A Survey of Clinical Neuropsychologists with Experience in Forensic Contexts:
Prevalence, Training, and Jurisdictional Differences in Civil and Criminal Cases

Thesis Presented to
The Faculty of the College of Arts and Sciences
Drexel University

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science in Psychology

by
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June 2011
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Acknowledgements

This thesis is the culmination of much collaboration. I would especially like to thank the members of my committee: David DeMatteo, JD, PhD, for his continued support and keen editorial eye; Kirk Heilbrun, PhD, for his helpful comments and guidance; and Thomas Swirsky-Sacchetti, PhD, for his valuable insight into the field. I would also like to thank Shane Bush, PhD, President of the National Academy of Neuropsychology, Michael McCrea, PhD, President of the American Academy of Clinical Neuropsychology, and Jerry Sweet, PhD, distinguished member of the American Academy of Clinical Neuropsychology, for their time, interest, and support.

This thesis would not have been possible without the influence of my family. This is especially true of my parents, Laurie and David LaDuke, and sister, Lauren LaDuke, who helped to keep me grounded and focused on the larger picture. Finally, I cannot begin to express the gratitude I feel towards my grandparents, Ann and Lauren Choate, whose generous support and genuine consideration are the examples to which I aspire. This is dedicated in your honor.
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Abstract
A Survey of Clinical Neuropsychologists with Experience in Forensic Contexts: Prevalence, Training, and Jurisdictional Differences in Civil and Criminal Cases
Casey Daniel LaDuke

Despite the rapid growth of the subspecialty known as forensic neuropsychology, little is known about the prevalence of neuropsychologists acting as experts in civil and criminal forensic contexts, the training undertaken by these neuropsychologists, or differences in their practices across civil and criminal cases, legal questions, or jurisdictions. Neuropsychologists with experience in the forensic context were surveyed to address these gaps. The majority of participants reported conducting evaluations in both civil and criminal forensic contexts across a variety of legal issues, while others restricted their practices to civil cases alone. Participants appeared to have specialized early in neuropsychology through formal graduate and continued post-graduate training, while their training in forensic concepts appears to have occurred primarily through post-graduate continuing education and supervision. No jurisdictional differences were found between neuropsychologists conducting evaluations in civil cases, though participants were more likely to practice in criminal cases in Frye states. Challenges to the admissibility appeared infrequent, and were more likely to be partial challenges instead of challenging participants’ qualifications as experts overall. Continued investigation of neuropsychologists practicing in civil and criminal contexts will remain important as the subspecialty of forensic neuropsychology continues to develop. This is especially relevant given the growing role of neuropsychology in better informing decision-making in the United States legal system.
Chapter 1: Introduction

The field of clinical neuropsychology has grown significantly over the past few decades into a highly developed area of practice and research. Particularly dramatic has been the increasingly prevalent application of neuropsychological expertise to legal contexts, a subspecialty known as forensic neuropsychology (Heilbronner, 2004). This rapid development has not been uniform, however, in that the presence of neuropsychological expertise in civil court proceedings appears to have increased rapidly throughout the last few decades of the 20th century, whereas its application in criminal proceedings only appears to have caught up within the last 10 years.

This is not surprising given the different purviews of these two forensic contexts. Civil courts preside over cases involving (among other legal issues) disability determination, worker’s compensation, and personal injury litigation, which often rely on connecting the alleged functional disability of the plaintiff with the presence of a readily definable neurological insult. Given its particular focus on brain-behavior relationships, neuropsychology could readily be applied to providing insight into these sorts of connections, and may have been more quickly appreciated by attorneys and decision-makers as a means to better answer these legal questions. Criminal courts are concerned with, among other legal issues, the concepts of competency, mental state at the time of the offense, sentencing, and the prediction of future dangerousness, which are legal concepts that lend themselves less readily to clearly defined cognitive dysfunctions. Instead, attorneys have to rely on case law and operationalizations of state and federal statues into cognitive and functional components, which are then targeted by neuropsychologists in their assessments of defendants.
The application of clinical neuropsychology to forensic contexts has also been hindered by the lack of clearly defined training and certification processes, resulting in a lack of knowledge as to who exactly is an expert in the field. This could have a direct impact on the admissibility of neuropsychological evidence, although it remains unclear to what extent forensic neuropsychologists are being challenged across legal jurisdictions.

This study attempts to account for these gaps in knowledge, while also tracking the emergence of the subspecialty of forensic neuropsychology. The educational and experiential backgrounds of those neuropsychologists choosing to working within civil and criminal forensic contexts were investigated, with the ultimate goal of understanding what types of mental health professionals are acting as experts in the field. Additionally, jurisdictional differences in challenges to the admissibility of this evidence were compared, and possible explanations of any differences are provided.

1.1 Forensic Neuropsychology

Forensic neuropsychology is a relatively new and rapidly developing subspecialty of clinical neuropsychology that applies the concepts and practices of neuropsychology to assist in legal decision-making. Due to its dramatic evolution over the past few decades, forensic neuropsychology has been termed the most rapidly developing subspecialty within modern clinical neuropsychology by some of the field’s leading experts (Heilbronner, 2004; Sweet, King, Malina, Bergman, & Simmons, 2002). Despite its place within the broader field of clinical neuropsychology, it is important to recognize that significant differences exist between therapeutic and forensic practice, setting forensic neuropsychology apart from its parent field in several important ways. The
practice of forensic neuropsychology is also applicable in both civil and criminal contexts, further complicating the role of clinical neuropsychology in legal proceedings, and possibly explaining its differential development within these two contexts.

1.1.1 Therapeutic versus forensic neuropsychology

According to Heilbrun (2001), mental health assessments in the forensic context differ significantly from those in the therapeutic context. In fact, simply applying the principles of clinical assessments to forensic mental health assessments may produce insufficient or even misleading outcomes; this applies directly to those clinical neuropsychologists choosing to working within a forensic context (Heilbrun et al., 2003). Specifically, whereas the standards used in therapeutic assessment are focused on the diagnosis and treatment of symptoms of mental illness, the purpose of the forensic assessment is primarily to assist the legal decision maker (i.e., the judge or jury) or the client’s attorney. Forensic assessments may be interested in diagnostic and treatment standards, however these are couched within the more specialized function of relating the client’s underlying mental, emotional, and cognitive deficits to the legal question of interest. Forensic neuropsychologists must therefore address both mental health and legal standards during their assessments, both of which are integral to their eventual utility within the forensic context.

In addition to the purpose of the assessment, the relationship between the clinician and the examinee is also significantly different. Whereas in the therapeutic role the relationship is one of helping the client, forensic assessments require an objective (or at least quasi-objective) stance toward to the individual being assessed. This highlights the fact that in the therapeutic context the individual patient is the one being served, while in
the forensic context the clinician is aiding a variety of parties, particularly the court, the attorney, and, indirectly, the evaluatee.

Although the sources of data utilized throughout the assessment are largely shared in the two types of assessment (e.g., self-report, psychological testing, behavioral assessment), forensic assessments must also utilize collateral information based on the observations of others. Throughout therapeutic assessments clients are assumed to be reliable, whereas this assumption is not made in forensic contexts. Neuropsychologists, who typically work with patients with mild to severe cognitive deficits, may be more familiar with utilizing third-party information than other clinical specialties, however this remains an important distinction between their clinical and forensic roles. Evaluatees in forensic contexts may be motivated to perform in certain ways during their assessment, either due to the possibility of large monetary gain or significant loss of liberty, to the extent that many forensic assessments include tests designed to examine the response style of the evaluatee, or to detect malingering, symptom exaggeration, or symptom minimization.

These distinctions, in addition to some basic procedural and practical disparities (e.g., the notification of purpose, the structure and function of the written report, the expectancy of court testimony), represent the most significant differences between assessments in therapeutic and forensic contexts. Clinical neuropsychologists should not assume that having experience with neuropsychological assessments for treatment purposes directly translates into conducting assessments in the forensic context. Working within this specialized field requires appropriate specialized knowledge regarding one’s role within the larger legal system, as well as an understanding of relevant legal
constructs. Without such specialized knowledge, neuropsychological experts choosing to work within the forensic context risk, “ignorance and irrelevance in courtroom testimony, psychiatric or psychological intrusion into essentially legal matters; and insufficiency and incredibility of information provided to the courts” (Grisso, 2003, p. 11). As virtually every clinical neuropsychologist can expect to be called to testify in a forensic setting at some point in their career (Denney & Sullivan, 2008), receiving some basic forensic training may be beneficial to ensure these professionals are able to operate effectively in these contexts. Clinical neuropsychologists, however, “rarely become involved in criminal matters unless they specifically choose to do so” (Denney & Sullivan, 2008, p. xi), highlighting the important distinctions between civil and criminal forensic contexts and the professionals who choose to function within them.

1.1.2 Civil versus criminal forensic contexts

The United States judicial system can generally be divided into two major types of proceedings: civil and criminal. The civil process usually involves a dispute between parties (generally citizens, but often business entities) for which the court provides a resolution. Such cases normally involve monetary or other compensations, wherein the plaintiff has the burden of proof to provide a version of the facts that is more likely than the defendant’s (i.e., preponderance of the evidence). Mental health professionals may be retained in such cases to provide expert testimony related to personal injury claims, where it is purported that some negligence on the part of the defendant led to not only physical injury, but mental injury and suffering as well (Melton, Petrila, Poythress, & Slobogin, 2007). Additionally, mental health professionals may be asked to provide opinions in custody disputes and with competency issues, including testamentary
competency, competency to make personal or business decisions in guardianship cases, and contractual competency.

In criminal cases it is the state or federal government that is charging an individual for an act punishable by significant fine, loss of personal freedom, or possibly death. Due to the increased seriousness of these charges and the punishments involved, the prosecution must prove each element of the crime “beyond a reasonable doubt,” a much higher burden of proof. Mental health professionals may be asked to provide clinical opinions regarding a variety of legal issues throughout the criminal process. This can include several types of competencies, such as competency to plead guilty, stand trial, confess, waive the right of an attorney, and testify. Additionally, mental health professionals may be involved in determining the defendant’s mental state at the time of the offense both before conviction (also known as insanity, or criminal responsibility) or after conviction (culpability). Mental health professionals may also be involved in mitigation after a conviction of guilt, typically in regard to the defendant’s risk of future dangerousness and amenability to treatment. Clinicians may also be asked to provide testimony relating to the defendant’s competency to be sentenced and, in states with capital sentencing procedures, competency to be executed.

The role that mental health professionals play in the civil and criminal process remains somewhat controversial, resulting in a relatively inconsistent application of this evidence throughout the United States judicial system. Due to its relatively recent emergence as a subspecialty, the admissibility of neuropsychological evidence in these proceedings is especially marked by debate and irregular application across civil and criminal cases.
1.1.3 The development of forensic neuropsychological evidence

The roots of the modern era of neuropsychological evidence extend back to the 1980s, when the development of clinical neuropsychology as a whole was also gaining significant momentum. This development was largely affected by the 1962 decision in Jenkins v. United States. In Jenkins, the United States Court of Appeals for the District of Columbia Circuit reversed a lower court finding that had disregarded the testimony of the defense psychologist based on the argument that psychologists are not competent to give a medical opinion regarding causal relationships between mental disease and an alleged criminal act (see p. 15, for a further description of this case). This decision led to a period in which neuropsychologists were increasingly being called as experts in legal proceedings, increasing the recognition and understanding of neuropsychological evidence by the courts (Satz, 1988). At the same time, however, this liberal application of the decision created some confusion due to the variety of “experts” that were coming forward, and the variable methods they employed in their practice. This included, for example, clinical psychologists with limited experience with neurological issues, as well as cognitive and physiological scientists with limited experience with psychological issues.

This assessment of the field in the 1980s is largely based on neuropsychology as it applied to civil proceedings. This is not surprising, given the fact that the application of neuropsychological evidence in forensic settings had to that point developed “almost exclusively in the realm of the civil law” (Martell, 1992, p. 313), largely in relation to disability determination, worker’s compensation, and personal injury cases. Further, there had been little scholarship focused on the application of neuropsychology to
criminal law, and what work had been done either lacked sufficient detail or dismissed criminal applications as too infrequent to warrant serious attention.

Although developments in neuroimaging were also progressing rapidly during this time, Martell (1992) asserted that neuropsychological assessment was “equivalent or superior” (p. 316) to these more traditional diagnostic techniques in detecting both the presence and general localization of brain damage. Additionally, he argued that the unique capability of neuropsychology to relate structural and functional abnormalities to behavioral changes in legal settings clearly set it apart as a field of significant utility in legal cases, including criminal responsibility and various criminal competencies like competency to waive Miranda rights, confess, stand trial (especially opinions regarding rehabilitation after a finding of incompetence), plead guilty, and be sentenced. He even suggested that this type of evidence might be useful in the prediction of dangerousness in capital cases and in determining competency to be executed, clearly demonstrating his confidence in the developing application of neuropsychology to the criminal forensic context.

Despite this confidence, the inclusion of neuropsychological assessment in criminal forensic cases would wait almost another decade before beginning to gain wider acceptance in the field. This was made evident in Borum and Grisso’s (1995) survey of forensic psychologists and psychiatrists regarding evaluations of competency to stand trial and criminal responsibility, which found that these professionals did not believe testing in general to be necessary for these clinical forensic evaluations. Specifically, less than one-quarter of those surveyed rated testing as essential in either competency or criminal responsibility assessments, and the majority (56%) reported never using
neuropsychological assessments in criminal responsibility. Regarding competency to stand trial, even though 46% reported never using neuropsychological assessment, fully 36% reported that they did so “almost always” (approximately 81-100% of the time). Along with the more general finding that the majority of the responding professionals reported relying on psychological test data in only about 40% of their evaluations, these findings suggest that forensic psychologists and psychiatrists regard neuropsychological assessments as tools only to be used when appropriate.

More specific to neuropsychological assessment, a study by Sweet, Moberg, and Suchy (2000) suggested that interest in neuropsychological evidence in both civil and criminal forensic contexts increased in the 1990s, though not at the same rate. In a survey of practices and beliefs, these authors found that the number of hours per week committed to forensic activities increased for both general and Diplomate-level neuropsychologists between 1994 and 1999: Diplomate-level neuropsychologists increased their commitment to forensic issues from 5 hours per week in 1994 to 6 hours in 1999, and general neuropsychologists doubled their commitment from 2 hours per week in 1994 to 4 hours in 1999. Though seemingly small, these represent statistically significant increases in the amount of time neuropsychologists were committing to forensic activities. Interestingly, it was also noted that clients referred by attorneys remained consistently high between 1989 and 1999, constituting the third leading source of referrals overall for neuropsychologists at that time.

This increased interest was also seen in the academic activities of clinical neuropsychologists during the 1990s, as was pointed out in a survey of conference presentations and journal articles related to forensic neuropsychology during the 1990s.
(Sweet, King, Malina, Bergman, & Simmons, 2002). Overall, the prevalence of forensically related presentations at neuropsychological conferences increased from 1% in 1990 to 10% in 2000, with high of 11% in 1998. This was more or less mirrored by the prevalence of forensically related articles in neuropsychological journals, which increased from 4% in 1990 to 14% in 2000, with high of 16% in 1997. In both of these instances the majority of academic work dealt with malingering, which seemed to drive the increased attention in both conference presentations and publications. In line with previous findings, the larger proportion of these articles concerned the application of neuropsychology in civil forensic contexts (34%) as compared to criminal contexts (4%) or both (9%), although the majority of these articles was not able to be classified as either civil or criminal (53%).

Also around this time, Mittenberg, Patton, Canyock, and Condit (2002) conducted a survey of board-certified clinical neuropsychologists focused on malingering, with 131 responding neuropsychologists reporting a total annual caseload of 33,531 cases. Again, a large proportion of those cases forensic in nature were related to civil matters, including personal injury litigation (16%) and disability or worker’s compensation (11%), whereas criminal litigation was involved in only 4% of the total annual caseload. A small percentage, these results may nonetheless reveal that within a single year 131 neuropsychologists carried over 1,341 cases related to criminal litigation, though more specific information regarding these cases was not provided. Additionally, the authors did not state the year from which these cases were drawn, though one can assume that these findings are generally representative of clinical neuropsychologists close to the turn of the last century.
This time period was also punctuated by Hom (2003), who used his Presidential Address to the National Academy of Neuropsychology to question the current standing of forensic neuropsychology as a subspecialty. While noting the rapid evolution of the field, he pointed out that there were at that time no formal training programs, licensure requirements, or professional organizations specifically related to forensic neuropsychology, and very few specialty textbooks and journals. Additionally, he noted that there was no formal process to become a forensic neuropsychologist. Hom (2003) also supplied a succinct overview of a series of surveys of the field, highlighting that practicing psychologists were spending more time in forensic neuropsychological activities and that forensic work was one of the most common sources of supplemental income for professionals in the field. Regarding referral sources, he reiterated the high occurrence of attorney referrals from Sweet et al. (2000), but went further to say that referrals from attorneys ranked equally in frequency with referrals from neurosurgeons, psychologists, general physicians, and rehabilitative specialists; attorneys were the top referral source among private practitioners in the field of forensic neuropsychology, and legal entities in general accounted for almost one-third of all referrals.

Despite this status report of the field, a follow-up survey of psychological test use patterns among forensic psychologists around that same time revealed that neuropsychological assessments were still largely unused by this population (Archer, Buffington-Vollum, Stredny, & Handel, 2006). In most cases responding professionals reported never using neuropsychological assessments, with smaller groups reporting “infrequent” or “occasional” use. Taken together, these studies of clinical and academic

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1 The American Board of Professional Neuropsychology has since added “forensic neuropsychology” to its certifying practice (Heilbronner, 2004).
activities suggest that general practitioners in the forensic contexts infrequently used neuropsychological assessments, and that neuropsychologists who applied their clinical skills to legal proceedings tended to do so in civil rather than criminal cases.

Challenging these assumptions, Kaufmann (2007, as reported in Denney & Sullivan, 2008) took a different approach and surveyed case law relating to neuropsychological evidence. This survey revealed some 3,294 cases spanning almost 70 years, with nearly three-quarters (74%) of these cases being decided within the previous decade alone. More surprising, the majority (54%) of these cases were in criminal courts, with 77% of these cases having been adjudicated in the previous decade. This research suggests that, whereas the application of neuropsychology within forensic contexts may have previously occurred primarily in civil courts, near the turn of the century there was a dramatic increase in the use of neuropsychological expertise in criminal cases.

Previous research in this area is sparse, and what research does exist is drawn from such a wide variety of sources (i.e., conference presentations and academic articles, surveys of neuropsychologists, case law) that trends are hard to verify. Additionally, the lack of reported dates and difficulty in locating source material further support the unreliability of these assumptions. Finally, around 5 years have passed since data have been collected on this population, leaving many questions unanswered regarding the current use of neuropsychological expertise in the criminal forensic context.

1.1.4 Forensic neuropsychology as a developing subspecialty

The current state of forensic neuropsychology therefore appears to be one of transition. Although forensic neuropsychology has enjoyed decades of pronounced and significant development, there are still many things that must happen before its status as a
distinct subspecialty can be secured. This has been recognized by a variety of experts in the field (Denney & Sullivan, 2008; Denney & Wynkoop, 2000; Heilbronner, 2004; Hom, 2003), who applaud the progress that has been made but temper these accolades with the cautious warning that more empirical and clinical work must be done.

Heilbronner (2004) provides an appropriate review of the state of forensic neuropsychology with a particular focus on what must be done to advance the practice to become a more established specialty area. Following the framework emphasized by Otto and Heilbrun (2002), he reviewed and reported on the measures that signify progress and development of a field, including professional organizations, publications, practice standards, and certification and credentialing procedures. Despite increased interest and the existence of a number of both neuropsychological and forensic psychological organizations, he noted that there are no current professional organizations devoted exclusively to forensic neuropsychology. Regarding publications, Sweet and colleagues (2002) were cited as support for an increase in peer-reviewed articles related to forensic psychology, and Journal of Forensic Neuropsychology and special sections and issues of other leading publications in the field devoted to forensic issues (e.g., “Forensic Applications” in The Clinical Neuropsychologist, special issues of The Journal of Head Trauma Rehabilitation) were highlighted as evidence of the field’s development. Published books related to forensic neuropsychology were also noted, including Forensic Neuropsychology: Fundamentals in Practice (Sweet, 1999) and three recent book chapters (Bush, 2003; Heilbronner & Pliskin, 2002; Sweet, Grote, & van Gorp, 2002).²

² Since this status report was written there have been additional books published in the field (see, e.g., Hall, 2008; Heilbronner, 2005), including those specifically focused on the role of forensic neuropsychology in criminal forensic settings (see, e.g., Denney & Sullivan, 2008).
Regarding practice standards, Heilbronner (2004) argued that forensic neuropsychology is still a long way from establishing standards of practice, given that the field has yet to reach a consensus on practice guidelines in general. Recent surveys clearly showed the variability among neuropsychologists regarding forensic practices and beliefs (Sweet et al., 2000; Sweet, Peck, Abramowitz, & Etzweiler, 2002, 2003), but also represented important first steps in establishing what guidelines the field may follow in the future. He also pointed to examples from forensic psychology that may be used to guide forensic neuropsychology in this regard, including the *Specialty Guidelines for Forensic Psychology* (Committee on Ethical Guidelines for Forensic Psychologists, 1991) and *APA Practice Guidelines* concerning forensically relevant cases (American Psychological Association Committee on Professional Practice and Standards, 1998). It has also been shown that the principles guiding the field of forensic mental health assessment are applicable to forensic neuropsychological reports (Heilbrun et al., 2003), which could also be used as a guide for neuropsychologists hoping to develop guidelines and practice standards for the field.

Finally, Heilbronner (2004) highlighted certification and recognition of advanced practice as two of the most contentious aspects of professional psychology as a whole, with clinical neuropsychology being no exception. Clinical neuropsychology was proclaimed as being one of the foremost specialties in terms of recognition of advanced competence, but it was also noted that it lags behind forensic psychology in terms of certification; there were very few doctoral-level training programs in forensic neuropsychology, and no boards in forensic neuropsychology requiring rigorous examination of credentials and experience (the lack of practice guidelines has allowed so-
called “vanity boards” to purport awarding Diplomate-level titles without sufficient credential review). Whether the field requires a separate board to award Diplomate status in forensic neuropsychology is currently under debate, and it was suggested that those seeking to provide the clearest evidence of the expertise required to practice forensic neuropsychology to pursue board certification, most likely in clinical neuropsychology, and then continue to receive advanced training and supervision in forensic contexts.

Despite these suggestions, it is currently unclear what level of training neuropsychologists practicing within forensic contexts have undertaken. As the application of neuropsychological evidence to forensic cases requires a particularly specialized set of skills (Heilbrun, 2001; Heilbronner, 2004), the type and extent of training completed by these professionals may have a significant impact on the admissibility of the evidence they provide, and therefore the role of neuropsychology in the court system overall.

1.2 Admissibility of Neuropsychological Evidence

The role of psychologists as experts in legal decision-making was first recognized in Jenkins v. United States (1962), which addressed the expertise of three clinical psychologists making claims regarding mental defect. In the case, the trial court instructed the jury to disregard the testimony of the psychologists based on the fact that they were “not competent to give a medical opinion as to a mental disease or defect” (p. 643). The defendant appealed, and in a landmark decision the United States Court of Appeals for the District of Columbia Circuit reversed the trial court’s decision, stating, “some psychologists are qualified to render expert testimony” (p. 644). In addition, the court laid out a two-part test of expertise: whether the subject was related to some
science, profession, business or occupation beyond the scope of the average person; and, if the witness has “skill, knowledge or experience in that field” (p. 643). Therefore, the Jenkins decision is typically cited as recognizing the expert opinions of clinical psychologists regarding mental disease or defect. More specific to neuropsychological evidence, in Simmons v. Mullins (1975) a Pennsylvania appellate court decided that a group of psychologists were capable of testifying regarding organic brain injury, stating that, “[i]t is not essential that an expert witness be a medical practitioner to testify on organic problems” (p. 898), and that rejecting the psychologists’ testimony regarding organic brain injury, “would be to ignore present medical and psychological practice” (p. 899). It is important to note, however, that this decision is only binding in cases heard within the Commonwealth of Pennsylvania.

Since these general findings, the testimony of psychologists regarding organic brain injury based on neuropsychological assessments has been frequently challenged. As noted in Kaufmann (2008), whereas a majority of cases have held that neuropsychologists are qualified to render such opinions, a minority of courts still restrict or disallow them from offering testimony regarding causation, or find that neuropsychologists offering opinions about physical brain damage are operating beyond the scope of accepted psychological practice (see Wade, DeMatteo, and Hart, 2004, for an argument supporting of the admissibility of neuropsychological evidence). These differences may be related to the jurisdiction in which these cases are tried, with states having generally accepted one of two definitions of what constitutes an expert witness.
1.2.1 *Frye v. United States* (1923)

The first statute defining expert witnesses, known as the *Frye* standard, is based on the general acceptance principle laid out in *Frye v. United States* (1923) by the United States District Court for the District of Columbia. This case concerned an appeal made by the defendant regarding the denial of expert testimony based on a systolic blood pressure deception test. The appellate court affirmed the trial court finding, stating that the deception test had not gained, “standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony” (p. 1014). This set forth a standard of admissibility typically referred to as the general acceptance test; that is, testimony can only be admissible when it has gained general acceptance in the relevant scientific community. This general acceptance is determined by the judge in the case, who can decide whether the witness or their testimony meet the qualifications as expert and can therefore be offered as evidence in the case. The *Frye* standard alone defined the admissibility of expert testimony until the early 1990s, when it was decided in *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993) that the Federal Rules of Evidence had superseded it.

1.2.2 *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993) and the Federal Rules of Evidence

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993), a group of infants and their guardians sued Merrell Dow over birth defects allegedly caused by Bendectin, a drug manufactured by the company to treat morning sickness in pregnant women. Citing *Frye*, the trial court found in favor of Merrell Dow, specifically noting the “prevailing school of thought” (p. 572) regarding Bendectin and holding epidemiological studies as
the most reliable evidence of causation in the field, thereby disallowing the testimony of experts for the defendants based on a lack of methodological general acceptance. The plaintiffs’ appeal reached the United States Supreme Court, which found that in the federal court system the Frye standard had been superseded by FRE 702, thus requiring federal courts to admit any scientific, technical, or other specialized knowledge that may assist the trier of fact in a given case, leaving it up to the district court judge to evaluate and decide on the admissibility of expert testimony. To assist judges in their decisions regarding the admissibility of expert testimony under FRE 702, the Supreme Court included in Daubert the following criteria by which evidence is to be evaluated: (1) whether the knowledge or technique can be tested and is falsifiable; (2) the known or potential error rate; (3) whether the theory or technique has been subjected to peer review or publication; and, (4) whether the expert’s methods and reasoning enjoy general acceptance in the relevant scientific community. Thus the Daubert standard retains the criteria of peer review and general acceptance from the earlier Frye standard, but also includes additional criteria focused on the testimony’s scientific validity. While generally considered more conservative than the Frye standard, the Daubert standard was nevertheless intended to guide a “flexible” inquiry, preventing testimony being barred from court hearings solely because it hasn’t received general acceptance in the field.

Further clarifying the Daubert decision, General Electric Co. v. Joiner (1997), reaffirmed and strengthened the role of district court judges as the “gatekeepers” for deciding expert admission, while Kumho Tire Co. v. Carmichael (1999) indicated that the Daubert decision and Rule 702 applied to all expert testimony (not just scientific).
Together the “Daubert trilogy” led to FRE 702 being amended in 2002 to its current state, which reads:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

FRE 702 is the current rule governing the admissibility of expert testimony in federal courts and, although states are not required to adopt the Daubert standard, as of this writing a majority (30 states) have done so (Kaufman, 2007; McLaughlin, Weinstein, & Berger, 1999). The rest have either rejected Daubert based on a variety of grounds (13 states and the District of Columbia) or have not addressed it (7 states) (see Table 1, p. 20, for a complete listing of these states).

1.2.3 The admissibility of neuropsychological evidence

Neuropsychologists striving to act as expert witnesses in civil and criminal courts therefore have at least two different sets of admissibility criteria, largely determined by the state in which they practice. As previously stated, a minority of states still follow the standard set out in Frye and broadly hold that any testimony proffered as evidence must be sufficiently established to have gained general acceptance in the particular field to which it belongs. This typically applies to procedures, principles, or techniques presented in the proceedings of the case, with the ultimate determination of whether the criteria are met in accordance with the Frye standard residing with the judge of the case.

The majority of states have adopted the more rigorous and flexible Daubert standard to determine the admissibility of expert testimony, or have deemed it consistent
Table 1: Jurisdictional standards of states regarding the admissibility of evidence*

<table>
<thead>
<tr>
<th>Daubert states</th>
<th>States neither accepting nor rejecting Daubert**</th>
<th>Frye states</th>
<th>States neither accepting nor rejecting Daubert**</th>
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<tbody>
<tr>
<td>States adopting Daubert or deeming it consistent</td>
<td>States neither accepting nor rejecting Daubert**</td>
<td>States rejecting Daubert</td>
<td>States neither accepting nor rejecting Daubert**</td>
</tr>
<tr>
<td>Alaska</td>
<td>New Hampshire</td>
<td>Arizona</td>
<td>Alabama</td>
</tr>
<tr>
<td>Arkansas</td>
<td>New Hampshire</td>
<td>California</td>
<td>Hawaii</td>
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<td>Connecticut</td>
<td>New Jersey</td>
<td>Colorado</td>
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<tr>
<td>Delaware</td>
<td>New Mexico</td>
<td>District of Columbia</td>
<td>Minnesota</td>
</tr>
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<td>Georgia</td>
<td>Ohio</td>
<td>Florida</td>
<td>Missouri</td>
</tr>
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<td>Idaho</td>
<td>Oklahoma</td>
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<td>Rhode Island</td>
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<td>Kentucky</td>
<td>South Dakota</td>
<td>New York</td>
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</tr>
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<td>Louisiana</td>
<td>Tennessee</td>
<td>North Dakota</td>
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<td>Pennsylvania</td>
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<td>Utah</td>
<td>South Carolina</td>
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<td>West Virginia</td>
<td>Wisconsin</td>
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<td>Montana</td>
<td>Wyoming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* NOTE: Adapted from Kaufman (2006). ** These states were classified based on the similarity of their statues to those delineated in the Daubert trilogy or by Frye v. United States (1923).

with their state’s laws. In most cases these states have adopted analogues of the steps laid out by the Federal Rules of Evidence (FRE 104, 401, 402, 403), in which trial judges follow the same general format to determine the expert status of a witness. First, the trial judge carries out a “104 inquiry,” permitting pretrial determinations of expert witnesses focused on their reasoning and methodology. Witnesses who satisfy this inquiry must then cross the “401/403 hurdle,” which is focused on ensuring that the testimony is relevant to the case and that its probative value is not significantly outweighed by any
unfair prejudice. Finally, the trial judge applies standards similar to those described in FRE 702 to the testimony of the witness, allowing the witness to testify as an expert only if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Despite arguments that neuropsychologists should be considered experts by civil and criminal courts in *Frye* and *Daubert* jurisdictions (Wade et al., 2004), throughout the United States judicial system these standards have been somewhat unevenly applied (Melton et al., 2007; Reed, 1999). Though there is some evidence to suggest that experts testifying in civil cases have generally been more readily excluded under *Daubert* (Dixon & Gill, 2002), the same cannot be said for expert testimony in criminal court cases (Cheng & Yoon, 2005; Groscup, Penrod, Studebaker, Huss, & O’Neil, 2002). In a discussion of general trends related to the effects of *Daubert* on the admissibility of expert testimony in criminal cases, Groscup et al. (2002) suggested that when an expert’s testimony is identified as scientific in nature they must meet the *Daubert* factors for their testimony to be considered admissible; on the other hand, the admissibility of testimony identified as medical-mental health in nature appeared to be more related to the expert’s education, experience, and specialty and board certification.

This has serious implications for clinical neuropsychologist choosing to work within the criminal forensic context. These professionals are trained within the scientist-practitioner model, and must therefore adhere to the principles outlined in *Daubert* to be classified by experts; the concepts with which they work are also within the medical-mental health realm, however, suggesting that their training and certifications may also
be influential in this decision. Little work has been done investigating the prevalence of challenges to admissibility for neuropsychological evidence in either civil or criminal contexts, however, representing a large limitation in previous research of the field.
Chapter 2: Purpose and Rationale

The purpose of the current study was to continue the work of previous surveys in tracking the development of the field of forensic neuropsychology. Although it has been suggested that within the last decade the prevalence of neuropsychological evidence being applied to criminal forensic contexts has caught up to or surpassed its use in civil forensic contexts, this purported trend is based on such a variety of different sources that it is unreliable at best. Additionally, there have been no surveys of the field for almost 5 years, leaving many of these questions regarding trends unanswered.

The current study also focused on the academic and experiential training completed by those neuropsychologists choosing to work in civil and criminal forensic contexts, including their training in both neuropsychology and forensic psychology. Professionals working within civil and criminal forensic contexts were also compared against each other to discover any differences in specialization, as this may have important implications for neuropsychologists choosing to work in either context.

Finally, the current study investigated jurisdictional differences in challenges to admissibility for those experts choosing to practice within civil and criminal forensic contexts. As the field of forensic neuropsychology is still developing, these findings may better define the potential roles of neuropsychologists in forensic proceedings across the United States.

The primary hypothesis of this study concerned the prevalence of neuropsychologists reporting experience in the civil and criminal forensic context, specifically:
• Hypothesis 1: Significantly more neuropsychologists will report having experience in both the civil and criminal forensic context since 2005, followed by the civil context alone, and the criminal forensic context alone.

Regarding the academic and experiential training of neuropsychologists with experience in forensic contexts, the hypotheses were:

• Hypothesis 2: Neuropsychologists with experience in civil and criminal forensic contexts will report having significantly more specialized clinical neuropsychology training than forensic training.

• Hypothesis 3: Neuropsychologists reporting experience in the criminal forensic context will have significantly more specialized forensic training than those reporting experience in the civil forensic context.

Regarding jurisdictional differences for neuropsychologists with experience in forensic contexts, the hypotheses were:

• Hypothesis 4: Neuropsychologists with experience in the civil context only will report a significantly higher prevalence of acting as experts in these cases in Frye states than in Daubert states.

• Hypothesis 5: Neuropsychologists with experience in the criminal context only will report a significantly higher prevalence of acting as experts in these cases in Frye states than in Daubert states.

• Hypothesis 6: Neuropsychologists with experience in both civil and criminal contexts will report a significantly higher prevalence of acting as experts in these cases in Frye states than in Daubert states.
Finally, regarding challenges to admissibility for neuropsychologists with experience in forensic contexts, the hypotheses were:

- **Hypothesis 7**: Neuropsychologists with experience in the civil forensic context only will report significant differences in the prevalence of challenges to admissibility between *Daubert* and *Frye* states.

- **Hypothesis 8**: Neuropsychologists with experience in the criminal forensic context only will report significant differences in the prevalence of challenges to admissibility between *Daubert* and *Frye* states.

- **Hypothesis 9**: Neuropsychologists with experience in both civil and criminal contexts will report significant differences in the prevalence of challenges to admissibility between *Daubert* and *Frye* states.
Chapter 3: Method

3.1 Participants

Participants included 169 individuals who are members of the National Academy of Neuropsychology (NAN; \( n = 30 \), or 18\%), the American Academy of Clinical Neuropsychology (AACN; \( n = 46 \), or 27\%), or both (\( n = 93 \), or 55\%). Participants consisted of males and females (including 7 non-responders, or 4\%) who ranged in age between 31 and 71 years (\( M_{\text{age}} = 51.17, SD = 9.57 \)) (see Table 2, p. 27). Participants were largely White or Caucasian, Hispanic, Latino, or Spanish (of any race), Asian, or other, and included 5 non-responders (3\%). As with other demographic items, individuals could classify themselves into multiple groups. The majority of participants who reported non-Caucasian race/ethnicity also classified themselves as Caucasian (i.e., 3 of 4 participants for Hispanic, Latino, or Spanish origin, and 1 of 1 participants for Asian). Participants reported practicing in a total of 42 states and the District of Columbia, including across a variety areas and settings. In addition to medical, private practice, and academic settings, participants reported working in correctional institutions, community mental health settings, state hospitals, and a variety of other clinical settings. Three participants did not respond to either the area or the setting item (2\%).

To obtain a sample of neuropsychologists with significant experience in the forensic context, participants were removed from further analyses based on the following eligibility requirements. Of the 169 total respondents to the survey, individuals were removed if they had less than 5 years of professional experience\(^3\) (\( n = 0 \)); were not licensed to practice psychology (\( n = 0 \)); reported working either exclusively or mostly

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\(^3\) This is the length of time typically required to be eligible for certification in both neuropsychological (Hannay et al., 1998) and forensic psychology (Borum & Grisso, 1995).
Table 2: Demographic information for all participants

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Prevalence (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>100 (59)</td>
</tr>
<tr>
<td>Female</td>
<td>62 (37)</td>
</tr>
<tr>
<td>Race/Ethnicity**</td>
<td></td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>161 (95)</td>
</tr>
<tr>
<td>Hispanic, Latino, or Spanish origin (of any race)</td>
<td>4 (2)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (&lt;1)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Area of practice**</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>109 (64)</td>
</tr>
<tr>
<td>Suburban</td>
<td>67 (40)</td>
</tr>
<tr>
<td>Rural</td>
<td>24 (14)</td>
</tr>
<tr>
<td>Setting of practice**</td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>88 (52)</td>
</tr>
<tr>
<td>Private practice</td>
<td>81 (48)</td>
</tr>
<tr>
<td>Academic</td>
<td>35 (21)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (8)</td>
</tr>
</tbody>
</table>

* NOTE: Based on N = 169. ** Individuals could be classified into multiple groups.

with children (n = 22); reported not having any experience conducting forensic mental health assessments since 2005 (n = 21); or reported having less than 5% of their caseload consisting of forensic clients (n = 57). Individuals were also removed who did not

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4 This timeframe was rooted in two main bases. Around 2005 is when the last data were collected regarding the role of neuropsychology in the criminal forensic context (Kaufmann, 2007). Additionally, 2005 is when Georgia adopted Daubert as its standard for the admissibility of evidence (Kaufman, 2007), which is the most recent state that has done so. As admissibility was one of the variables being considered in this project, it was important that data only be collected after this date to avoid inconsistencies in participants’ responses. There have been no fundamental shifts in the specialization of forensic psychology or clinical neuropsychology during this time. The ethical and specialty guidelines that define forensic psychological practice (American Psychological Association, 2002; Committee on Ethical Guidelines for Forensic Psychologists, 1991), as well as the guidelines directing clinical neuropsychological specialization (see, e.g., APA, 2002, and Hannay et al., 1998, regarding the Houston Conference) were both established prior to 2005 and included broad representation from their respective fields.
provide sufficient information \((n = 5)\) or who made it past these eligibility criteria but terminated the survey before providing complete data \((n = 5)\).

Of the final group of 59 participants who met all inclusion criteria, 12 were members of NAN (20%), 12 were members of AACN (20%), and 35 were members of both (59%). Participants in this group included men and women (including 1 non-respondent, or 1%) who ranged in age from 33 to 71 years \((M_{age} = 53.53, SD = 9.41)\) (see Table 3, p. 29). Participants were predominantly White or Caucasian, either solely \((n = 54, or 92\%)\) or in conjunction with Hispanic, Latino, or Spanish origin \((n = 3, or 5\%)\), while 2 responded other (3%). Participants reported practicing in 34 states and the District of Columbia, across a variety of areas and settings. In addition to medical, private practice, and academic settings, participants reported working in correctional institutions, community mental health settings, and state hospitals. Unless otherwise noted, all further analyses were run using this group of 59 participants.

### 3.2 Procedure

All data were collected between February 2011 and March 2011 using an electronic survey developed through PsychData, a reputable online survey tool (see Appendix A for the PsychData Security Statement). The electronic survey was developed in a way that ensured participants’ anonymity, and each participant only answered questions that were relevant to his or her own reported experience.

Contact information for participants was obtained from membership databases managed by the National Academy of Neuropsychology (NAN) and the American Academy of Clinical Neuropsychology (AACN). These organizations are largely
Table 3: Demographic information of the sample

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Prevalence (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34 (58)</td>
</tr>
<tr>
<td>Female</td>
<td>24 (41)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>57 (97)</td>
</tr>
<tr>
<td>Hispanic, Latino, or Spanish origin (of any race)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (3)</td>
</tr>
<tr>
<td><strong>Area of practice</strong></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>37 (63)</td>
</tr>
<tr>
<td>Suburban</td>
<td>28 (47)</td>
</tr>
<tr>
<td>Rural</td>
<td>11 (19)</td>
</tr>
<tr>
<td><strong>Setting of practice</strong></td>
<td></td>
</tr>
<tr>
<td>Private practice</td>
<td>37 (63)</td>
</tr>
<tr>
<td>Medical</td>
<td>26 (44)</td>
</tr>
<tr>
<td>Academic</td>
<td>13 (22)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (10)</td>
</tr>
</tbody>
</table>

*NOTE: Based on $N = 59$. **Individuals could be classified into multiple groups.

considered to be the best established in the field of neuropsychology (Heilbronner, 2004), and were therefore thought to yield the highest number of eligible participants. Invitations to complete the survey were sent to the members of these organizations in two ways. First, a list of physical mailing addresses of Professional-level members of the National Academy of Neuropsychology (NAN) was obtained from the membership database managed by the NAN Board of Directors. Professional members of NAN are those who (a) have completed academic coursework and training in the assessment or remediation of neuropsychological conditions; (b) hold a doctoral degree from an accredited university, either in psychology or a closely related field; and (c) have worked
in settings where such knowledge is applied for a minimum of 3 years (2 of which must be post-doctoral). At the time of the study there were approximately 1,553 Professional members of NAN. The NAN Board of Directors supplied the membership information in electronic format (Microsoft Excel) for a fee ($0.12 per member), in accordance with their research solicitation policies. From this list of 1,553 physical mailing addresses, 500 randomly selected Professional NAN members were directly mailed an invitation to participate in the research study. All invitations that were returned as undeliverable for any reason were replaced by another randomly selected address from the remaining 1,053 Professional NAN members on the list. Therefore, a total of 500 Professional NAN members received an invitation to participate in this research study. This invitation included information about the research study, the investigators, and consent procedures, as well as a link and directions to access the electronic survey (see Appendix B, p. 68).

Second, an invitation to participate in the survey was sent directly to the members of the American Academy of Clinical Neuropsychology (AACN) via electronic mailing addresses supplied by AACN officials. At the time of the study there were approximately 672 AACN members, all of whom received an invitation to participate. This electronic invitation also included information about the research study, the investigators, and consent procedures, as well as a link and directions to access the electronic survey (see Appendix B, p. 68).

The electronic survey was broken into two major sections (see Appendix C, p. 69, for the complete survey). The first section was a short demographic questionnaire completed by all participants. Items included age, gender, ethnicity, state in which they practice, and whether they practice predominantly in an urban, suburban, or rural area.
Participants were then asked about their neuropsychological training (i.e., graduate degree, pre-doctoral internship, post-doctoral training, board certification), and if they were licensed in clinical psychology. Finally, participants were asked how much of their professional caseload had consisted of forensic clients since 2005. Those respondents with at least 5 years of clinical experience, and who indicated significant experience (greater than 5% of their caseload) in the forensic context continued to the next section of the survey.

The next section consisted of items designed to gather information from those participants who had significant experience with forensic neuropsychology since 2005. Participants were asked to report on their level of forensic training, including continuing education, graduate training, graduate degree, pre-doctoral internship, post-doctoral training, and board certification, as well as how many years of clinical forensic experience they had. Participants then separately indicated the amount of experience they had in civil and criminal forensic contexts since 2005, including to what degree they have experience with certain types of cases in these contexts. Finally, participants responded to an item regarding their knowledge of whether their involvement in cases had been challenged, which if answered in the affirmative was followed by additional items regarding the prevalence of challenges to admissibility in cases in which they were involved. Definitions of all relevant terms used were available to participants throughout the survey (see Appendix D, p. 87).
Chapter 4: Results

4.1 Prevalence

Regarding the prevalence of neuropsychologists with experience in the forensic context, 116 of the 169 individuals who completed the survey (69%) reported having forensic experience since 2005. Further, 59 of the 169 individuals who completed the survey (35%) reported having significant experience in the forensic context since 2005 (that is, reported greater than 5% of their clinical caseload devoted to forensic clients). The percentage of these participants’ overall clinical caseload dedicating to forensic clients varied greatly (range: 5-100%, $M_{percent} = 43.50$, $SD = 30.75$), as did their reported years of forensic experience (range = 2-35 years, $M_{years} = 18.24$, $SD = 9.31$).

Participants with significant experience in the forensic context were categorized into groups based on their reported forensic experience within civil and criminal forensic contexts. A large majority of the sample ($n = 58$ of 59, or 98%) reported experience conducting forensic mental health assessments with clients in civil proceedings, while two-thirds of the sample ($n = 39$, or 66%) reported conducting forensic mental health assessments with clients in criminal proceedings. Put another way, 38 participants (64%) reported conducting forensic mental health assessments with clients in both civil and criminal contexts, 20 participants (34%) reported this experience with clients in the civil context only, and 1 participant (2%) reported this experience with clients in the criminal context only.

Participants with experience conducting forensic mental health assessments within civil forensic contexts ($n = 58$, or 98%) varied widely in the amount of their caseload consisting of these clients (range: 1-100%, $M_{percent} = 51.25$, $SD = 37.27$) (see
They reported a variety of clinical experiences conducting forensic mental health assessments across civil forensic contexts, primarily related to personal injury and civil competency evaluations. Conversely, conducting evaluations related to child custody cases was reported less frequently. Participants with experience conducting forensic mental health assessments within criminal contexts \((n = 39, \text{or } 66\%)\) also varied widely in the amount of their caseload consisting of these clients (range: 1-100\%, \(M_{\text{percent}} = 24.39, SD = 31.32\)) (see Table 5, p. 34). These participants reported a variety of clinical experiences across criminal forensic contexts, including criminal competency evaluations, insanity evaluations, and sentencing evaluations.

It was thought that significantly more neuropsychologists would report having experience in both the civil and criminal forensic context since 2005, followed by the civil context alone, and the criminal forensic context alone (Hypothesis 1). To investigate this hypothesis, a goodness-of-fit Chi-square \((\chi^2)\) analysis was run comparing

### Table 4: Prevalence of neuropsychologists with experience in civil forensic contexts

<table>
<thead>
<tr>
<th></th>
<th>Prevalence (%)</th>
<th>(M)</th>
<th>(SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil caseload overall</td>
<td>58 (98)</td>
<td>51.25</td>
<td>37.27</td>
<td>1-100</td>
</tr>
<tr>
<td>Personal injury</td>
<td>56 (97)</td>
<td>55.21</td>
<td>36.06</td>
<td>1-100</td>
</tr>
<tr>
<td>Competency (civil)</td>
<td>42 (71)</td>
<td>12.51</td>
<td>21.05</td>
<td>1-100</td>
</tr>
<tr>
<td>Personal/financial decisions</td>
<td>38 (64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testamentary</td>
<td>34 (58)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consent to treatment</td>
<td>31 (53)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child custody</td>
<td>4 (7)</td>
<td>4.00</td>
<td>2.65</td>
<td>1-6</td>
</tr>
</tbody>
</table>

*NOTE: Based on \(N = 59\).
Table 5: Prevalence of neuropsychologists with experience in criminal forensic contexts

<table>
<thead>
<tr>
<th></th>
<th>Prevalence (%)</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal caseload overall</td>
<td>39 (66)</td>
<td>24.39</td>
<td>31.32</td>
<td>1-100</td>
</tr>
<tr>
<td>Competency (criminal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand trial</td>
<td>25 (42)</td>
<td>37.37</td>
<td>38.45</td>
<td>1-100</td>
</tr>
<tr>
<td>Testify</td>
<td>13 (22)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waive Miranda rights</td>
<td>11 (19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plead guilty</td>
<td>10 (17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be sentenced</td>
<td>10 (17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Represent one’s self</td>
<td>8 (14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be Executed</td>
<td>8 (14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sentencing</td>
<td>19 (32)</td>
<td>27.83</td>
<td>36.60</td>
<td>1-100</td>
</tr>
<tr>
<td>Insanity</td>
<td>14 (24)</td>
<td>16.15</td>
<td>20.68</td>
<td>2-75</td>
</tr>
</tbody>
</table>

*NOTE: Based on N = 59.

participants in each of these groups, with results suggesting that there was a significant difference among these three groups, $\chi^2 (2, n = 59) = 34.81, p < .001, d = 0.77$ (large effect size). Further analyses suggest that there is a significant difference between participants who reported experience in both civil and criminal contexts ($n = 38$) and those who reported experience in the civil context only ($n = 20$), $\chi^2 (1, n = 58) = 5.59, p = .018, d = 0.31$ (medium effect size), as well as those who reported experience in the civil context only and those who reported experience in the criminal context only ($n = 1$), $\chi^2 (1, n = 21) = 17.19, p < .001, d = 0.91$ (large effect size). These results support Hypothesis 1, in that significantly more neuropsychologists reported having experience in both the civil and criminal forensic context since 2005, followed by the civil context alone, and finally the criminal forensic context alone.
To aid with further analyses, participants were collapsed to compose two groups: those participants with experience in the civil context only (Civil ONLY; \( n = 20 \), or 34%); and those participants with any experience in the criminal context, whether alone or in conjunction with experience in the civil context (ANY Criminal; \( n = 39 \), or 66%).

4.2 Training

4.2.1 Neuropsychological and forensic training between groups

A major component of the current study was to understand the training undertaken by neuropsychologists with experience in forensic contexts. Participants with significant forensic experience (\( n = 59 \)) reported receiving training in neuropsychology from a variety of sources (see Table 6, p. 36). The most prevalent reported source was graduate-level training, mostly while completing a degree in clinical psychology either with or without a neuropsychological specialization. A minority of participants reported receiving a degree in neuropsychology specifically, as well as degrees from a variety of allied fields.\(^5\) Additionally, the majority of participants reported receiving formal neuropsychological training during their pre-doctoral internship and post-doctoral fellowship, as well as other areas (i.e., fellowships in allied fields). Finally, the majority participants reported board certification. Participants were primarily board certified in clinical neuropsychology, but also reported certification in a variety of allied fields.

Conversely, participants reported receiving forensic training mostly through continuing education (CE) credits, though many participants also reported receiving training during their graduate degree, pre-doctoral internship, and post-doctoral

\(^5\) No differences appear to exist between those participants reporting degrees in applied fields (i.e., clinical psychology with and without neuropsychological specialization, neuropsychology, counseling psychology, and school and community psychology; \( n = 44 \)) and those reporting degrees in experimental fields (i.e., neuroscience, neurocognition, and experimental psychology; \( n = 3 \)).
Table 6: Neuropsychological training reported by neuropsychologists

<table>
<thead>
<tr>
<th>Training Type</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate degree</strong></td>
<td></td>
</tr>
<tr>
<td>Clinical psychology</td>
<td>21 (36)</td>
</tr>
<tr>
<td>Clinical psychology (neuropsychology specialization)</td>
<td>18 (31)</td>
</tr>
<tr>
<td>Neuropsychology</td>
<td>4 (7)</td>
</tr>
<tr>
<td>Counseling psychology</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Neurocognition</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Experimental psychology</td>
<td>1 (2)</td>
</tr>
<tr>
<td>School and community psychology</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Pre-doctoral internship</td>
<td>40 (68)</td>
</tr>
<tr>
<td>Post-doctoral fellowship</td>
<td>32 (54)</td>
</tr>
<tr>
<td>Other (i.e., fellowships in allied fields)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Board certification (neuropsychology or allied field)</td>
<td>47 (80)</td>
</tr>
<tr>
<td>Clinical Neuropsychology (ABCN)</td>
<td>46 (78)</td>
</tr>
<tr>
<td>Professional Neuropsychology (ABPN)</td>
<td>6 (10)</td>
</tr>
<tr>
<td>Clinical Psychology (ABCP)</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Rehabilitative Psychology (ABRP)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Professional Disability Consultants (ABPDC)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Sleep Medicine (ABSM)</td>
<td>1 (2)</td>
</tr>
</tbody>
</table>

* NOTE: Based on N = 59.
Table 7: Forensic training reported by neuropsychologists

<table>
<thead>
<tr>
<th>Training Area</th>
<th>Prevalence (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing education (CE) credits</td>
<td>50 (85)**</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>13 (22)</td>
</tr>
<tr>
<td>Pre-doctoral internship</td>
<td>14 (24)</td>
</tr>
<tr>
<td>Post-doctoral fellowship</td>
<td>16 (27)</td>
</tr>
<tr>
<td>Board certification (forensic)</td>
<td>7 (12)</td>
</tr>
<tr>
<td>Forensic Psychology (ABFP)</td>
<td>6 (10)</td>
</tr>
<tr>
<td>Forensic Medicine (ABFM)</td>
<td>1 (2)</td>
</tr>
</tbody>
</table>

*NOTE: Based on N = 59. **Range = 0-45 credits annually, $M_{hours} = 13.71$, $SD = 8.68$.

fellowship (see Table 7). Participants also reported receiving forensic training in a variety of other areas ($n = 21$, or 36%), primarily consisting of formal or informal clinical experience and supervision. In addition to their other board certifications, some participants reported being board certified in either forensic psychology or forensic medicine.

Finally, when asked how they defined themselves professionally, 54 of the 59 participants (92%) reported defining themselves as clinical neuropsychologists, followed by forensic neuropsychologists ($n = 19$, or 32%), clinical psychologists ($n = 11$, or 19%), forensic psychologists ($n = 9$, or 15%), or other ($n = 2$, or 3%). Participants could choose multiple definitions.

Regarding neuropsychological and forensic training, it was thought that neuropsychologists with experience in civil and criminal forensic contexts would report having significantly more specialized neuropsychology training than forensic training
(Hypothesis 2). To investigate this hypothesis, participants were compared based on their experience in civil and criminal forensic contexts, and their board certification in neuropsychology and forensic psychology. Specifically, a 2 (Forensic experience: Civil ONLY vs. ANY Criminal) x 2 (Board certification: Neuropsychology ONLY vs. Both neuropsychology and forensic psychology) Chi-square ($\chi^2$) test of independence was performed. The assumptions for this test were not met (2 cells, or 50%, had less than the minimum expected value of five), and a significant relation between these groups was not found, $\chi^2 (1, n = 47) = 3.22, p = .084$, Fisher’s exact test, $\varphi = 0.26$ (medium effect size). As the assumptions were not met for this analysis, a goodness-of-fit Chi-square ($\chi^2$) analysis was performed comparing board certification for the ANY Criminal group. Results suggested that significantly more participants in the ANY Criminal group were board certified in neuropsychology ($n = 26$) as opposed to forensic psychology ($n = 6$), $\chi^2 (1, n = 32) = 12.50, p < .001$, $d = 0.63$ (medium effect size). A similar goodness-of-fit Chi-square ($\chi^2$) analysis could not be run on the Civil ONLY group comparing neuropsychological board certification ($n = 15$) and forensic board certification ($n = 0$), as the latter group has an observed value of 0. These analyses therefore partially support Hypothesis 2, in that whereas the overall relation of these variables was not significant, participants in the ANY Criminal group separately reported having significantly more specialized neuropsychology experience than forensic experience in terms of board certification.

As board certification is controversial in the field in terms of representing specialized training, these groups were also compared based on their reported years of

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6 Fisher’s Exact Test was used to test for significance because the Chi-square ($\chi^2$) analysis had a 2x2 design and did not satisfy the assumption relating to the minimum number of expected observations per cell.
clinical neuropsychological and forensic experience. To compute years of clinical neuropsychological experience, participants’ reported year of graduation was subtracted from the year 2011 to give an approximate value of years of neuropsychological experience. Year of graduation was used as it was the most widely available demarcation of neuropsychological training \((n = 51, \text{ or } 86\%)\). Years of forensic experience was drawn directly from a question in the original survey instrument. A paired-samples \(t\)-test was performed comparing these values for the Civil ONLY group, which suggested that these participants had significantly more years of neuropsychological experience \((M_{\text{years}} = 23.18, SD = 8.27)\) than forensic experience \((M_{\text{years}} = 19.94, SD = 9.97)\), \(t(16) = 3.24, p = .003, r^2 = 0.84\) (large effect size). Another paired-samples \(t\)-test was performed comparing these values for the ANY Criminal group, which suggested that these participants also had significantly more years of neuropsychological experience \((M_{\text{years}} = 23.07, SD = 8.69)\) than forensic experience \((M_{\text{years}} = 18.70, SD = 8.62)\), \(t(29) = 5.35, p < .001, r^2 = 0.75\) (large effect size). These analyses therefore supported Hypothesis 2, in that participants in both the Civil ONLY and ANY Criminal groups reported having significantly more years of specialized clinical neuropsychology experience than forensic experience.

### 4.2.2 Levels of forensic training

Regarding the amount of forensic training undertaken across these groups, it was thought that neuropsychologists reporting experience in the criminal forensic context would have significantly more specialized forensic training than those reporting experience in the civil forensic context (Hypothesis 3). Before this hypothesis could be analyzed, though, participants first had to be categorized based on their level of forensic
training. Following Bersoff and colleagues (1997), participants were classified into three groups: legally-informed clinicians, proficiency-level clinicians, and specialty-level clinicians.

Criteria were established for each of these groupings based on the report of the Villanova Conference (Bersoff et al., 1997), as well as personal communications with members of the Villanova Conference workgroups on Graduate Forensic Psychology Programs and Practical Training (K. Heilbrun, personal communication, April 5, 2011; R. Roesch, personal communication, April 16, 2011) (see Table 8). These criteria were meant to be flexible, and the amount of the participant’s professional experience was given the most weight during coding.

### Table 8: Levels of forensic training

<table>
<thead>
<tr>
<th>Level of Forensic Training</th>
<th>Legally-informed clinician</th>
<th>Proficiency-level clinician</th>
<th>Specialty-level clinician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forensic caseload</td>
<td>&lt;10%</td>
<td>10-49%</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>CE credits</td>
<td>Yes</td>
<td>Extensive</td>
<td>Extensive</td>
</tr>
<tr>
<td>Clinical practicum</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>Forensic concentration/minor</td>
<td>Forensic track</td>
<td></td>
</tr>
<tr>
<td>Pre-doctoral internship</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Post-doctoral fellowship</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Board certification</td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Prevalence (%)</td>
<td>7 (12)</td>
<td>35 (59)</td>
<td>17 (29)</td>
</tr>
</tbody>
</table>

*NOTE: Percentage of total clinical caseload dedicated to forensic clients.*
Two graduate students in clinical psychology independently reviewed the participants’ reported training experiences in forensic psychology and coded each participant into one of the forensic training groupings. Coders then compared their findings, and resolved any differences through consensus agreement (ICC = .662). Overall, the majority of participants were categorized as proficiency-level clinicians, followed by specialty-level clinicians, and finally legally-informed clinicians.

To analyze Hypothesis 3, a 2 (Forensic experience: Civil ONLY vs. ANY Criminal) x 3 (Forensic training: legally-informed vs. proficiency vs. specialty) Chi-square ($\chi^2$) test of independence was performed. This test did not meet the required assumptions (two of the cells (50%) did not reach the minimum expected count of five), and did not suggest a significant relation among these groups, $\chi^2 (2, n = 59) = 1.94, p = .190, V = 0.18$ (small effect size). Goodness-of-fit Chi-square ($\chi^2$) analyses were also run separately for each of the forensic training groups. Although significantly more proficiency-level clinicians were found in the ANY Criminal group ($n = 24$) than in the Civil ONLY group ($n = 11$), $\chi^2 (1, n = 35) = 4.83, p = .028, d = 0.37$ (small to medium effect size), no significant differences were found among either specialty-level clinicians ($n = 12$ ANY Criminal vs. 5 Civil ONLY), $\chi^2 (1, n = 17) = 2.88, p = .09, d = 0.41$ (small to medium effect size), or the legally-informed clinicians ($n = 3$ ANY Criminal vs. 4 Civil ONLY), $\chi^2 (1, n = 7) = .14, p = .705, d = 0.14$ (small effect size). Hypothesis 3 was therefore not supported, in that no overall significant differences in level of forensic training were found between the ANY Criminal and Civil ONLY groups.

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7 Fisher’s Exact Test was not used as the Chi-square ($\chi^2$) analysis was larger than a 2x2 design.
To capture this hypothesis another way, participants in the Civil ONLY and ANY Criminal groups were compared along the continuous variable of years of forensic experience, with the expectation that the ANY Criminal group would have significantly more years of forensic experience than the Civil ONLY group. The results of an independent-samples t-test suggested that the ANY Criminal group ($M_{\text{years}} = 18.37$, $SD = 10.56$) and the Civil ONLY group ($M_{\text{years}} = 18.17$, $SD = 8.74$) did not differ significantly in terms of years of forensic experience, $t(53) = .08$, $p = .470$, $d = 0.02$ (small effect size). This analysis also failed to support Hypothesis 3, in that no significant difference in years of forensic experience was found between the ANY Criminal and Civil ONLY groups.

4.3 Practice

4.3.1 Jurisdictional differences

Another focus of the current study was the practice of neuropsychologists related to forensic contexts. As stated previously, participants reported practicing in 34 states and the District of Columbia. Based on the current laws dictating the admissibility of evidence in the United States (Kaufman, 2007; McLaughlin, Weinstein, & Berger, 1999) (see Table 1, p. 20), these participants were categorized into those practicing within Frye states ($n = 32$, or 54%), Daubert states ($n = 17$, or 29%), or both ($n = 9$, or 15%). One participant (2%) did not report the state or jurisdiction in which they practiced, and was therefore unable to be classified. Fifty-eight participants (98%) reported knowing the statutes governing the admissibility of expert testimony in their state or jurisdiction of practice.

It was thought that neuropsychologists with experience in the civil context only (Hypothesis 4), criminal context only (Hypothesis 5), and both the civil and criminal
context (Hypothesis 6) would report a significantly higher prevalence of acting as experts in Frye states than in Daubert states. As these initial groupings were collapsed into the Civil ONLY and ANY Criminal groups, only Hypothesis 4 and Hypothesis 6 were analyzed. Additionally, participants practicing in both Frye and Daubert states were removed from these analyses, as their inclusion would have produced inconsequential results based on the selected hypotheses.

To analyze Hypothesis 4, a goodness-of-fit Chi-square ($\chi^2$) analysis was performed comparing the prevalence of the Civil ONLY group in the Frye and Daubert states. It was found that there was not a significant difference in the prevalence of participants in the Civil ONLY group between Frye ($n = 10$) and Daubert states ($n = 7$), $\chi^2 (1, n = 17) = .53, p = .467, d = 0.17$ (small effect size). Hypothesis 4 was therefore not supported. To analyze Hypothesis 6, a similar goodness-of-fit Chi-square ($\chi^2$) analysis was performed comparing the prevalence of the ANY Criminal group in Frye and Daubert states. It was found that there was a significant difference prevalence of participants in the ANY Criminal group between Frye ($n = 22$) and Daubert states ($n = 10$), $\chi^2 (1, n = 32) = 4.50, p = .034, d = 0.38$ (small to medium effect size). Hypothesis 6 was therefore supported, such that significantly more participants in the ANY Criminal group reported practicing within Frye states as opposed to Daubert states.

4.3.2 Challenges to admissibility

The final focus of the current study centered on challenges to admissibility. It was thought that neuropsychologists with experience in the civil forensic context only (Hypothesis 7), the criminal forensic context only (Hypothesis 8), and both civil and criminal forensic context (Hypothesis 9) would report significant differences in the
prevalence of challenges to admissibility between Daubert and Frye states. Unfortunately, the limited number of participants in Frye and Daubert state groups regarding challenges to admissibility prevented inferential statistics from being performed. Therefore only descriptive statistics will be presented.

Fifty-eight participants (98%) reported having been asked to testify in either their civil or criminal forensic cases since 2005, though the amount of their cases in which this occurred varied greatly (range: 1-80%, $M_{\text{percent}} = 12.66$, $SD = 14.53$). Regarding challenges to admissibility, 29 participants (49%) reported being aware of times when the admissibility of their testimony was challenged. For those participants whose testimony was challenged in the civil context ($n = 20$, or 69% of all participants who were aware of challenges), this appeared to occur only in a minority of cases (range: 0-20%, $M_{\text{percent}} = 4.10$, $SD = 4.78$) (Table 9). Further, the proportion of these cases in which the challenges were successful varied greatly, but averaged low (range: 0-100%, $M_{\text{percent}} = 5.35$, $SD = 22.31$). Regarding participants whose testimony was challenged in the criminal context,

<table>
<thead>
<tr>
<th></th>
<th>Prevalence (%)</th>
<th>$M$</th>
<th>$SD$</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges (civil)</td>
<td>20 (69)</td>
<td>4.10</td>
<td>4.78</td>
<td>0-20</td>
</tr>
<tr>
<td>Successful challenges</td>
<td>5.35</td>
<td>22.31</td>
<td></td>
<td>0-100</td>
</tr>
<tr>
<td>Challenges (criminal)</td>
<td>14 (48)</td>
<td>3.36</td>
<td>6.02</td>
<td>0-20</td>
</tr>
<tr>
<td>Successful challenges</td>
<td>.50</td>
<td>1.58</td>
<td></td>
<td>0-5</td>
</tr>
</tbody>
</table>

Types of challenges

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Predominantly partial</td>
<td>23 (79)</td>
</tr>
<tr>
<td>Predominantly full</td>
<td>4 (14)</td>
</tr>
<tr>
<td>Both partial and full equally</td>
<td>2 (7)</td>
</tr>
</tbody>
</table>

* NOTE: Based on $N = 29$.
this also appeared to occur in a minority of cases (range: 0-20%, $M_{\text{percent}} = 3.36$, $SD = 6.02$), especially regarding successful challenges (range: 0-5%, $M_{\text{percent}} = .50$, $SD = 1.58$).

Regarding the types of challenges, the majority of participants reported receiving predominantly partial challenges (i.e., those challenges including only sections of the evidence provided by an expert witness in a case), as opposed to full challenges (i.e., those challenges questioning the inclusion of the expert witness in the case) or both equally (Table 9). Based on a goodness-of-fit Chi-square ($\chi^2$) analysis, this represented a significant difference in the type of challenges faced by neuropsychologists working within forensic contexts, $\chi^2 (2, n = 29) = 27.79, p < .001, d = 0.98$ (large effect size).
Chapter 5: Discussion

5.1 Review

The use of neuropsychological expertise in the United States legal system has increased dramatically over the past few decades. Despite this growth, little is known about those professionals who choose to apply their training and experience in the forensic arena. To address this gap in understanding, this study examined the prevalence, training, and practices of neuropsychologists with experience across civil and criminal forensic contexts.

As expected, the majority of participants reported conducting forensic mental health assessments in both civil and criminal legal cases, while a sizeable minority reported restricting their forensic experience to civil cases only. Conversely, practicing solely within the criminal forensic context appears to be virtually nonexistent among neuropsychologists, evidenced by the fact that only one participant reported this type of experience alone. These findings appear to be in line with previous surveys regarding the practices of neuropsychologists in forensic cases (Mittenberg, Patton, Canyock, & Condit, 2002; Sweet, King, Malina, Bergman, & Simmons, 2002; Sweet, Moberg, & Suchy, 2000).

Participants’ experience within the civil forensic context was quite varied, both in terms of the amount of their overall caseload dedicated to clients involved in civil litigation, as well as the types of civil legal capacities they were asked to assess. The most prevalent of these was personal injury evaluations, which was reported by almost all participants with experience conducting assessments in civil cases. Experience conducting competency evaluations was also quite prevalent across all major types of
civil competencies, and included competency to make personal or financial decisions, testamentary competency, and competency to consent to treatment. The amount of their caseloads that participants reported dedicating to personal injury and civil competency evaluations varied widely, ranging between 1% and 100% of their overall caseload for both types of forensic mental health assessment. On the other hand, very few participants reported experience assisting in legal decision making around child custody, with even these few participants reporting little involvement. Based on these findings, the role played by neuropsychologists in personal injury and civil competency cases appears to be firmly established, while their role in child custody cases is quite limited.

Participants’ experience within criminal cases was also varied, though participants’ reports suggesting a more equal distribution across the types of criminal cases in which neuropsychologists are involved. Experience conducting competency evaluations in criminal cases, while being the most prevalent type of evaluation reported, was endorsed only by a minority of these participants (42%). As seen with previous types of civil assessments, the amount of their overall caseloads dedicated to these clients varied widely, ranging between 1% and 100%. All participants reported experience assessing competency to stand trial, and a majority reported experience assessing competency to testify; further, large minorities reported experience assessing competency to waive Miranda rights, competency to represent one’s self, competency to plead guilty, competency to be sentenced, and even competency to be executed. A large minority of participants (32%) also endorsed experience conducting sentencing evaluations, with the amount of their caseload consisting of these clients also varying drastically (between 1% and 100%). Finally, a similar minority of participants (24%) reported conducting
evaluations aimed at assessing mental state at the time of the offense, though the amount of their caseload dedicated to these assessments was slightly more limited (between 2% and 75%). The role played by neuropsychologists in criminal cases therefore appears most established in criminal competency evaluations, with a slightly lower prevalence in insanity evaluations and sentencing evaluations.

As neuropsychological professionals working within the legal system offer themselves as experts in these matters, the amount and type of training they have undertaken is of significant importance. Participants in this sample were highly trained in neuropsychology, including graduate-level training as well as additional training during pre-doctoral internships and post-doctoral fellowships. Graduate training primarily included degrees in clinical psychology broadly (with or without specific specializations in neuropsychology), with fewer reporting degrees in neuropsychology specifically. Degrees were also awarded in several allied fields, from neuroscience and neurocognition to experimental, counseling, and school and community psychology. Although the majority of participants appeared to have followed similar training paths (i.e., early specialization in neuropsychology augmented by advanced post-graduate training), it is important to note that professionals acting as neuropsychological experts in forensic contexts come from a variety of training backgrounds. Indeed, this sample used a variety of professional labels to define themselves, most often referring to themselves as clinical neuropsychologists but also using forensic neuropsychologist, clinical psychologist, or forensic psychologist either separately or in conjunction with other labels.

While clinical neuropsychology is regarded as being one of the foremost specialties in terms of recognition of advanced competence, certification of advanced
training remains a controversial issue. A large majority of individuals in this sample reported being board certified, with the majority of board certified individuals reporting certification through the American Board of Clinical Neuropsychology (ABPP affiliate) and the American Board of Professional Neuropsychology. Individuals also reported certification by boards representing a variety of allied fields, including the American Board of Clinical Psychology (ABPP affiliate), American Board of Rehabilitation Psychology (ABPP affiliate), American Board of Professional Disability Consultants, and then American Board of Sleep Medicine. Interestingly, in addition to their board certification in another field, six participants reported board certification in forensic practices, mostly through the American Board of Forensic Psychology (ABPP affiliate) but also through the American Board of Forensic Medicine. As expected, board certification in neuropsychology was more prevalent among participants than was board certification in forensic psychology. Adding support to this disparity in training between neuropsychology and forensic psychology, participants also reported significantly more years of neuropsychological experience than forensic experience. Based on both of these markers of advanced experience, it appears that neuropsychologists choosing to apply their expertise to forensic cases have devoted more time to becoming experts in neuropsychology than in forensic concepts, which is consistent with the idea that expert witnesses should be highly trained in their respective fields of interest as opposed to forensic issues broadly.

This is not meant to imply that neuropsychologists applying their clinical professional expertise to legal cases should not be trained to understand their role within forensic contexts. To the contrary, due to inherent differences between clinical and
forensic assessment in general (Heilbrun, 2001), and forensic neuropsychological assessment specifically (Heilbronner, 2004; Heilbrun et al., 2003), training in the forensic context is considered best practice. In this sample, individuals reported receiving forensic training across a variety of settings. Compared to their neuropsychological training, individuals’ forensic training was less likely to have come during graduate-level study, pre-doctoral internships, or post-doctoral fellowships. In fact, the most widely reported source of forensic training for this sample was continuing education (CE) courses, which are designed to offer professionals the opportunity to continue to receive advanced training in their own field or to gain training in another field of interest. In addition to these more structured training opportunities, participants reported receiving formal and informal clinical supervision across a variety of forensic settings, further informing their forensic experience. Therefore it appears that the majority of neuropsychologists who choose work within the forensic context have supported their decision through post-graduate continuing education, supplemented by pre- and post-doctoral training or supervision in forensic contexts as well.

Contrary to predictions, participants’ level of forensic training and reported years of forensic experience did not differ between those with experience in the civil context alone and those with experience in civil as well as criminal contexts. Potential explanations of these findings are offered below. When analyzed separately, it was found that there were significantly more proficiency-level clinicians in the ANY Criminal group than in the Civil ONLY group, and differences between these groups among the specialty-level clinicians approached both significance (\( p = .09 \)) and a medium size of effect (\( d = .41 \)). These results suggest that differences in forensic training may in fact
exist between these groups, however more focused investigations are required to support this assumption. Based on the results of the current study, it appears that the forensic training undertaken by neuropsychologists is similar regardless of their involvement within civil or criminal cases.

A large thrust of the current study was to investigate jurisdictional differences in the practice of neuropsychologists acting as experts in legal cases. Participants in the current study reported practicing across 34 states and the District of Columbia, representing a large swath of the United States legal system. Participants were divided into those practicing within Frye states and those practicing within Daubert states, based on their states’ statutes defining expert testimony. The overwhelming majority of participants reported knowing the statutes governing the admissibility of expert testimony in their state, which is a promising finding. Whether participants correctly knew their state’s statues was not investigated in the present study, and would be an interesting dichotomy to consider in future research. Partially in line with the hypotheses of this study, it was found that those participants reporting experience in the criminal context, but not the civil context, were more likely to practice in Frye states than Daubert states. Implications of this finding are discussed below.

Finally, almost all participants reported being asked to testify in court since 2005. As mentioned previously, differences between the Frye and Daubert standards may have a significant impact on neuropsychologists’ ability to act as expert witnesses across jurisdictions. Few participants reported being aware of times when the admissibility of their testimony was challenged, however, and analyses regarding jurisdictional differences in challenges to admissibility were unable to be performed. Descriptively,
while approximately half of participants reported being aware of times when their testimony was challenged, this seemed to constitute a minority of their cases in both the civil and criminal context. Cases in which these challenges were successful were even less frequent, averaging around 5% for civil cases and 0.5% for criminal cases. Interestingly, participants reported receiving significantly more challenges questioning specific sections of the evidence they provided (i.e., partial challenges) as opposed to challenges questioning their inclusion as experts overall (i.e., full challenges). Therefore, despite the frequency with which neuropsychologists appear to be asked to testifying in legal cases, they may be experiencing infrequent challenges in either civil and criminal courts, and when they do occur they are rarely successful. Finally, it seems that the challenges that do occur are largely centered on disallowing sections of the neuropsychologist’s testimony, as opposed to challenging whether the neuropsychologist qualifies as an expert overall.

5.2 Limitations

This study had several limitations that restricted its findings. The main limitation in this study was a small sample size. Although 169 total participants responded to the survey, only 59 satisfied all inclusion criteria and completed all of the items. The small final sample size could be attributed to a variety of factors. The first is that participants were drawn from only two sources, the American Academy of Neuropsychology (AACN) and the National Academy of Neuropsychology (NAN). Although these are two of the largest and best-established professional organizations in the field, additional participants may have been recruited through additional organizations, including APA Division 40 (Clinical Neuropsychology), the International Neuropsychological Society,
and various state-run neuropsychological organizations. Mental health professionals with experience conducting in neuropsychological evaluations in forensic contexts may also have been drawn from professional organizations dedicated to forensic psychology more generally, including APA Division 41 (Forensic Psychology) and the American Psychology-Law Society (AP-LS). Additionally, the fact that this study constituted a Master’s thesis meant significant time and financial constraints. For example, the amount of NAN members who were mailed invitations was limited by the costs associated with purchasing their contact information and paying for shipping supplies. Also, the data collection period for this study was short (approximately 2 months), which when compounded with the limited number of organizations contacted and the limited resources to be used in recruitment may have restricted the number of participants.

Regardless of the reasoning, the restricted sample size appears to have impacted this study in two important ways. The first is evident in the fact that some of the analyses did not meet their assumptions based on low expected values, or were unable to be performed at all. Those that could be performed may have been strengthened with the addition of more data, perhaps leading to more significant findings or potentially even different findings. For example, the lack of reported experience dedicated solely to the criminal forensic context significantly impacted the current study, leading to collapsed groups being used in all analyses. Although it may be possible that the prevalence of neuropsychologists choosing to apply their expertise solely within criminal cases is nearly nonexistent, it may also be the case that these neuropsychologists simply did not participate in the study. Additionally, the finding that significantly more neuropsychologists reported practicing in criminal contexts in Frye states than in Daubert
states may represent an actual jurisdictional difference among participants, however alternate explanations are also possible. For example, this findings may represent an artifact in the data based on either the lower prevalence of participants practicing in criminal (vs. civil) contexts or Daubert (vs. Frye) jurisdictions overall, or the higher base rate of states classified as Frye states \((n = 32)\) versus Daubert states \((n = 18\), and the District of Columbia\). The small effect size attributed to this finding may suggest the latter, however additional research is needed before final conclusions can be reached.

Finally, the low number of participants who were aware of times when the admissibility of their testimony was challenged disallowed any analyses regarding jurisdictional differences in challenges to the admissibility of neuropsychological evidence. As both differential jurisdictional statutes and challenges to admissibility may have a profound influence on the ability of neuropsychologists to act as experts in legal cases, these concepts are surely worth investigating further.

The second major impact of the restricted sample size is a potential lack of generalizability of the findings. The finding that 80% of participants reported holding board certification is the most obvious suggestion that this sample may not be representative of the field. Although board certification is certainly an aspirational marker of advanced success, to believe that 4 out of every 5 neuropsychologists practicing in the United States today are board certified is a clear overestimate. This is most likely attributable to the fact that the majority of individuals included in this study were recruited from the American Academy of Clinical Neuropsychology, whose members by definition hold board certification in the field. Therefore, the results of this study may be more representative of the prevalence, training, and practices of board...
certified neuropsychologists practicing within the forensic context, as opposed to neuropsychologists in general. Additionally, this sample was predominantly Caucasian (95%), which may limit its generalizability to neuropsychologists of different racial and ethnic backgrounds.

Another limitation was lack of prior research, which could have been used to inform the current study in several important ways. For example, in an attempt to include only those neuropsychologists with significant forensic experience, participants with 5% or less of their overall caseload dedicated to forensic clients were excluded. This criterion eventually excluded 57 individuals from continuing on in the survey, who would have nearly doubled the total amount of participants included in the final analyses. This could have significantly impacted the results in several ways. Most clearly, these participants could have better informed the prevalence of neuropsychologists practicing within the civil and/or criminal forensic context, as well as the categorization of participants based on level of forensic training and experience. Assuming that the majority of these individuals would meet the criteria for legally-informed clinicians, and based on the fact that significant and near-significant findings were reported in the other two levels of clinicians, the inclusion of this group could have been pivotal in better understanding any differences in level of forensic training between neuropsychologists practicing in civil and criminal forensic contexts. It should be pointed out that this group was still predominantly board certified (82%) and Caucasian (100%), and would have done little to remedy the problem of generalizability of the sample.

On top of informing which participants to include, prior research could also have guided which items to include that could best track similarities and differences among
participants. The items included in the current study were selected based on what made sense to the researchers due to their experience in forensic contexts, and may not have tapped important distinctions that exist within this subpopulation of neuropsychologists. Empirical investigations of the experiences of neuropsychologists practicing within forensic contexts may have highlighted additional areas of concern, especially as the field of forensic neuropsychology strives to develop into a more established specialty area. Future research should be conducted with this goal in mind, tailoring the concepts investigated toward addressing any controversial or previously unstudied issues.

5.3 Implications

Despite these limitations, the current study did produce a variety of interesting findings that have significant implications for the fields of forensic psychology and forensic neuropsychology. The most interesting outcome of the current study from a research perspective is the empirical application of levels of forensic training to categorize participants. This exploratory categorization of participants included three levels of forensic training, namely legally-informed clinicians, proficiency-level clinicians, and specialty-level clinicians. This categorization, based on the findings of the Villanova Conference (Bersoff et al., 1997), factored in the amount of their caseload that participants devoted to forensic clients, structured pre- and post-doctoral training, board certification in forensic psychology, and the amount of forensic post-graduate training received through continuing education (CE) credits. This categorization did not yield any significant results regarding differences in level of forensic training in the current study, which may reflect that there are no differences in level of forensic training between participants practicing within civil and criminal forensic contexts; conversely, these
insignificant findings may well be related to the various methodological limitations noted above.

As this was the first time that this categorization had been applied empirically, the operationalization of each level of forensic training remained somewhat vague when applied to the various experiences reported by the participants in this sample. This is evident in the difficulty of agreement experienced by the individuals who classified the participants into these three groups, as expressed through a moderate intra-class correlation coefficient (ICC). As previous noted, this classification may also have been significantly effected by the decision to exclude individuals with 5% or less of their clinical experience dedicated to forensic clients. Classification of individuals based on level of forensic training could be an interesting and intuitive application in future research involving clinicians working within the forensic context. More reliable definitions of the legally-informed, proficiency-level, and specialty-level groupings should be developed to aid these investigations, and investigators would do well to include all participants regardless of how minimal their forensic experiences may appear, as this appears consistent with the current practices of the field.

The current study may also have important implications for neuropsychologists choosing to practice within the forensic context. Results suggest that there may be differences in the prevalence of neuropsychologists working within legal cases, based on the statues governing the admissibility of expert testimony in their states of practice. It appears that neuropsychologists were more likely to practice in criminal forensic cases in those states that have adopted Frye or Frye-like standards, whereas the likelihood of practicing in civil forensic cases did not differ across jurisdictions. One possible
explanation for this is that neuropsychological evidence being applied to criminal cases in *Daubert* jurisdictions is being challenged more regularly, causing lawyers, legal decision-makers, and clinicians to be more reluctant to use this type of evidence in their cases. This same reluctance may not be seen in civil cases because the role of neuropsychological evidence may be more widely accepted in these legal questions.

Another plausible explanation of this result is that it is an artifact of the current study, which seems to be bolstered by the small effect size attributed to this finding. Problems regarding the generalizability of the sample have already been discussed, and jurisdictional differences and challenges to admissibility are such inherently legal concepts that relying on clinicians to provide this data is troublesome. As evidenced in the current study, clinicians may not be aware of when or if their reports or testimony is being challenged in court, and when they are their knowledge or understanding of these processes may be incomplete. Due to the limited information provided by participants in this regard, any relationships between the prevalence of challenges to admissibility and the prevalence of neuropsychologists practicing within legal cases were unable to be analyzed. Enhanced survey techniques, including representative samples of clinicians and legal decision-makers, could be better suited to address these issues. Additionally, an analysis of relevant case law involving neuropsychological evidence would be helpful by addressing this issue from the legal perspective. Regardless of the methods, the significant impact that challenges to admissibility may have on the practice of forensic neuropsychology in the United States legal system necessitates further research to inform these unanswered questions.
Although not a hypothesis of the current study, neuropsychologists were significantly more likely to report experiencing partial challenges to the admissibility of their evidence than challenges questioning their qualifications as expert witnesses in general. Although it is unclear which sections of their testimony are being challenged, this could represent the cited difficulty of non-medical experts proffering expertise in brain-behavior relationships. This finding may therefore support that, despite informed arguments to the contrary, lawyers and legal decision-makers continue to question the opinions of psychologists regarding legally-relevant organic brain deficits. Future research that includes more detailed questioning of types of challenges of admissibility could better resolve this issue, and would provide invaluable information on the current state of neuropsychological evidence in the United States legal system.

Finally, the current study represents the most recent in a line of surveys focused on better understanding the role of neuropsychologists in forensic cases. Unlike previous surveys, which indirectly addressed the level of interest among neuropsychologists practicing within different legal cases (Mittenberg, Patton, Canyock, & Condit, 2002; Sweet, King, Malina, Bergman, & Simmons, 2002; Sweet, Moberg, & Suchy, 2000), the current study focused specifically on better understanding the differential practices of neuropsychologists in civil and criminal forensic contexts. Experience in civil cases was nearly ubiquitous, with nearly every neuropsychologist in the study reported practicing within the civil context. Experience in criminal cases was also highly prevalent, with two-thirds of participants reported practicing within the criminal context. The majority of neuropsychologists therefore appear to practice in both civil and criminal forensic settings, with fewer restricting their experience to civil cases only and very rarely
focusing exclusively on criminal cases. Within the civil context neuropsychologists appear to have more clearly established their role within competency and personal injury evaluations (as opposed to child custody evaluations), and evenly across competency, insanity, and sentencing evaluations in criminal cases. Future studies tracking the development of the field of forensic neuropsychology would therefore do well to represent the differential experiences of neuropsychologists performing evaluations in civil and criminal cases, and should include continued investigation of their roles within these and other specific civil and criminal legal questions.

External surveys focused explicitly on these practices may continue to be useful, though it may be more appropriate for neuropsychological organizations that already survey their members to incorporate specific sections focused on their forensic practices. Some organizations have already done this, including APA Division 40 (Clinical Neuropsychology), the National Academy of Neuropsychology, and the American Academy of Clinical Neuropsychology (see, e.g., Sweet, Moberg, & Suchy (2000); Sweet, Peck, Abramowitz, & Etzweiler, 2002, 2003), however based on the current study these surveys should be expanded to include items separately devoted to civil and criminal forensic experiences.

The current study represents a focused attempt to better understand the prevalence of neuropsychologists working within civil and criminal forensic contexts, the training completed by these professionals, and differences in the practice of these professionals across different legal cases, questions, and jurisdictions. These issues will remain important as the specialty of forensic neuropsychology continues to develop, and as the use of neuropsychological evidence continues to increase in the United States legal
system. Although neuropsychology has the capacity to better-inform decision making across a variety of legal questions, much work must be done to better understand its current limitations and better guide its future role in civil and criminal forensic contexts.
Chapter 6: References


Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).


Appendix A: PsychData Security Statement

Overview

PsychData provides superior online research services to the social science community. A critical component of this goal is ensuring the security of each researcher's data. PsychData is specifically designed to meet and exceed industry standards for Internet security as well as IRB standards for the protection of research participants. Our servers, database, and web presence employ multiple forms of enterprise-level security features to accomplish these goals. Interested parties will find the details of our security statement below. We actively foster an open dialogue with interested parties in order to continuously improve our services.

Server Infrastructure

Our servers are housed in a secure data facility and are monitored 24 hours-per-day and 7 days-per-week by network operations personnel for all aspects of operational security. Biometric/intrusion sensors, card readers, personal identification numbers, and environmental sensors are used to ensure server integrity and safety. Redundant HVAC systems ensure an optimized operational environment. Server power is provided by a redundant, multi-stage, uninterruptible system. Even in the event of a catastrophic commercial power failure, diesel generators seamlessly provide backup power. A redundant, high-bandwidth, private transport network provides connectivity between our servers and the world. The local fiber connectivity is redundant with three fiber rings with dual entry points from Optical Carrier-12 (OC-12) hardware. This network has demonstrated 99.999% availability, which means that the network will be down no more than 5 minutes in one year.

Enterprise-Level Database Architecture

PsychData utilizes a robust, centralized, and enterprise-level SQL Server database that is easily capable of handling millions of records and multiple concurrent users. All database transactions utilize TSQL stored procedures for increased database security and efficiency. In addition, our database has been carefully constructed to achieve architecture efficiency and conforms to the Second Normal Form (2NF).

Server Operating System

All servers must use some form of software "platform" in order to operate. PsychData servers are powered by Windows Server 2008 and utilize Internet Information Services (IIS) 7.0. Microsoft Windows Server 2008 is considered to be as secure or more secure than Apache and Linux/Unix platforms. Our servers are professionally administered, updated with the latest security patches and closely monitored at all times.
Secure Socket Layer (SSL) 256-bit Encryption

In order to protect data and other sensitive information during transit from our web pages to our database, we utilize Secure Socket Layer (SSL) 256-bit encryption technology. For many years, Internet-based credit card transactions have been successfully protected by SSL, which utilizes state-of-the-art SSL encryption algorithms. Data is encrypted at the instant that a user submits it and can only be decoded by the target server. PsychData has been granted an SSL certificate from VeriSign, the industry leader in SSL technology.

Summary

PsychData has been carefully designed to provide superior online research services to the social science community in a secure setting. The security of our systems and our member's data is our top priority. If you have a question or concern about the safety of online research, we encourage you to contact us to find out more.
Appendix B: Invitation to Participate

Dear [AACN/NAN] Member:

This is a request to participate in the study, “A Survey of Clinical Neuropsychologists with Experience in Forensic Contexts.” This is the first of two messages you will receive regarding this survey. Thank you for your time.

I am a Master of Science candidate in the Department of Psychology at Drexel University, under the supervision of David DeMatteo, JD, PhD. For my Master’s thesis I am conducting a survey of clinical neuropsychologists who have experience working in forensic contexts. Multiple sources of evidence point to the increased involvement of neuropsychologists providing expert testimony in legal proceedings across the United States. Despite this increase, little is known about the neuropsychologists who choose to work within civil and criminal forensic contexts. The purpose of this research study is to learn more about the training and experience of clinical neuropsychologists working within forensic contexts.

You are being contacted due to your membership in the National Academy of Neuropsychology, the American Academy of Clinical Neuropsychology, or both. I hope that you will participate in a very brief, online survey about your training and experience as a neuropsychologist. Please only complete this survey once. The survey should take about 15 minutes of your time, depending on your experience. As this study aims to understand the prevalence of forensic practice among neuropsychologists, you are encouraged to participate regardless of your level of forensic experience. If you are willing to participate in this study, please follow the link below to access the online survey:

www.neuropsychsurvey.com

Drexel University’s Institutional Review Board (IRB) has approved this research study (IRB#: 19493). Your participation is completely voluntary. By completing the survey, you are indicating your voluntary participation. If you choose to participate, you can stop or withdraw your participation at any time.

This study will not request any identifying information, and your responses will be anonymous. All data will be kept in secure files. If you have any questions or concerns, please contact Casey LaDuke at casey.laduke@drexel.edu or (802) 316-7174, or contact David DeMatteo, JD, PhD, at (215) 762-8342 or david.deMatteo@drexel.edu.
Appendix C: A Survey of Clinical Neuropsychologists with Experience in Forensic Contexts

**Background:** Multiple sources of evidence point to the increased involvement of neuropsychologists providing expert testimony in legal proceedings across the United States. Despite this increase, little is known about the neuropsychologists who choose to work within civil and criminal forensic contexts.

**Purpose:** The purpose of this research study is to learn more about the training and experience of clinical neuropsychologists working within forensic contexts, and any jurisdictional differences that may exist in this practice.

**Procedures:** You are being contacted based on your membership in the National Academy of Neuropsychology, the American Academy of Clinical Neuropsychology, or both. I hope that you will participate in a very brief, online survey about your training and experience as a neuropsychologist. Please only complete this survey once. The survey should take about 15 minutes of your time, depending on your experience. As this study aims to understand the prevalence of forensic practice among neuropsychologists, you are encouraged to participate regardless of their level of forensic experience.

**Participation:** Drexel University’s Institutional Review Board (IRB) has approved this research study (IRB#: 19493). Your participation is completely voluntary. If you are willing to participate in this study, please click on the button below to begin the online survey. By completing the survey, you are indicating your voluntary participation. If you choose to participate, you can stop or withdraw your participation at any time.

**Confidentiality:** This study will not request any identifying information. All data will be kept in secure files. If you have any questions or concerns, please contact Casey LaDuke, BA, at casey.laduke@drexel.edu or (802) 316-7174, or contact David DeMatteo, JD, PhD, at david.dematteo@drexel.edu or (215) 762-8342.

To participate in this study, please click "Continue to Next Page" below.
*1) From which organization did you receive the invitation to participate in this survey?

☐ American Academy of Clinical Neuropsychology (AACN)
☐ National Academy of Neuropsychology (NAN)
☐ Both

2) Of which professional neuropsychological organization are you a member? (select all that apply)

☐ American Academy of Clinical Neuropsychology (AACN)
☐ National Academy of Neuropsychology (NAN)
☐ Other (please specify):

3) What is your age? (years)


4) What is your gender?

☐ Female
☐ Male
☐ Other (please specify):

5) What is your ethnicity? (select all that apply)

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander
☐ White or Caucasian
☐ Hispanic, Latino, or Spanish origin (may be of any race)
☐ Other (please specify):
6) In which state or jurisdiction do you practice? (select all that apply)

[Dropdown list of all 50 states, Washington DC, and Federal Jurisdiction]

[Dropdown list of all 50 states, Washington DC, and Federal Jurisdiction]

[Dropdown list of all 50 states, Washington DC, and Federal Jurisdiction]

7) Which of the following best describes the area in which you predominantly practice? (select all that apply)

- Rural
- Suburban
- Urban

8) Which of the following best describes the setting in which you predominantly practice? (select all that apply)

- Academic
- Medical
- Private practice
- Other (please specify)

9) What level of neuropsychological training do you have? (select all that apply)

- Graduate degree
- Pre-doctoral internship
- Post-doctoral fellowship
- Board certification
- Other (please specify):

_____________________________________________________________________

Items 10-15 below refer to your selected responses to Item 9 (above).

Please only respond to the items that correspond with your level of neuropsychological training.
10) If you selected "graduate degree," In what year did you receive your graduate degree? (year)


11) If you selected "graduate degree," In which field did you receive your graduate degree?

- Clinical Psychology
- Clinical Psychology with Neuropsychology specialization
- Counseling Psychology
- Neuroscience
- Other (please specify):

12) If you selected "Board certification," Which Board certification do you hold? (select all that apply)

- American Board of Clinical Child and Adolescent Psychology (ABCCAP)
- American Board of Clinical Health Psychology (ABCHP)
- American Board of Clinical Neuropsychology (ABCN)
- American Board of Clinical Psychology (ABCP)
- American Board of Cognitive and Behavioral Psychology (ABCBP)
- American Board of Counseling Psychology (ABCoP)
- American Board of Couple and Family Psychology (ABCFP)
- American Board of Forensic Psychology (ABFP)
- American Board of Group Psychology (ABGP)
- American Board of Organizational and Business Consulting Psychology (ABOBCP)
- American Board of Professional Neuropsychology (ABPN)
- American Board of Psychoanalysis in Psychology (ABPsaP)
- American Board of Rehabilitation Psychology (ABRP)
- American Board of School Psychology (ABSP)
- Other (please specify)
If you selected "Board certification, In what year were you awarded Board certification? (please respond separately for each Board certification you have received; e.g., ABCP 1990, ABCN 1994)

<table>
<thead>
<tr>
<th>Specialty Board</th>
<th>Year awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board certification 1</td>
<td></td>
</tr>
<tr>
<td>Board certification 2</td>
<td></td>
</tr>
<tr>
<td>Board certification 3</td>
<td></td>
</tr>
</tbody>
</table>

*16) Are you licensed to practice psychology?

- [ ] Yes
- [ ] No

17) If licensed, in what year were you first licensed? (year)

______________________________

*18) With which population do you work?

- [ ] Exclusively or predominately adults
- [ ] Exclusively or predominately children
- [ ] Both adults and children equally

The following sections contain terms with which you may not be familiar. Please refer to Relevant Definitions to familiarize yourself with these terms before continuing.

This document will also be available for you to reference for the remainder of this survey.

The following items relate to your forensic experience with adult populations since 2005. Please limit your responses to this population and time period only.
*19) Since 2005, have you had any experience conducting forensic mental health assessments?

☐ Yes
☐ No

*20) Since 2005, approximately what percentage of your caseload has consisted of adult forensic clients?

☐ Less than or equal to 5%
☐ Greater than 5%

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 21 or Item 22 below regarding your adult forensic caseload, based on the nature of your knowledge of your clinical caseload since 2005.

21) Since 2005, what percentage of your caseload has consisted of adult forensic clients? (percent)

_______________________________________________________________________

OR

Since 2005, what amount of your caseload has consisted of adult forensic clients?

22) Total caseload (number)

_______________________________________________________________________

Forensic clients (number)

The remaining items of this survey relate exclusively to your clinical forensic experience.
23) What level of forensic training do you have? (select all that apply)

☐ Continuing education credits
☐ Graduate degree (related field)
☐ Pre-doctoral internship
☐ Post-doctoral fellowship
☐ Other (please specify): ______________________________

Items 24-26 below refer to your selected responses to Item 23 (above).

Please only respond to the items that correspond with your level of forensic training.

24) If 'yes' to continuing education credits, How many CE credit hours do you complete annually relevant to forensic practice?

_____________________________________________________________________

25) If 'yes' to graduate degree, In which year did you receive your graduate degree?

_____________________________________________________________________

26) If 'yes' to graduate degree, In which field did you receive your graduate degree?

_____________________________________________________________________

27) How many years of forensic experience do you have?

_____________________________________________________________________
28) How would you define yourself professionally? (select all that apply)

☐ Clinical psychologist
☐ Clinical neuropsychologist
☐ Forensic psychologist
☐ Forensic neuropsychologist
☐ Other (please specify):

____________________________________________________________________

The following items relate to your experience with adult clients in civil proceedings only.

Please respond to these items as they relate to your experience since 2005 only.

_____________________________________________________________________

*29) Since 2005, have you had any experience conducting forensic mental health assessments with clients in civil proceedings?

☐ Yes
☐ No

_____________________________________________________________________

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 30 or Item 31 below regarding your civil forensic experience overall, based on the nature of your knowledge of your clinical caseload since 2005.

_____________________________________________________________________

30) Since 2005, what percentage of your overall forensic experience has included conducting forensic mental health assessments with clients in civil proceedings? (percent) (NOTE: This may include civil competency evaluations, personal injury evaluations, or child custody evaluations)

_____________________________________________________________________

OR
Since 2005, what amount of your overall forensic experience has included conducting forensic mental health assessments with clients in civil proceedings? (NOTE: This may include civil competency evaluations, personal injury evaluations, or child custody evaluations)

31) Total forensic clients (number)

Forensic clients in civil proceedings (number)

*32) Since 2005, have you had experience conducting competency evaluations in civil cases? (i.e., cases involving testamentary competency, competency to make personal or financial decisions, and competency to consent to treatment)

☐ Yes
☐ No

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 33 or Item 34 below regarding your experience with competency evaluations (civil), based on the nature of your knowledge of your clinical caseload since 2005.

33) Since 2005, what percentage of your civil forensic experience has included competency evaluations? (percent)

OR

Since 2005, what amount of your civil forensic experience has included competency evaluations?

34) Total civil forensic clients (number)

Civil forensic clients for whom competency evaluations were conducted (number):
35) Where do you have the majority of your experience with civil competency evaluations? (most experience = 1, second most = 2, third most = 3, etc.; none/not applicable = 0)

- Testamentary competency
- Competency to make personal or financial decisions
- Competency to consent to treatment

*36) Since 2005, have you had experience conducting personal injury evaluations?

☐ Yes
☐ No

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 37 or Item 38 below regarding your experience with personal injury evaluations, based on the nature of your knowledge of your clinical caseload since 2005.

37) Since 2005, what percentage of your civil forensic experience has included personal injury evaluations? (percent)

OR

Since 2005, what amount of your civil forensic experience has included personal injury evaluations?

- Total civil forensic clients (number)

38) __________

- Civil forensic clients for whom personal injury evaluations were conducted (number)
*39) Since 2005, have you had experience conducting child custody evaluations?

☐ Yes
☐ No

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 40 or Item 41 below regarding your experience with child custody evaluations, based on the nature of your knowledge of your clinical caseload since 2005.

40) Since 2005, what percentage of your civil forensic experience has included child custody evaluations? (percent)

OR

Since 2005, what amount of your civil forensic experience has included child custody evaluations?

41) Total civil forensic clients (number)

Civil forensic clients for whom child custody evaluations were conducted (number):

The following items relate to your experience with adult clients in criminal proceedings only.

Please respond to these items as they relate to your experience since 2005 only.

*42) Since 2005, have you had any experience conducting forensic mental health assessments with clients in criminal proceedings?

☐ Yes
☐ No
Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 43 or Item 44 below regarding your criminal forensic experience overall, based on the nature of your knowledge of your clinical caseload since 2005.

43) Since 2005, what percentage of your overall forensic experience has included conducting forensic mental health assessments with clients in criminal proceedings? (percent) (NOTE: This may include criminal competency evaluations, insanity evaluations, or sentencing evaluations)

\[
\[
\]

OR

Since 2005, what amount of your overall forensic experience has included conducting forensic mental health assessments with clients in criminal proceedings? (NOTE: This may include criminal competency evaluations, insanity evaluations, or sentencing evaluations)

44)

Total forensic clients (number): \[
\]

Forensic clients in criminal proceedings (number): \[
\]

*45) Since 2005, have you had experience conducting competency evaluations in criminal cases? (i.e., cases involving the capacity to waive Miranda rights, competency to represent one's self, competency to stand trial, competency to plead guilty, competency to testify, competency to be sentenced, and competency to be executed)

☐ Yes
☐ No

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 46 or Item 47 below regarding your experience with competency evaluations (criminal), based on the nature of your knowledge of your clinical caseload since 2005.
46) Since 2005, what percentage of your criminal forensic experience has included competency evaluations? (percent)


OR

Since 2005, what amount of your criminal forensic experience has included competency evaluations?

Total criminal forensic clients (number)

47) ____________________________

Criminal forensic clients for whom competency evaluations were conducted (number)

48) Where do you have the majority of your experience with criminal competency evaluations? (most experience = 1, second most = 2, third most = 3, etc.; none/not applicable = 0)

Capacity to waive Miranda rights (including competency to confess and competency to waive the right of an attorney)

Competency to represent one's self

Competency to stand trial

Competency to plead guilty

Competency to testify

Competency to be sentenced

Competency to be executed

*49) Since 2005, have you had experience conducting insanity evaluations?

☐ Yes

☐ No
Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 50 or Item 51 below regarding your experience with insanity evaluations, based on the nature of your knowledge of your clinical caseload since 2005.

50) Since 2005, what percentage of your criminal forensic experience has included insanity evaluations? (percent)

OR

Since 2005, what number of your criminal forensic experience has included insanity evaluations?

51) Total criminal forensic clients (number): 
Criminal forensic clients for whom insanity evaluations were conducted (number):

*52) Since 2005, have you had experience conducting sentencing evaluations?

Yes
No

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 53 or Item 54 below regarding your experience with sentencing evaluations, based on the nature of your knowledge of your clinical caseload since 2005.

53) Since 2005, what percentage of your criminal forensic experience has included sentencing evaluations? (percent)
OR

Since 2005, what amount of your criminal forensic experience has included sentencing evaluations?

Total criminal forensic clients (number)

54)

Criminal forensic clients for whom sentencing evaluations were conducted (number)

Clinicians keep track of their caseloads in a variety of ways.

Please respond to either Item 55 or Item 56 below regarding testifying in court for both civil and criminal cases, based on the nature of your knowledge of your forensic caseload since 2005.

55) Since 2005, in what percentage of your total forensic cases (both civil and criminal) have you been asked to testify in court? (percent)

OR

56) Since 2005, in how many of your total forensic cases (both civil and criminal) have you been asked to testify in court?

Total forensic cases (number)

Cases in which you were asked to testify in court (number)

57) Are you aware of the statutes governing the admissibility of expert testimony in your state or jurisdiction of practice (e.g., Daubert, Frye, etc.)?

☐ Yes

☐ No
58) Regarding your forensic clients since 2005, are you aware of times when the admissibility of your testimony was challenged?

☐ Yes
☐ No

59) Regarding your forensic clients since 2005, which type of challenge to admissibility have you experienced? (NOTE: Please refer to the relevant definitions available through the link above, under "Challenges of admissibility")

☐ Predominantly full challenges (i.e., challenges questioning the inclusion of an expert witness in the case)
☐ Predominantly partial challenges (i.e., challenges including only sections of the evidence provided by an expert witness in a case)
☐ Both full and partial challenges equally

Please respond to either Item 60 or Item 61 below regarding all challenges to admissibility in your civil cases only, based on the nature of your knowledge of your forensic caseload since 2005.

60) Since 2005, in how many of your civil cases was your testimony challenged? (percent) (If you are not sure, or if this does not apply to you, please respond "XX")

   

OR

Since 2005, in what number of your civil cases was your testimony challenged? (If you are not sure, or if this does not apply to you, please respond "XX" in the boxes below)

61) Total civil cases (number)

   

Civil cases in which your testimony was challenged (number)

   
Please respond to either Item 62 or Item 63 below regarding successful challenges to admissibility in your civil cases only, based on the nature of your knowledge of your forensic caseload since 2005.

62) How many of these challenges were successful? (percent) (If you are not sure, or if this does not apply to you, please respond "XX")

[Blank]

OR

What number of these challenges were successful? (If you are not sure, or if this does not apply to you, please respond "XX" in the boxes below)

63) Civil cases in which your testimony was challenged (number)

[Blank]

Successful challenges (number)

[Blank]

Please respond to either Item 64 or Item 65 below regarding all challenges to admissibility in your criminal cases only, based on the nature of your knowledge of your forensic caseload since 2005.

64) Since 2005, in how many of your criminal cases was your testimony challenged? (percent) (If you are not sure, or if this does not apply to you, please respond "XX")

[Blank]

OR
Since 2005, in what number of your criminal cases was your testimony challenged? (If you are not sure, or if this does not apply to you, please respond "XX" in the boxes below)

65) Total criminal cases (number)

Criminal cases in which your testimony was challenged (number)

Please respond to either Item 66 or Item 67 regarding successful challenges to admissibility in your criminal cases only, based on the nature of your knowledge of your forensic caseload since 2005.

66) How many of these challenges were successful? (percent) (If you are not sure, or if this does not apply to you, please respond "XX")

OR

What number of these challenges were successful? (If you are not sure, or if this does not apply to you, please respond "XX" in the boxes below)

67) Criminal cases in which your testimony was challenged (number)

Successful challenges (number)

Thank you!

You have successfully completed this survey.
We appreciate you taking the time to aid us in our research.

If you have any comments or concerns, please contact Casey LaDuke at casey.laduke@drexel.edu or (802) 316-7174, or contact David DeMatteo, JD, PhD, at david.dematteo@drexel.edu or (215) 762-8342.
Appendix D: Definitions of Relevant Terms

Please familiarize yourself with these terms and definitions before continuing, and refer back to these definitions if you have any questions while completing the survey.

**Forensic context**: Any setting in which a clinical mental health professional has significant interaction with the justice system (e.g., conducting mental health assessments with clients as part of an ongoing legal action)

**Forensic mental health assessment**: (1) a mental health evaluation that is performed as part of the legal decision making process, for the purpose of assisting the legal decision maker or one of the litigants using relevant clinical and scientific data; (2) an evaluation that pertains to, or is employed with, the stated intention of being used in legal proceedings

**Forensic clients**: any individual encountered during one’s clinical practice who (a) is currently undergoing legal action in civil or criminal court, and (b) for whom the clinical services provided by the mental health professional are directly linked to these legal proceedings; typically these “clients” will be referred by the retaining attorney or by the court system

**Clinical forensic experience**: all experience conducting forensic mental health assessments and working with forensic clients in a clinical context; may also including time committed to training in the field of clinical forensic psychology, or related fields

**Civil proceedings**: all legal actions taking place within the jurisdiction of civil court, including such legal questions as competency, personal injury, and child custody

**Competency evaluations (civil)**: evaluations related to the legal question of competency, defined as having sufficient capacity or ability to understand the nature and effects of one's acts; in civil proceedings this may include testamentary competency, competency to make personal or business decisions in guardianship cases, contractual competency, and competency to consent to treatment

**Personal Injury evaluations**: evaluations of an individual’s purported injuries and related cognitive or behavioral deficits, in which the injured party is seeking damages (e.g. financial compensation) from another party potentially at fault for the alleged injury

**Child custody evaluations**: evaluations during the process of custody disputes (typically included in divorce proceedings) related to the behaviors and capacities of parents, the specific needs of children involved, and how well the parents’ behaviors and capacities meet the needs of the children involved
Criminal proceedings: all legal actions taking place within the jurisdiction of criminal court, including such legal questions as competency, mental state at the time of the offense, and concepts relating to sentencing

Competency evaluations (criminal): see definition above; in criminal proceedings this may include competency to plead guilty, competency to stand trial, competency to confess, competency to waive Miranda rights, competency to testify, competency to be sentenced, and competency to be executed

Insanity evaluations: evaluations related to the legal question of insanity, which carries different definitions in each state but is typically defined as an inability to appreciate, as a result of a severe mental disease or defect, the nature and quality or the wrongfulness of one’s actions; also commonly referred to as mental state at the time of the offense

Sentencing evaluations: evaluations related to the sentencing phase of the trial, in which mitigating or aggravating psychological information is included for the court to consider in sentencing; commonly such evaluations include assessments related to moral culpability, diminished capacity, violence risk, and amenability to treatment

Testify: the process by which expert witnesses are requested to offer their evidence verbally, either in depositions or in court; this is typically done in addition to the written report, and may not occur during all cases

Challenges of admissibility: the process by with the opposing party in a legal proceeding may request further inquiry regarding the admissibility of the evidence (report or testimony) provided by the expert witness; that is, whether this evidence is admissible within the case, as governed by the statutes or case law adopted by the state or federal jurisdiction; this may include full challenges (i.e., challenges questioning the inclusion of an expert witness in the case) or partial challenges (i.e., challenges including only sections of the evidence provided by an expert witness in a case, such as evidence suggesting a causal link between head injury and neuropsychological functioning)

Successful challenges of admissibility: challenges of admissibility that result in the evidence provided by the expert witness to be barred as evidence within the case, based on the statutes or case law governing the admissibility of evidence or the definition of expert testimony within the state or federal jurisdiction