classified "substance abuse" if they admit to one or more of the four abuse criteria (symptoms). These DSM-IV criteria are discussed in the DRI-II Orientation and Training Manual. Offenders are classified "substance dependent" if they admit to three or more of the seven dependency criteria (symptoms) or if they have ever been diagnosed "substance dependent" in the past. (According to DSM-IV methodology, once an individual is diagnosed "dependent", that diagnosis applies for the rest of his/her life.) This analysis included DRI-II and DRI-II Short Form data (combined).

Table 157. DSM-IV Classification of offenders taking the DRI-II (15,980, 2010)

Classification	First Offenders %	Multiple Offenders %	Total N	%
Non-Problematic	55.2	17.9	12,654	48.2
Substance Abuse	38.1	61.7	11,236	42.8
Substance Dependent	7.7	22.8	2,678	10.2
Diagnosed dependent in past	3.4	12.8	1,312	5.0

The table above shows that approximately10 percent (10.2%) of the total population was classified as "substance dependent" according to DSM-IV criteria. Five percent of the population had been diagnosed as "substance dependent" in the past. More than forty percent (42.8%) of offenders were classified as substance abusers and 48.2 percent of the population was classified as non-problematic. Over 50% of offenders were classified as either "substance dependent" or "substance abuse".

When offender status is considered, the majority (61.7%) of Multiple Offenders was diagnosed "substance abuse", and nearly one-quarter (22.8%) were diagnosed "substance dependent". Approximately 13 percent (12.8%) had been diagnosed "substance dependent" in the past. Only 17.9% of Multiple Offenders were classified as non-problematic.

Unlike Multiple Offenders, the majority of First Offenders (55.2%) were classified as non-problematic. Less than forty percent (38.1%) of First Offenders were diagnosed "substance abuse" and only 7.7 percent were diagnosed "substance dependent". A considerably smaller percentage of First Offenders (3.4%) had been diagnosed "substance dependent" in the past than Multiple Offenders.

The results of chi-square analyses indicated that the differences between the percentages of First Offenders and Multiple Offenders that were classified "substance abuse" " (χ^2 = 1131.89, p <.001, V= .21) "substance dependent" (χ^2 = 189.11, p <.001, V= .10), "substance dependent" in the past (χ^2 = 590.86, p <.001, V= .15), and non-problematic (χ^2 = 2317.04, p <.001, V= .30) were all statistically significant.

68. Study of DRI-II in a Midwest State DUI Program

This study (2011) examined gender differences in DRI-II scale scores for DUI/DWI offenders in a Midwestern state. Data was obtained from statewide agencies that administered the DRI-II. Offenders were tested beginning April 1, 2008 and ending May 31, 2011. There were **16,640** offenders included. Of these offenders, 12,404 (74.5%) were male, 4,152 were female (25.0%); 84 cases (0.5%) were missing gender information.

Method

Participants in this study (N=16,640, 2011) consisted of DUI offenders; 12,404 (74.5%) of the offenders were male and 4,152 (25.0%) were female. Demographic composition of the sample follows. Age: 20 & under (9.7%); 21-30 (42.8%); 31-40 (21.3%); 41-50 (17.7%); 51-60 (7.1%) and 61 & over (1.3%). Ethnicity: Caucasian (74.1%); African American (9.1%), Hispanic (10.5%), Asian (2.4%), Native American (0.6%), Alaskan Native (0.1%) Other (2.7%), and Missing (0.6%). Education: Eighth grade or less (1.0%); Some high school (5.1%); GED (28.2%), H.S. graduate (38.9%); Trade/Technical School (3.1%), Some college (22.2%) and College graduate (1.4%). Marital Status: Single (59.7%), Married (22.9%), Divorced (2.7%), Separated (11.2%) and Widowed (3.0%).

Gender Differences

The importance of exploring differences between male and female DUI/DWI offenders has been emphasized in the literature. Although males commit the majority of impaired driving offenses, the number of female offenders arrested for DUI/DWI has sharply increased in recent years (McKay, 2010). There has been some evidence of positive outcomes from gender-sensitive intervention and counseling for DUI/DWI offenders (White & Hennessey, 2007). *T*-test analyses were performed for all DRI-II scale scores in terms of gender. Results are presented in Table 168.

Table 168. DRI-II Independent Samples *t*-test Results (N=10,876, 2010)

Scale	Mean Scores Males	Mean Scores Females	*t*-value	Cohen's (Effect size)
Truthfulness	10.35	10.75	-3.81	0.07
Alcohol	6.53	5.19	8.55*	0.16

Driver Risk	8.10	6.84	10.16*	0.19
Drugs	3.37	2.48	8.26*	0.15
Stress Coping Abilities	147.85	146.52	1.68	0.03

*Significant at $p < .001$

As shown in Table 168, three of the five DRI-II scales had significant differences in terms of males' and females' average scores. Male offenders attained significantly higher scores on the Alcohol Scale, Driver Risk Scale and Drugs Scale than female offenders. Mean Truthfulness Scale and Stress Coping Abilities Scale scores of males and females were essentially the same. These results are similar to results of previous analysis of male and female score comparisons. Adjustments have been made to the DRI-II to account for these differences. Ongoing database research will ensure that new or changing gender differences will be incorporated into the DRI-II as warranted by analysis results.

69. Correlations Between DRI-II Scale Scores and Selected Court History

Correlation analyses were performed for selected DRI-II scales and six court history items obtained from DRI-II answer sheets. Test data for 46,101 DUI/DWI offenders administered the DRI-II in a Southeastern US state were used for this study.

Method

Participants in this study (N=46,101, 2011) consisted of DUI offenders; 34,100 (74.0%) of the offenders were male and 12,001 (26.0%) were female. Demographic composition of the sample follows. Age: 20 & under (5.8%); 21-30 (34.1%); 31-40 (22.9%); 41-50 (21.6%); 51-60 (11.5%) and 61 & over (4.0%). Ethnicity: Caucasian (68.7%); African American (9.6%), Hispanic (19.6%), Asian (1.0%), Native American (0.4%) and Other (1.6%). Education: Eighth grade or less (6.3%); Some high school (11.9%); GED (6.8%), H.S. graduate (34.0%); Trade/Technical School (2.1%), Some college (20.3%) and College graduate (15.1%). Marital Status: Single (55.1%), Married (21.0%), Divorced (15.5%), Separated (6.8%) and Widowed (1.6%).

Correlation analyses were performed for DRI/DRI Short Form Alcohol Scale, Drugs Scale and Driver Risk Scale scores and six offender-reported court history items: BAC level at the time of arrest (for their most recent DUI arrest), and within the offenders' lifetimes – the total number of DUI arrests, alcohol related (non-DUI) arrests, drug-related (non-DUI) arrests, at-fault accidents, and the number of traffic violations resulting in points on their driver's license. Table 169 (below) displays the resultant correlation coefficients obtained for all offenders taking the Florida DRI or DRI Short Form in 2010 (n=46,101). Statistically significant correlations (those having substantial effect sizes) are denoted with asterisks.

Table 169. Correlation Coefficients
Court-Related History Items and DRI and DRI Short Form Scale Items (N = 46,101, 2011)

Scale	BAC Level	DUI Arrests	Alcohol Arrests	Drug Arrests	At-Fault Accidents	Traffic Violations
Alcohol	.174*	.390**	.006	.007	-.003	-.004
Driver Risk	-.076	.218*	.130*	.089	.199*	.275**
Drugs	-.083	.129*	.127*	.300**	.082	.054

*Small effect (r = between .10 and .24); **Medium effect (r = between .25 and .39); ***Large effect ($r \geq .40$)

A strong positive correlation was found between Alcohol Scale scores and the number of DUI arrests (*r*=.390). A strong positive correlation was also found between Alcohol Scale scores and offender BAC levels (*r*=.174). The prevalence of alcohol-related problems (as measured by higher Alcohol Scale scores) is associated with higher BAC levels and a greater number of DUI arrests.

Drugs Scale scores were most significantly correlated with drug-related (non-DUI) arrests (*r*=.300). This strong positive correlation indicates that offender drug-related problems (manifested as higher Drugs Scale scores) are associated with a greater number of drug-related arrests.

The number of traffic violations (*r*=.275) and the number of at-fault accidents(*r*=.199) were both strongly (positively) correlated with higher Driver Risk Scale scores. The tendency for risky driving behavior, as measured by high scores on the Driver Risk Scale, is associated with a greater number of traffic violations and at-fault accidents.

70. DRI-II Validity Analysis: First and Multiple Offender Comparison

The DRI-II and DRI-II Short Form are both used in a Midwest state DUI program. Individuals charged with driving under the influence were administered one of the two tests. There were a total of 27,059 offenders included in this study.

Method

Participants in this study (N=27,059, 2011) consisted of DUI offenders; 20,281 (74.9%) of the offenders were male and 6,778 (25.1%) were female. Demographic composition of the sample follows. Age: 20 & under (10.0%); 21-30 (39.9%); 31-40 (21.2%); 41-50 (18.2%); 51-60 (8.3%) and 61 & over (2.4%). Ethnicity: Caucasian (87.6%); African American (7.3%), Hispanic (3.2%), Asian (0.6%), Native American (0.4%) and Other (0.9%). Education: Eighth grade or less (1.8%); Some high school (14.8%); H.S. graduate (61.7%); Some college (18.8%) and College graduate (2.9%). Marital Status: Single (56.5%), Married (21.0%), Divorced (17.2%), Separated (4.1%) and Widowed (1.2%).

A discriminant validity analysis compared first-time offenders' and multiple offenders' DRI-II/DRI-II Short Form scale scores. Offenders classified as first-time offenders are those having no more than one domestic violence arrest, whereas multiple offenders are those that have been arrested for domestic violence two or more times. Because DRI-II/DRI-II Short Form scales measure problem severity, it was predicted that multiple offenders would obtain higher (more severe) scale scores than first-time offenders. Refer to Table 3.

Table 170. DRI-II/DRI-II Short Form Scale Score Comparisons of Offender Groups (N=27,059*, 2011)

DRI-II/DRI-II Short Form Scale	First Offenders' Avg. Scores	Multiple Offenders' Avg. Scores	*T*-value	Level of Significance
Truthfulness Scale	46.72	42.60	*t*=11.54	p<.001
Alcohol Scale	53.23	79.67	*t*=-131.45	p<.001
Driver Risk Scale	61.96	75.85	*t*=-58.85	p<.001
Drugs Scale	27.36	37.88	*t*=-26.89	p<.001
Stress Coping Abilities*	51.39	55.28	*t*=-10.39	p<.001

*Note: Stress Coping Abilities Scale scores are reversed, meaning that higher scores are associated with better stress coping skills. For all other scales, higher scores represent more severe problems. The DRI-II Short Form does not have a Stress Coping Abilities Scale; therefore only DRI-II data (n=25,633) was used for comparing Stress Coping Abilities scale scores of first and multiple offenders.

As shown above in Table 170, multiple offenders' scores on nearly all DRI-II/DRI-II Short Form scales indicated more severe problems, with the exception of the Truthfulness Scale. First offenders had a higher average Truthfulness Scale score than multiple offenders, indicating that first offenders may be slightly more prone to denial or problem minimization than offenders with prior arrests. For all other scales, multiple offenders' average scores were higher (more severe) than those of first offenders, representing heightened problem severity. Multiple offenders' more severe problems are manifested as higher scale scores. **These results corroborate the discriminant validity of the DRI-II and DRI-II Short Form.** DRI-II and DRI-II Short Form scales effectively differentiate between first offenders and offenders that are expected to have more severe problems (multiple offenders).

71. DRI-II Accuracy Confirmation Using Statewide Data

This study was conducted in 2012 to confirm the accuracy of the DRI-II. Test accuracy can be calculated by comparing the differences between "predicted" and "attained" risk range percentages. **Small differences represent high test accuracy.**

For each DRI-II (Driver Risk Inventory-II) scale, respondents are classified into four risk ranges:

- Low Risk (zero to 39th percentile),
- Medium Risk (40th to 69th percentile),
- Problem Risk (70th to 89th percentile)
- Severe Problem (90th to 100th percentile)

These are the predicted risk ranges for offender scores on each of the DRI-II scales. Results are presented below in Table 171.

Method

There were 8,656 offenders who completed the DRI-II in 2011. Characteristics and court history data are as follows: 74% were male, 27% were female; 32.82 was the average age of offenders; 80% were Caucasian, 6% were African American, 10% were Hispanic, 1% were Asian, 2% were Native American, 1% responded Other; 63% were single, 19% were married, 14% were divorced, 4% were separated, 1% were widowed; 2% completed 8th grade or less, 11% completed some high school, 43% were high school graduates, 26% completed some college, and 17% graduated college.

Nine percent had no DUI arrests, 71% had no non-driving alcohol arrests, 84% had no non-driving drug arrests, 35% had no traffic violations, 76% had no at fault accidents, and 72% had not previously attended DUI school; 85% had their license suspended, 2% had charges reduced, 7% refused a breath test, and 2% had another DUI charge pending. Three percent had BAC .00-.07, 40% had BAC .08-.14, 34% had BAC .15-.19, 15% had BAC .20-.24, and 8% had BAC .25 and greater. Eighty percent met DSM-IV diagnosis criteria for substance abuse, 34% met DSM-IV diagnosis criteria for substance dependence.

Accuracy

Differences between predicted and attained percentages are shown in Table 171; parentheses (in bold) are used to denote the difference between the predicted and attained scores.

Table 171. DRI-II Accuracy Findings (N=8656)

Scales	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Risk (11%)	
Truthfulness	37.8	**(-1.2)**	31.7	**(1.7)**	20.9	**(.9)**	9.5	**(-1.5)**
Alcohol	40.5	**(1.5)**	30.3	**(.3)**	18.9	**(-1.1)**	10.3	**(-.7)**
Drugs	38.1	**(-.9)**	33.1	**(3.1)**	18.6	**(-1.4)**	10.3	**(-.7)**
Driver Risk	40.1	**(1.1)**	29.1	**(.9)**	19.9	**(-.1)**	10.9	**(-.1)**
Stress Coping Abilities	40.5	**(.5)**	29.7	**(.3)**	19.5	**(-.5)**	10.3	**(-.7)**

For example, 39% of clients are predicted to score within the Low Risk range for the Alcohol Scale. The actual percentage of individuals who scored in this range was 40.5%, which is **(1.5)** percentage points above the predicted 39 percentile for low risk Alcohol Scale scores. The largest predicted-attained score difference is in the Medium Risk range, on the Drug scale **(3.1)**. All other scale comparisons are even more accurate.

These findings confirm the accuracy of the DRI-II in assessing DUI offender behavior.

72. DRI-II Validity Confirmation of DRI Using Statewide Data

In testing, the term *validity* refers to the extent to which a test measures what it was designed to measure. A test cannot be accurate without being valid. In the following validity analysis conducted in 2012, first-time offenders' DRI-II mean scale scores were compared to multiple offenders' mean scale scores. First-time offenders are defined as offenders having no more than one arrest, whereas multiple offenders have been arrested two or more times.

Method

Data from 11,428 offenders were used in this analysis. Demographics were 76% were male, 24% were female; average age was 35.2 for all offenders, 35.4 for males, and 34.5 for females; 72% were Caucasian, 7% were African American, 6% were Hispanic, <1% were Asian, 12% were Native American, and 1% selected Other; 49% were single, 24% were married, 21% were divorced, 4% were separated, and 2% were widowed; 3% completed 8th grade or less, 15% completed some high school, 30% completed a GED, 30% graduated from high school, 7% completed some college, 11% technical/business school, 3% graduated from college, and <1% completed a professional/graduate degree

Court history responses were as follows: 83% were First-time offenders and 17% were Multiple offenders; 58% of offenders had zero DUI arrests, 81%, had no non- driving related alcohol arrests, 85% of offenders no non driving drug related arrests, 40% had no traffic violations, 78% of offenders had no at-fault traffic citations, and 69% of offenders had attended no DUI schools; 26% of offenders had their licenses suspended, 14% had their charges reduced, 19% refused to take a breath test, and 2% had another DUI pending; BAC was .119 for all offenders, .117 for male offenders, .124 for female offenders, 1,535 refused the breath test. The difference between male and female BAC levels was statistically significance; 98% offenders met the criteria for a substance abuse diagnosis; 5% of offenders met the criteria for a dependence diagnosis

Validity

A comparison between the mean scores of first-time offenders and multiple offenders found higher mean scale scores for multiple offenders on Alcohol, Drugs, and Driver Risk Scales. The results are presented in Table 172.

Table 172. DRI-II Validity Findings (N=11428)

Scales	First-time Offender Mean Score	Multiple Offender Mean Score	t	Significance
Truthfulness	8.32	8.13	.952	**Not Significant**
Alcohol	8.77	22.68	-39.62	**<.001**
Drugs	7.51	10.29	-8.5	**<.001**
Driver Risk	11.73	17.37	-17.69	**<.001**
Stress Coping Abilities	138.42	133.67	2.68	**.07**

T-test analyses were conducted to examine whether the differences in mean scores were statistically significant. Results indicated that for the Alcohol, Drugs, and Driver Risk Scales, the differences were statistically significant. The result for the Truthfulness Scale and Stress Coping Abilities Scale were not statistically significant.

First time and multiple DUI offenders attained similar or not statistically significant Truthfulness Scale scores. Similar results have been reported in earlier analyses. It may be that all offenders have similar concerns in court related assessment settings. This may account for the enduring denial and problem minimization observed in multiple offenders' scores. Moreover, the role that treatment or intervention may have on subsequent tests (multiple offenders) remains unknown. Similar Truthfulness Scale mean scale scores for first-time and multiple offenders warrant further research.

Higher, but not statistically significant, first time offender Stress Coping Abilities mean scores may demonstrate a difference in stress management education, training, or learned strategies among offenders; first time and multiple. The score differences may reflect acquisition or learning of stress management skills. This finding warrants further investigation; however as a general rule, higher DRI-II scores were obtained by multiple DUI offenders when compared to first-time offenders.

These results support the validity of the DRI-II and demonstrate that it effectively differentiates between offenders that are known to have more severe problems (multiple offenders) than first time offenders.

73. Florida DRI Test Administration Analysis

The purpose of this study was to examine whether there are differences between online and disk test administration for a sample of Florida DRI offenders. Data from 2012 were used in this analysis, disk data (n=2530) and a random sample accounting for 9% (n=3280) of the larger online database were extracted. There were 5,811 offenders used in this analysis.

Participants

Demographic characteristics were as follows: 70% (4072) were male, and 30% (1734) were female; the average offender age was 37.8. *Race/Ethnicity*: 75.2% were white, 6.7% were African-American, 15.5%

were Hispanic, <1% were Asian and Native American, and 1.4% listed Other, however, no additional information was available for these offenders. Race and ethnicity data were missing for 32 offenders. *Marital:* 55.2% of the offenders were single, 19.1% were married, 23.4% were divorced or separated, 2.2% reported being widowed; marital information was missing for 20 offenders. *Education:* 12.2% had less than a high school education, 41.1% completed their GED and high school diploma, 21.9% had completed some college, 2.5% completed a technical/business school, 19.0% graduated college, and 3.5% completed a graduate/professional degree.

All counties were represented in this group of offenders.

Criminal history responses were as follows: 91% had one or more DUI arrests; 15% had one or more reckless driving arrests; 15% had driving charges reduced; 9% had one or more alcohol related arrests; 7% had one or more drug related arrests; 18% had one or more at fault accidents; 40% had one ore more traffic violations; 19% had one or more misdemeanor arrests, and 10% had one or more felony arrests.

Test Statistics

Reliability

Cronbach's alpha was used to establish reliability for the Florida DRI. Three analyses were conducted, 1) overall sample, 2) disk data sample, and 3) online data sample. ***Results were consistent among all three analyses and support the reliability of the Florida DRI regardless of test administration.***

Validity

Contrast groups were used to establish construct validity. Florida DUI offenders were categorized into two groups, first time offenders and multiple offenders. First time offenders had 1 DUI arrest; multiple offenders had two or more DUI arrests.

Again, three analyses were conducted to examine whether the Florida DRI could distinguish between offenders who present greater risk.

- Results were statistically significant for the overall sample.
- Results were statistically significant for the disk data sample.
- Results were statistically significant for the online data sample.

These results underscore the validity of the Florida DRI regardless of how the test is administered.

Comparison

Participants

Gender percentages were similar for the disk and online test takers; there were more Caucasian disk test takers and fewer Hispanic disk test takers; education percentages were consistent for both types of test administration; there were differences in marital status between the two groups, fewer disk test takers were single, and more were divorced or separated compared to the online test taker group. **There were no statistically significant differences in age and BAL between the two groups.**

All counties were represented in the online sample; 15 counties were represented in the disk sample.

Disk test takers were more likely to respond 'Not Available' or "Refused' than the online sample. The percentage test takers who reported BAL '.00 - .07 was higher for online test takers than disk test takers.

A *t*-test analysis was conducted to examine whether there were differences in the test takers on the Florida DRI. Adjustments for unequal variances and Bonferroni adjustment was applied to control for experimentwise inflation.

Results

Results for the *t-test* were statistically significant for all Florida DRI scales. This suggests that for the sample drawn, there are meaningful differences between offenders who completed the test online, and those who completed the test in a Windows environment. **These differences reflect the sample and are not a function of the test.**

More disk test takers refused to provide a BAL response than online test takers and may reflect more severe problems. From previous Florida DRI research, individual who refused to provide BAL were more likely to be repeat DUI offenders.

In addition to individual test taker differences, administrator training and implementation may have influenced score differences. Moreover, there may be something unique about the counties in which the disk data is collected; however, the fact that online data is collected from the same counties does not seem to support this alternative.

This study underscores the validity and reliability of the Florida DRI; regardless of how the test is administered these essential elements remained unchanged. This analysis has raised interesting questions about Florida DRI offenders and test administration. Examination of other DRI-II data will be forthcoming and may help to explain these findings.

74. Current DUI Offender with Pending DUI Charges—Recidivism Insight from a Unique Offender Sample.

This study (2013) was conducted as part of a larger statewide DUI project and was submitted to the Journal of Community Corrections for review. A brief summary of the study is provided here.

Summary

The purpose of this study was to explore the variation that might exist among repeat DUI offenders using a unique sample of offenders using their Driver Risk Inventory (DRI) test scores**; individuals who have initiated a DUI assessment for a previous offense and have another DUI charge pending. In other words, these are offenders who acquired a DUI but did not initiate the court requirements before acquiring another DUI.** Demographic, BAC, and driving behavior information was consistent with larger population, and previous research. Overall, the group demonstrated greater problem severity, as measured by the Alcohol Scale and Driver Risk Scale, and to a lesser extent the Drug Scale. Offenders in this group were more truthful than expected and managed stress better than expected. It was notable, given their situation that most offenders in the sample were not motivated for treatment, and did not consider their drinking, drug use, or driving as a problem. Implications for evaluation staff are discussed.

Participants

The sample was drawn from a large set of data collected on DUI offenders from the State of Florida who completed the Driver Risk Inventory (DRI). There were 9, 570 offenders who had another pending DUI at the time of their assessment; this represented approximately 4% of the overall Florida submissions. Offenders were slightly older, 38.3, male (76%), white (67%), single, (55%), and had at least a high school education (44.2%). These characteristics were consistent with percentages for the overall population, with the exception of education. In the sample, more offenders had less than a high school education (15.2%).

For subsequent analyses, offenders were grouped into two categories, those with 2 DUI (current and pending) and those with 3 or more DUI. Approximately 85% of repeat offenders had 2 DUI and 15% had 3 or more DUI.

Table 173. Lifetime DUI, Problem and Severe Alcohol and Driver Risk (N= 9, 570)

		Problem Risk		Severe Risk	
		N	%	N	%
Alcohol Risk	2 DUI	2210	27.4	948	11.8
	3 or more DUI	700	47.3	480	32.4
Driver Risk	2 DUI	1974	24.5	1077	13.4
	3 or more DUI	668	45.1	269	18.2

Approximately 80% of offenders with 3 or more DUI arrests were classified as Problem and Severe Risk; whereas 39% of offenders with 2 DUI were classified as Problem and Severe Risk.

Results for the Driver Risk Scale were consistent with findings from the Alcohol Scale. Approximately 60% of offenders with 3 or more DUI arrests were classified as Problem and Severe Risk and approximately 38% of offenders with 2 DUI arrests were classified as Problem and Severe Risk.

Table 174. Rating of Alcohol, Drug, Driving and Motivation for Treatment (N= 9, 570)

		No Problem		Moderate		High	
		N	%	N	%	N	%
My drinking	2 DUI	5465	68.0	559	7.0	701	8.7
	3 or more DUI	705	47.8	199	13.5	337	22.8
My drug use	2 DUI	7267	90.6	168	2.1	331	4.1

	3 or more DUI	1248	85.0	46	3.1	112	7.6
My driving	2 DUI	6043	75.3	395	4.9	214	2.7
	3 or more DUI	1124	76.3	89	6.0	51	3.5
My motivation	2 DUI	5314	66.4	556	6.9	1040	13.0
	3 or more DUI	421	45.1	156	10.6	661	15.4

Results were as follows, 65% reported no problem with alcohol, 90% reported no problem with drugs; 75% reported they did not engage in aggressive driving, and 63% reported no motivation for treatment. The results were refined by number of DUI arrests and are presented in Table 174. Repeat offenders with 3 or more DUI arrests reported greater motivation for treatment and described their alcohol and drug use as a serious problem than offenders with 2 DUI arrests. There were no differences between the groups when asked about driving aggression; approximately 75% of CPO reported that aggressive driving was not a problem.

Discussion

Examination of this unique DUI offender group has given some insight into the differences among repeat offenders, chiefly, even among recidivists those with more DUI and driving offenses present greater risk for repeat offenses. Offenders in this sample with three or more DUI offenses may not have benefited from earlier sanctions and treatment interventions; with additional information about engagement and completion of court imposed requirements may help to reduce recidivism for repeat offenders.

75. Reliability and Validity Study Using Corrections Sample from Northeastern United States

This study was conducted to confirm reliability and validity of the DRI using a sample of DUI offenders referred for testing from a State Department of Corrections.

Participants

Data from 583 offenders were used in this analysis. Gender: 85% were male, 15 were female. Age: average age was 40.9 for all offenders, 40.8 for males, and 41.3 for females Race/Ethnicity: 80% were Caucasian, 7% were African American, 11% were Hispanic, <1% were Asian, <1% were Native American, and 1% selected Other. Marital Status: 56% were single, 19% were married, 21% were divorced, 4% were separated, and <1% were widowed. Education: 4% completed 8th grade or less, 12% completed some high school, 42% graduated from high school, 30% completed some college, 13% graduated from college, and 3% completed a professional/graduate degree.

Offender Status: 19% were First-time offenders and 81% were Multiple offenders; BAC: BAC was .134 for all offenders, .132 for male offenders, .141 for female offenders, 214 refused the breath test. DSM-IV 98% offenders met the criteria for a substance abuse diagnosis; 5% of offenders met the criteria for a dependence diagnosis. DUI Consequences: 93% had their licenses suspended and 7% had their charges reduced to reckless driving.

Reliability

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each DRI scale. Perfect reliability is 1.00 and the professionally accepted standard for this type of instrument is .70-.80. Table 175 presents reliability coefficients for each DRI scale and all scales received high reliability scores and support the DRI as a reliable screening instrument.

Table 175. DRI-II Reliability (N=583, 2013)

Scales	Cronbach's Alpha
Truthfulness	.88
Alcohol	.93
Driver Risk	.89
Drugs	.93
Stress Management	.93

In testing, the term *validity* refers to the extent to which a test measures what it was designed to measure. A test cannot be accurate without being valid. In the following validity analysis conducted in 2013, first-time offenders' DRI-II mean scale scores were compared to multiple offenders' mean scale scores. First-time offenders are defined as offenders having no more than one arrest, whereas multiple offenders have been arrested two or more times. Higher scores for multiple offenders were expected on scales except the Stress Management Scale, which measures prosocial and coping abilities; thus these scores are expected to be lower for multiple offenders.

Validity

A comparison between the mean scores of first-time offenders and multiple offenders found higher mean scale scores for multiple offenders on Alcohol, Drugs, and Driver Risk Scales. As expected, multiple offenders demonstrated poorer stress management (a lower score). The results are presented in Table 176.

Table 176. DRI-II Validity Findings (N=583, 2013)

Scales	First-time Offender Mean Score	Multiple Offender Mean Score	t	Significance
Truthfulness	10.93	9.89	1.65	**not significant**
Alcohol	25.33	35.33	7.25	**<.001**
Drug	16.55	17.01	.359	**not significant**
Driver Risk	14.18	17.19	3.70	**<.001**
Stress Management	108.69	106.03	.607	**not significant**

T-test analyses were conducted to examine whether the differences in mean scores were statistically significant. Adjustments were made to account for the differences in variance and control for experimentwise error. Results indicated that for the Alcohol, and Driver Risk Scales, the differences were statistically significant. The result for the Truthfulness Scale, Drug Scale, and Stress Management Scale were not statistically significant. These results are likely to due to the small mean group differences between first time and multiple offenders.

Overall, multiple offenders scores demonstrate more problems as measured by the DRI. These results support the validity of the DRI-II and demonstrate that it effectively differentiates between offenders that are known to have more severe problems (multiple offenders) than first time offenders.

76. 7-year Study of DRI-II Results using a large sample from a Southwest Social Service agency.

Participants: the sample was comprised of 69% male offenders, 31% female offenders; Race/Ethnicity:54% were Caucasian, 6% were African American, 19% were Hispanic, 2% were Asian, 9% were Native American; Marital Status: 81% were single, 9% were married, 7% were divorced, and 2% were widowed Education: 13% completed 8th grade or less. 16% completed some high school, 14% graduated high school, 10% completed some college, 6% graduated from college and 10% completed a graduate or professional degree. Income: 86% earned more than $15, 001 per year. Offender Status: 85% were first-time offenders and 15% were repeat offenders.

Reliability

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Tempe Social Services. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 (Murphy & Davidshofer, 2001).

Table 177. DRI-II Reliability (N=5, 852, 2014)

Scales	Cronbach's Alpha
Truthfulness	.89
Alcohol	.90
Driver Risk	.88
Drugs	.85
Stress Management	.91

Validity

In testing, the term *validity* refers to the extent that a test measures what it was designed to measure. A test cannot be accurate without being valid. When individuals known to have more severe problems or symptoms receive higher scale scores than individuals known to have fewer problems or symptoms, the test is said to have evidence of construct validity (DeVon et al., 2007). Offenders were categorized into

first-time and repeat offenders. First-time offenders are defined as having one arrest; repeat offenders have two or more arrests.

It is anticipated that repeat offenders' mean scale scores would be higher than first-time offenders, indicating more severe symptoms or problems. On the Stress Management Scale scoring is modified to reflect prosocial and protective factors; a lower score for Repeat offenders would indicate more severe problems and poorer stress management skills.

Table 177. DRI-II Validity Findings (N=5, 852, 2014)

Scales	First-time Offender Mean Score	Repeat Offender Mean Score	t	Significance
Truthfulness	11.72	11.20	2.56	**not significant**
Alcohol	7.35	14.40	16.54	**<.001**
Drug	2.80	5.39	9.05	**<.001**
Driver Risk	8.09	10.99	10.03	**<.001**
Stress Management	146.35	142.34	2.25	**not significant**

First-time offenders' and repeat offenders' mean scale scores were compared. Results found higher mean scale scores for repeat offenders on the Alcohol, Driver Risk, and Drug Scales. As expected repeat offenders scored lower on the Stress Management Scale, indicating poorer stress management than first time offenders. First time offenders had higher Truthfulness Scale scores which may be associated with an offender's level of experience with law enforcement and assessment procedures. These individuals may, naively, engage in more denial and minimizing behaviors whereas, multiple offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

T-test analyses were conducted to examine whether the differences in mean scores were statistically significant. Results for all scales were statistically significant for the Alcohol Scale, Driver Risk Scale, and Drug Scale but not statistically significant on the Truthfulness Scale or Stress Management Scale. The non-significant findings are likely due to the small difference between group means; however, as a general rule, higher DRI-II scores were obtained by repeat DUI offenders when compared to first-time offenders.

SUMMARY

This Inventory of Scientific Findings Volume II concludes with research conducted in 2014 and the transition from DSM-IV-TR to the updated and expanded version, DSM-5. The updated version of the Driver Risk Inventory -2 will substance use classification criteria consistent with DSM-5.

This document is not intended to be an all-encompassing compilation of DRI-II research; yet it does summarize many studies and research that support the reliability, validity and accuracy of the DRI-II. More than 1.3 million DUI/DWI offenders are represented herein. Based on this research, the DRI-II

presents an increasingly accurate picture of DUI/DWI offenders and the driving risk they represent. The DRI-II provides a sound empirical foundation for responsible decision making.

Summarized research demonstrates that the DRI-II is a reliable, valid and accurate instrument for DUI offender assessment. It is reasonable to conclude that the DRI does what it purports to do. The DRI-II acquires a vast amount of relevant information for staff review prior to decision making. Empirically based scales are objective and accurate. Assessment has shifted from subjective opinions to objective accountability. The population studied consists of convicted DUI/DWI offenders and the criterion is driver risk. Future DRI-II research will continue to explore important parameters for accurate identification of driver risk.

Areas for future research are many and complex. To date, only a handful of demographic, socioeconomic and driver history variables have been studied. Gender differences have been identified and gender specific scoring procedures implemented. DRI-II research continues to evaluate age, gender, ethnicity and education. Consistent with the foregoing, we encourage more research on demographic, cultural and environmental factors impacting on driver risk.

DRI-II research has demonstrated important relationships between driver risk and number of prior DUI/DWI convictions, BAC level at time of arrest, and court-related records. However, many other relationships need to be better understood for even more accurate identification of driver risk. Similarly, we need more empirical information on the effects of client intervention, education program effectiveness and substance (alcohol and other drugs) abuse treatment outcome--in terms of their effect on recidivism and driver risk. Few fields of assessment represent such important opportunities for creative discovery. The DRI-II is committed to this research.

REFERENCES

Hammond, N. and Tamble, L.: DWI Assessment: A Review of the Literature. Hazeldon Foundation, 1983.

Jalazo, J., Steer, R.A., and Fine, E.W. Use of Breathalyzer Scores in the Evaluation of Persons Arrested for Driving While Intoxicated. Journal of Studies on Alcohol, 39 (7), 1978, 1304-1307.

Keistner, and Speight, L.: Oregon Multivariate Prediction of Drinking Drivers. Oregon Department of Transportation, Motor Vehicles Division, 1975.

McKay, M. (2010). Commentary: Women and alcohol: increasingly willing to drive while impaired. *Annals of Emergency Medicine*, 55, 211-214.

Mortimer, R.G., Filkins, L.D. and Lower, J.S.: Court Procedures for Identifying Problem Drinkers: Phase II (U.S. Department of Transportation, Report No. HSR171-120, HUF-II), Ann Arbor, Michigan: University of Michigan Highway Traffic Safety Research Institute, 1971.

National Highway Traffic Safety Administration (NHTSA), Washington, D.C., 20590. Assessment of Classification Instruments Designed to Detect Alcohol Abuse, DOT HS 807 475, December, 1988. Authors: C.L. Popkin, C.H. Kannenberg, J.H. Lacey, and P.F. Waller. Sponsoring agency: U.S. Department of Transportation.

Sandler, I., Palmer, S., Holmen M. and Wynkoop, R.: Drinking Characteristics of DWI's screened as Problem Drinkers. Alcohol Health and Research World, Fall, 1975, 19-23.

Selzer, M.L.: The Michigan Alcoholism Screening Test: The Quest for a New Diagnostic Instrument. American Journal of Psychiatry, 127 (1971): 89-94.

White, W. & Hennessey, M. (2007). *Evaluating, Training, and Monitoring the Female DUI Offender*. http://cspl.uis.edu/ILAPS/Research/documents/DUIWomenPaper2-1-2007.

***