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*Annual Review of Law and Social Science*

# The Law Meets Psychological Expertise: Eight Best Practices to Improve Forensic Psychological Assessment

Tess M.S. Neal,[1,2,*] Kristy A. Martire,[2,*] Jennifer L. Johan,[2] Elizabeth M. Mathers,[1] and Randy K. Otto[3]

[1]New College of Interdisciplinary Arts & Sciences, Arizona State University, Phoenix, Arizona, USA; email: tess.neal@asu.edu, emather2@asu.edu

[2]School of Psychology, The University of New South Wales, Sydney, New South Wales, Australia; email: k.martire@unsw.edu.au, j.l.grant@unsw.edu.au

[3]Department of Mental Health Law and Policy, University of South Florida, Tampa, Florida, USA; email: rotto@usf.edu

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## Keywords

forensic, law, psychological evaluation, psychological assessment, best practices, psychology

## Abstract

We review the state of forensic mental health assessment. The field is in much better shape than in the past; however, significant problems of quality remain, with much room for improvement. We provide an overview of forensic psychology's history and discuss its possible future, with multiple audiences in mind. We distill decades of scholarship from and about fundamental basic science and forensic science, clinical and forensic psychology, and the law of expert evidence into eight best practices for the validity of a forensic psychological assessment. We argue these best practices should apply when a psychological assessment relies on the norms, values, and esteem of science to inform legal processes. The eight key considerations include (*a*) foundational validity of the assessment; (*b*) validity of the assessment as applied; (*c*) management and mitigation of bias; (*d*) attention to quality assurance; (*e*) appropriate communication of data, results, and opinions; (*f*) explicit consideration of limitations and assumptions; (*g*) weighing of alternative views or disagreements; and (*h*) adherence with ethical obligations, professional guidelines, codes of conduct, and rules of evidence.

## INTRODUCTION

From the perspective of the law, psychological expertise can be valuable in numerous ways. In broad terms, forensic psychological assessments seek to measure, predict, or describe an individual's emotional, behavioral, or cognitive functioning as it affects some legal issue in dispute. Psychologists' expert opinions about relevant psycho-legal issues, and the data underpinning those opinions, are communicated to the court through reports and/or testimony to assist the trier of fact in reaching a better-informed decision. Although forensic psychology practice has advanced over the years, and the evidence that psychologists can present in court has improved in quality, not all psychologists rely on high-quality methods. And unfortunately, the courts have struggled to hold psychologists and other mental health professionals accountable.

We draw upon scholarship from multiple domains and sources of information to identify contemporary best practices for forensic psychologists. The current state of forensic psychological assessment is, on the whole, better than in the past as the field and its scientific underpinnings have evolved. Still, significant variation in quality could be improved by the actions of both psychologists and the courts. As such, we briefly overview the history and possible trajectory of the field and also offer suggestions for improvement. Specifically, we distill eight best practice principles for forensic psychological assessments to aid psychologists in bringing better evidence to court, but also to aid courts in holding psychologists accountable for the quality of their evidence.

**Forensic psychological assessment:** a form of psychological assessment undertaken in a legal context to address legal, contractual, or administrative matters

**Forensic psychology:** a psychological specialty in which basic and applied psychological science or practice helps resolve legal, contractual, or administrative matters

**Best practice:** an aspirational and optimal, but unenforceable, level of practice that exceeds the minimum standards of practice

**Standards of practice:** minimum level of practice required in a field, such as laid out in legal or administrative rules and ethics codes

**Psychological assessment:** an evaluation conducted to assess a person's prior, current, or future emotional, behavioral, or cognitive functioning

**Psychometric tools:** an approach to assess or measure people's emotional, behavioral, or cognitive functioning employing varying degrees of structure and standardization

## THE EVOLUTION OF FORENSIC PSYCHOLOGICAL ASSESSMENT

In the late 1800s, psychology emerged as a distinct academic discipline from anthropology, philosophy, and medicine. It emerged initially as a basic science, with applied elements emerging later. By 1908, psychologists were applying the young field of psychology in forensic settings (e.g., Munsterberg 1908), but it was not until the 1960s that modern forensic psychology began to take shape (see Neal 2018 for a description of the historical evolution of forensic psychology).

Since psychologists began applying their knowledge in legal settings, they have been subjected to well-founded criticisms. Those criticisms continued into the modern era, but typically on the basis that the field can improve as it grows (e.g., Faust & Ziskin 1988, Grisso 1987, Otto & Heilbrun 2002). And the field has grown steadily: As of 2017, 7% of the licensed psychologists in the United States practiced forensic psychology (Lin et al. 2017), and an exponential increase over the past few decades in the use of psychological assessment evidence in litigation has been documented (King & Neal 2022).

One core element of psychology since its founding in the 1800s has been the field's focus on indexing people's emotional, behavioral, and cognitive functioning (Galton 1879). From these roots, modern psychometric theories evolved into a set of scientific rules for establishing and evaluating the usefulness of psychological measurements (Wasserman & Bracken 2013). Today tens of thousands of psychometric tools exist to measure psychological attributes like psychopathology, personality, intelligence, and risk for violence, among others (see, e.g., Carlson et al. 2021). These tools vary in structure and standardization and serve different functions depending on the approach adopted by a psychologist. Psychologists conducting forensic evaluations often use these tools to structure their evaluations and gather data.

## MODERN FORENSIC PSYCHOLOGY

Forensic psychology is a psychological specialty involving the use of psychological science in a legal, contractual, or administrative proceeding (APA 2013a, Neal 2018). In some legal disputes, psychologists are asked to assess persons whose emotional, behavioral, or cognitive functioning is

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somehow relevant. It is assumed that, because of psychologists' specialized knowledge and training, they can provide information and opinions to the decision maker (e.g., judge, hearing officer, or jury) that they would not otherwise have, allowing for more informed, and presumably more accurate, decisions. Dozens of types of psycho-legal questions are referred to psychologists, and the frequency of these different referral questions varies widely (Melton et al. 2017, Neal & Grisso 2014a).

Psychologists typically conduct forensic evaluations in response to requests from criminal and civil courts, administrative bodies, and attorneys (APA 2013a). The requests vary regarding the time period of interest. In some cases, the focus of the psychologist's evaluation is the person's functioning at some time in the past (e.g., evaluation of a deceased person's testamentary capacity), in some it is the person's functioning at the current time (e.g., evaluation of a criminal defendant's competence to stand trial), and in some it is the person's functioning at some time in the future (e.g., evaluation of a convicted sex offender's risk for reoffending) (Heilbrun et al. 2009).

**Bias:** any systematic factor that determines judgment other than the truth

**Forensic science:** a transdisciplinary field involving the generation of scientific knowledge and the application of science to assist matters of law

## LEGAL ASSESSMENT OF EXPERT EVIDENCE QUALITY

The best practices we outline in this review are informed by considerations the law uses to evaluate the quality of expert evidence. Legal systems struggle to design expert evidence admissibility rules that effectively screen out junk science while still allowing sound evidence to inform legal proceedings—in part because different expert domains have different standards and norms for what constitutes acceptable practice. These challenges have led legal systems to experiment with evidence admissibility rules, which aim to help judges and courts discern the quality of evidence proffered by experts. In most common law countries, increasingly rigorous evidence reliability rules have been introduced to regulate complex expert opinion evidence (Edmond 2011), and revisions to these rules continue to be considered to address myriad problems with expert evidence (Judic. Conf. US 2021, Lander 2018).

Generally speaking, in North America, judges are expected to consider the reliability (i.e., validity) of expert evidence before allowing it into court. In practice, these evidence admissibility evaluations usually occur only when requested by one of the parties. In those evaluations, judges can consider whether the method used by the expert has ever been tested, whether it has been subjected to peer review, its error rate, and whether it is generally accepted by other experts in the field [e.g., *Daubert v. Merrell Dow Pharmaceuticals* (1993), *Frye v. United States* (1923), *R v. J.-L.J.* (2000)]. Considerations like these can inform assessment of the quality of experts and their methods. Notably, similar factors have been identified to aid legislators in considering the integrity of science, as well as other factors relevant to best practice in science, such as accountability to ethical principles, the appropriateness of an expert's qualifications, and potential for bias (Nelson & Lubchenco 2022). We offer suggestions inspired by these science-in-law-related sources to aid in the production and evaluation of forensic psychological assessment evidence.

## WHAT IS FORENSIC SCIENCE, AND HOW IS IT RELEVANT TO PSYCHOLOGICAL ASSESSMENTS?

The US National Research Council (NRC 2009) and President's Council of Advisors on Science and Technology (PCAST 2016) conceptualize forensic science as a transdisciplinary field that involves the generation of scientific knowledge and the application of science to assist matters of law. This definition applies to forensic psychological assessments because, in general, psychology endorses the norms and values of science and benefits from the esteem given to scientific endeavors (APA 2010, Koch & Leary 1992) (see the sidebar titled Is Psychology a Science?). There is also strong agreement that, when completing forensic assessments, psychologists should apply

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## IS PSYCHOLOGY A SCIENCE?

In the United States, the National Science Foundation classifies psychology as a Science, Technology, Engineering, and Mathematics (STEM) discipline, but other federal agencies, such as the Department of Homeland Security and Immigration and Customs Enforcement, use a narrower definition that excludes psychology. Canada's federal funding agencies classify psychology with other social sciences and humanities as distinct from the natural sciences and engineering. These policy decisions have implications for research funding and workforce development, among other things. For a critical perspective on the public's perception of psychology as a science, see Lilienfeld (2012).

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**Foundational validity:** whether a tool or method is, in principle, accurate, repeatable, and reproducible

**Accuracy:** how often a method or subjective reasoning process results in a correct opinion or conclusion

**Repeatability:** probability that a method/practitioner consistently produces the same results when used to analyze the same materials on subsequent occasions

**Reproducibility:** probability that a method consistently produces the same results when used by different practitioners to analyze the same materials

**Validity as applied:** whether a foundationally valid tool or method is, in practice, accurate, repeatable, and reproducible; established via field validity and proficiency

scientific methods and knowledge (e.g., Heilbrun & Brooks 2010, Milchman 2015, Washburn et al. 2019).

Yet, there are well-documented concerns about many aspects of standard and accepted practices in the forensic sciences in general (e.g., Campbell 2011; Edmond et al. 2016b; Goudge 2008; Lang 2015; NRC 2009; PCAST 2016; Sci. Technol. Select Comm. 2019; Taylor et al. 2012, 2020). This attention has resulted in detailed consideration of best practices and reforms in forensic science that we draw upon. Although no government or international science institutes have expressed the same concerns about forensic psychological assessments that have been expressed about forensic science more broadly, the authoritative reports that do exist about forensic science readily generalize to forensic psychology. Many forensic psychology practitioners and scholars have noted this fact (e.g., Guarnera et al. 2017, Heilbrun & Brooks 2010, Martire & Edmond 2017, Neal et al. 2019, Zapf & Dror 2017).

Consequently, we use the framework provided by the NRC (2009) and the PCAST (2016) to describe and provide a benchmark for best practice forensic psychological assessments. This framework includes the core components of validity identified by PCAST: foundational validity (accuracy, repeatability, and reproducibility) and validity as applied (proficiency and field validity). We also consider additional issues identified by the NRC and others commenting on best practices in the forensic sciences and forensic psychological assessment.

It is our view that when providing a psychological assessment in a legal context that relies on the norms, esteem, and values of science (Brook et al. 2021, Mnookin et al. 2011), the eight best practices for forensic psychological science we describe here should apply. We acknowledge that views about the acceptability of this approach may differ. Of note, other mental health professionals sometimes provide forensic assessments, and although the best practices we outline also apply for evaluating the quality of these assessments, specific ethical requirements, practice guidelines, and proficiencies may differ across professions. However, even when a practitioner does not adhere closely to scientific conventions (for example, psychiatrists may identify more with experience- than scientifically based expertise but still offer mental health assessment services to the law; Grisso 1993), we argue these best practices are still relevant (see the sidebar titled Evidence Rules Apply to Science and Nonscience Experts).

## LOOKING TO THE FUTURE: EIGHT BEST PRACTICES TO IMPROVE FORENSIC PSYCHOLOGICAL ASSESSMENTS

The future of forensic psychology may be strengthened through greater adherence to high-quality practices. Well-informed courts could also look to principles like these to hold psychologists accountable for the quality of their work. And psychologists conducting forensic evaluations might

## EVIDENCE RULES APPLY TO SCIENCE AND NONSCIENCE EXPERTS

As legal scholar Saks (2000, p. 880) noted, "Hauling down the science flag and hoisting the nonscience flag does not exempt expert evidence from *Daubert* scrutiny." This assertion is based on the US Supreme Court's decision in *Kumho Tire Co. v. Carmichael* (1999, pp. 147–49), which states,

> The initial question before us is whether [*Daubert*'s] basic gatekeeping obligation applies only to "scientific" testimony or to all expert testimony. We, like the parties, believe that it applies to all expert testimony. . .It would prove difficult, if not impossible, for judges to administer evidentiary rules under which a gatekeeping obligation depended upon a distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. There is no clear line that divides the one from the others...We conclude that *Daubert*'s general principles apply. . .to all such matters.

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look to aspirational best practice standards to elevate their routine practice beyond the minimum standards of practice for their jurisdiction (e.g., as part of enforceable ethics codes; APA 2017, APS 2007, CPA 2017). Examples of aspirational guidelines have been proposed by the American Psychological Association and others (APA 2020, 2021; CPA 2021), along with various guidelines for legally relevant forensic work in general (APA 2013a, APS 2014), as well as for specific tasks and referral contexts (e.g., APA 2009, 2013b; CPA 2013). In addition, a 20-volume series, Best Practices in Forensic Mental Health Assessment, offers a foundation for best practices in the field (Heilbrun et al. 2009; see also Packer & Grisso 2011). The series was curated with attention to the law, ethics, science, and practice. But as with any consensus-derived standards, they are only as good as consensus in a field.

In the following section, we define and discuss the core components of eight best practices to consider when evaluating any particular forensic psychological assessment. Although there are likely to be dissenting views about some of the considerations we identify, many of the issues we raise have been posed by others in articles and manuals over decades of critical scholarship relating to psychological opinions in forensic contexts (Faust & Ziskin 1988, Grisso 1987, Heilbrun 1992, McCann et al. 2015, Ziskin 1970). Similar questions have also been raised to help evaluate the quality of traditional forensic science opinions (Edmond et al. 2014, 2016a,b, 2019). Accordingly, our views embody a well-established perspective on the evaluation of forensic psychological assessments.

Our engagement with multiple literatures, including fundamental basic science in psychology, basic and applied clinical and forensic psychology, basic and applied forensic science, and law, suggests that the following factors be used to evaluate the rigor and value of a forensic psychological assessment: (*a*) foundational validity of the assessment; (*b*) validity of the assessment as applied; (*c*) management and mitigation of bias in the assessment; (*d*) attention to quality assurance; (*e*) appropriate communication of data, results, and opinions; (*f*) explicit consideration of limitations and assumptions of the assessment; (*g*) weighing of alternative views or disagreements; and (*h*) adherence with ethical obligations, codes of conduct, and rules of evidence.

**Proficiency:** a practitioner's ability to apply a foundationally valid tool or method to achieve the expected outcome (e.g., an accurate opinion)

**Field validity:** whether a tool or method is accurate, repeatable, and reproducible under routine practice conditions typical of real-world work

**Quality assurance:** a management method involving administrative and procedural standards to prevent mistakes and avoid problems in service or product delivery

## Foundational Validity

According to PCAST (2016, p. 4), the foundational validity of a method or process requires

> that it be shown, based on empirical studies, to be repeatable, reproducible, and accurate, at levels that have been measured and are appropriate to the intended application. Foundational validity, then, means that a method can, in principle, be reliable.

This definition suggests we consider the repeatability, reproducibility, and accuracy of the method the practitioner uses when forming their opinion. Other scholars offer similar suggestions (Borsboom et al. 2004, Clark & Watson 2019, Cronbach & Meehl 1955).

Importantly, no standardized method is used by psychologists or other practitioners who undertake assessment tasks. Although particular tests, such as measures of intelligence, often have standardized methods, the bigger assessment picture is unstandardized in the field, such as which tests to use (if any, including which of several different tests to use if a clinician is doing an assessment of a person's intelligence), and in what order tests should be used if multiple tests are selected. Professional bodies, scholars, and practitioners have proposed several guidance documents and practice approaches for forensic psychological assessments; however, these guides tend to be nonspecific and aspirational; are often not endorsed by professional organizations; and are intentionally not exhaustive, mandatory, or enforceable (APA 2013a, Heilbrun & Brooks 2010).

Instead, practitioners are left to use their own preferred method to define, analyze, synthesize, and combine data; to make inferences; and ultimately, to form their conclusions, as long as they adhere to minimum standards of practice (Faust & Ziskin 1988). Psychologists' choices of assessment tools, which combination of them to use, and what collateral information to gather vary widely between and within assessments (Neal & Grisso 2014a); however, the tremendous diversity of approaches is a problem for establishing foundational validity (AERA & NCME 2014). Moreover, the validity of few, if any, of these various combinations of approaches has been subjected to end-to-end evaluation (Neal et al. 2019). Thus, their accuracy, repeatability, and reproducibility are largely unknown.

The picture is somewhat different regarding the foundational validity of specific assessment tools practitioners sometimes use to structure and inform their professional judgment. Many, but not all, psychological assessment tools have been tested to establish some aspect(s) of their foundational validity (see e.g., Neal et al. 2019). Since 1954, the Standards for Educational and Psychological Testing (AERA & NCME 2014) have provided authoritative guidance on test development and evaluation in terms of reliability and validity.

Psychometric and technical properties are often reported in specific test manuals; in the primary research literature; and in secondary aggregated compendiums and reviews, such as the Mental Measurement Yearbook (Carlson et al. 2021) and the Compendium of Neuropsychological Tests (Strauss et al. 2006). This means a wealth of knowledge is available about aspects of the foundational validity of many tools psychologists routinely use when conducting forensic evaluations. But, importantly, the performance of many tools is either unknown or inadequate. Indeed, Neal et al. (2019) found that only approximately 40% of tools psychologists reported using in legal cases have favorable measurement properties.

Like calls for forensic science to become more scientific (Bell et al. 2018, Mnookin et al. 2011), there have been calls for forensic psychology to transition to more evidence-based (e.g., Archer et al. 2016) and science-based (e.g., Washburn et al. 2019) practices. Until these recommendations are met, it is important to assess the foundational validity of a psychological opinion.

## Accuracy

All subjective, or judgment-based, procedures are susceptible to error. In simple terms, accuracy is how often a method or subjective reasoning process results in a correct opinion or outcome. To assess the accuracy of a forensic psychological assessment, it is possible to look at whether legal factfinders agree with the practitioners' opinion. But this approach involves soft criteria—meaning accuracy is inferred from agreement rather than in reference to hard criteria, such as known or knowable objective ground truth. Reliance on factfinder agreement is therefore suboptimal.



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There is presently no accepted objective ground truth for most forensic psychological assessments, and thus no real way to know whether or how accurate they are (but see Mossman et al. 2010). However, assessments of current functioning (e.g., competence to stand trial) are assumed to be more accurate than assessment of past states (e.g., mental state at time of offense) or future states (e.g., violence risk; Melton et al. 2017). And structured actuarial methods with explicit decision rules, statistical integration of data, and little room for discretion are generally more accurate than unstructured clinical judgment methods (Ægisdóttir et al. 2006, Dawes et al. 1989, Hanson & Morton-Bourgon 2009).

**Generalizability:** the extent to which results or findings obtained from one group of people or situations are applicable more broadly

The Standards for Educational and Psychological Testing note there must be appropriate evidence to show the reliability/precision of the interpretations that follow from each possible score on a psychometric test (AERA & NCME 2014). Manuals for specific structured assessment tools generally include some information to establish the accuracy of a particular test when administered under ideal or controlled conditions. However, this information about accuracy must be interpreted considering aspects of the tool design. For example, there is no guarantee that the adequacy of a psychometric tool will generalize from the norming sample or context to another sample or context.

This issue of generalizability has been considered by some of the highest courts in Australia [*Director of Public Prosecutions for Western Australia v Mangolamara* (2007)] and Canada [*Ewert v. Canada* (2018)]. Such concerns also apply when a particular test or method is used to answer a forensic question for which the test was not explicitly designed or validated. For example, concerns have been raised about using a tool designed to measure personality features associated with psychopathy—the Psychopathy Checklist-Revised (Hare 1991)—to make life-or-death recommendations in capital sentencing proceedings based on an individual's propensity for violence in custody (DeMatteo & Olver 2022). Modifications to testing procedures (e.g., administration with/without rest breaks or in group/individual testing sessions) can also affect the generalizability of a test. As a result, the accuracy of a psychological opinion, or psychometric score, cannot be assumed.

## Repeatability (Intra-Rater Reliability)

Repeatability refers to the extent to which a method consistently produces the same results when used by the same person under the same circumstances. Within psychology, this is commonly referred to as intra-rater reliability (AERA & NCME 2014). All else being equal, the more unstructured, subjective, adaptable, and intuitive the method, the lower the chance that it will produce the same result when repeated on another occasion. However, in practice, data about repeatability are difficult to obtain because it is unlikely a practitioner will forget an earlier case to approach it independently a second time—and even if they could, the circumstances and some mental states of the evaluee also can change over time. Thus, to date there is little if any empirical evidence about the repeatability of psychologists' opinions (Dror & Murrie 2018).

## Reproducibility (Inter-Rater Reliability)

Reproducibility concerns whether an approach consistently produces the same results when used by different people under the same circumstances. Psychologists commonly refer to this as inter-rater reliability (AERA & NCME 2014). If a psychological assessment method does not lead to consistent conclusions when used by different practitioners, then the foundational validity of the opinion is undermined (Faust & Ziskin 1988). Again, the more unstructured, subjective, adaptable, and intuitive the method, the less likely it is that two practitioners will come to the same results and conclusions. This concern is reinforced by clear evidence that practitioners

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use different thresholds for determining a range of forensically relevant outcomes (Boccaccini et al. 2008, Murrie & Warren 2005, Murrie et al. 2008). Factors such as task difficulty, limited training and certification, unstandardized methods, individual practitioner differences, and bias may contribute to inconsistency between practitioners' judgments (Guarnera et al. 2017, Murrie et al. 2013, Zapf & Dror 2017).

## Validity as Applied

Validity as applied is the accuracy, repeatability, and reproducibility of a method in practice (NRC 2009, PCAST 2016). In particular, "the forensic examiner must. . .be capable of reliably applying the method and must actually have done so" (PCAST 2016, p. 6). Validity as applied can be approached in two ways: via the practitioner's proficiency and/or the field validity of their assessment tools and approaches.

## Proficiency

Proficiency refers to a practitioner's ability to apply a foundationally valid tool or method to come to the expected outcome for the method itself (and ultimately, an accurate opinion). If a practitioner is not able to do so, then they are not proficient in applying the method, and the obtained results are not valid. Furthermore, if a practitioner's performance is not materially better than a lay person's (e.g., not more accurate than that of novices), it may be a mistake to give weight to their opinions (Martire & Edmond 2017, Towler et al. 2018). Indeed, their opinions may not satisfy expert admissibility rules in many jurisdictions.

Proficiency is often assumed by virtue of formal education, certifications, qualifications, memberships, and continuing professional development (Martire & Edmond 2017, PCAST 2016). However, the relationship between proficiency and these credentials is imperfect and often unknown. Some credentials require demonstrations of relevant proficiencies (e.g., objectively correct administration of particular tools), but many do not. For example, the mere fact of completing a continuing education course does not guarantee competent, proficient, or improved practice (Miller et al. 2017, Neimeyer et al. 2009, Washburn et al. 2019).

Just as it is difficult to establish foundational accuracy, it is difficult to establish the proficiency of practitioners completing forensic psychological assessments. This is because psychologists often make predictions about future events and tend not to track or have access to information about relevant outcomes, and their predictions sometimes affect assessment of those very predictions (e.g., if a person is hospitalized as a result of a suicide risk assessment, they may or may not have attempted suicide without the intervention). Nevertheless, the accuracy of many predictions can be assessed (see Tetlock 2009). Failing that, information about consistency and bias (Dror & Murrie 2018), or performance on tasks replicating case work (Guarnera et al. 2017), may be used to estimate proficiency. However, direct demonstrations of proficiency are preferable to indirect estimates obtained from these proxy measures.

In general, feedback about the accuracy of judgments is a vital component of the corrective mechanisms necessary to develop proficiency (Shanteau 1992). Therefore, performance that occurs in environments without routine, systematic, and objective feedback is less likely to be accurate than performance in environments where high-quality feedback is readily available (Kahneman & Klein 2009, Shanteau 1992). An extensive body of research also suggests experience is not sufficient assurance that a practitioner will be highly skilled (Cassidy & Buede 2009, PCAST 2016, Tetlock 2009). Therefore, one may wish to exercise caution in relying on a practitioner's statements about years of experience when that experience does not routinely include the feedback necessary to facilitate effective correction.



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## Field Validity

Field validity relates to the performance of a tool or method outside the laboratory under practice conditions typical of work in the real world (Guarnera et al. 2017), where information may be inaccurate or incomplete, assessment conditions may be suboptimal, cases may be more complex or confronting, and time or financial resources may be limited.

Overall, little empirical evidence is available regarding the field validity of the methods used by practitioners to produce forensic psychological opinions, but what there is suggests it is likely to be modest (Edens & Boccaccini 2017). There is also little available evidence that the information about foundational validity of psychological assessment tools generalizes to the field. For example, studies examining the reproducibility of real-world forensic psychological opinions typically find the agreement between examiners is lower than desirable and lower than in validation studies and test manuals (Acklin et al. 2015, Edens et al. 2015, Gowensmith et al. 2017, Guarnera & Murrie 2017).

Beyond the field validity issues associated with individual psychometric tools is the issue of tool combination. Relatively robust psychometric tools are routinely combined with other assessment tools in countless unstudied ways to form assessment batteries (Neal & Grisso 2014a). These batteries are highly individualized and generally require significant inferential leaps to bridge the gap between what the psychometric tool was designed to measure and the referral question (AERA & NCME 2014). The extent to which these inferential leaps result in accurate, repeatable, and reproducible answers to forensic questions is largely unknown.

## Management and Mitigation of Bias

When integrating information to make judgments and decisions, people—including forensic experts reaching professional judgments—are thought to rely on both lower- and higher-effort thinking processes (Evans & Stanovich 2013, Kruglanski & Gigerenzer 2011). Lower-effort processes are quick, happen with little (if any) awareness or intention, and generally help people function in a world full of information. Higher-effort processes are deliberate: They require deliberation and attention and take more time. These varying depths of cognitive processes work in tandem to help humans make sense of and integrate information to reach conclusions (McKinstry et al. 2008). Bias—any systematic factor that affects a judgment other than the truth (West & Kenny 2011)—can enter into judgments through either of these thinking processes (Neal et al. 2022a).

Bias is traditionally conceptualized in law as an intentional behavior, such as a person aiming for a particular decision because they have an interest in, or will obtain benefit from, a specific outcome [Edmond & Martire 2019, *White Burgess Langille Inman v. Abbott and Haliburton Co.* (2015)]. Although these high-effort, purposeful thinking–related biases can and do emerge among experts, the more common and insidious way bias enters forensic evaluations is through low-effort and low-attention thinking processes (Neal & Grisso 2014b, Neal et al. 2022a). These intuitive thinking styles are subtle, powerful, and pervasive (Featherston et al. 2020) and unintentionally shape perceptions, problem solving, and decision making (Cooper & Meterko 2019) but are not the result of dishonesty or inadequate training (Edmond et al. 2019, Neal & Grisso 2014b).

Although entirely impartial evaluations are an aspirational goal, bias has been identified as a particular concern with forensic opinions (NRC 2009, PCAST 2016). There is no evidence that forensic opinions provided by psychologists are exempt from bias (Dror & Murrie 2018, Murrie & Boccaccini 2015). Indeed, given that forensic psychology practitioners collect and incorporate extensive collateral and contextual information (Ackerman 2006) and few standardized procedures guide the field (Neal & Grisso 2014a), forensic psychology opinions are perhaps particularly vulnerable to biasing effects.

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Several empirical studies that reinforce concerns about bias in forensic psychological assessments were summarized in recent a systematic review (Neal et al. 2022a). Yet, there is no clear evidence that practitioners routinely take the quality assurance steps necessary to manage the potential impacts of bias in their work, even though many strive for objective and unbiased practice (Milchman 2011, Neal & Brodsky 2016), and some acknowledge the existence of bias risk (MacLean et al. 2019, Zapf et al. 2018).

Practitioners could employ a range of strategies to insulate their decisions from possible biasing contamination, for instance, through embracing conditions that introduce structure and reduce discretion in their decision process (e.g., using actuarial or structured clinical judgment methods rather than unstructured methods; Guarnera et al. 2017) and seeking to limit access to biasing information, such as through blinding or linear sequential unmasking procedures when known biasing potential is present (Neal et al. 2022a). They can employ other strategies as well, such as stating rival hypotheses and counterfactuals (Zapf & Dror 2017), seeking independent peer review (Ballantyne et al. 2017), and engaging in archival self-monitoring (Gowensmith & McCallum 2019). However, many practitioners report using ineffective strategies like introspection, and many consider themselves immune to bias (Neal & Brodsky 2016).

## Quality Assurance

Quality assurance involves administrative and procedural standards to prevent mistakes and avoid problems in service or product delivery (Int. Organ. Stand. 1994). It entails defining standards, systematic monitoring and measurement, comparison against an ideal or goal, and an associated feedback loop (Fox 1993). Although many industries now rely on quality assurance models (Franceschini et al. 2006), there are not yet national or international quality assurance standards in forensic psychology. Scholars have written about the need to improve the quality of forensic assessment practices (e.g., Heilbrun & Brooks 2010), along with particular steps that could be taken toward quality assurance (e.g., Wettstein 2005).

Licensing requirements vary by jurisdiction and are a form of quality assurance for psychological practice in general, but licensing boards typically do not specifically govern specialty practice, including forensic psychology practice. The ethical rules and codes of conduct that apply for psychology and even forensic psychology are relevant for quality assurance, but their enforceability is limited, there is no comparison against an ideal or target outcome, and no feedback loop is built in; rather, these guides typically provide suggestions for how psychologists should behave.

In response to concerns about poor service quality, many jurisdictions have developed processes and procedures for quality assurance standards in forensic mental health, including training, certification, and credentialing programs, among other mechanisms (Farkas et al. 1997). For example, as of 2015, 19 US states had specific programs for training and certifying mental health professionals who do evaluations of competency to stand trial (Gowensmith et al. 2015). These programs differ substantially, and most are not built with robust quality assurance practice aims, but jurisdictions with better quality control processes have higher-quality forensic assessment reports than jurisdictions without such programs (see, e.g., Mass. Dep. Mental Health 2018, Otto & Heilbrun 2002, Packer 2008).

In addition, psychologists can voluntarily seek board certification, such as by the American Board of Forensic Psychology. Certification by a board like this involves some quality assurance processes, such as verification of education, relevant training, licensure, experience, and demonstrated competence. The demonstration of competence occurs through successful completion of a written examination, review of written work products that are evaluated against a target outcome, and an oral examination (**https://www.abpp.org/**). And there is evidence from real cases



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that board-certified forensic psychologists conduct higher-quality evaluations than psychologists who are not board certified (see, e.g., Hill et al. 2022).

With regard to the scoring of psychological tests, the Standards for Educational and Psychological Testing require that scoring protocols be established as a quality assurance mechanism (AERA & NCME 2014). In addition, those responsible for test scoring are expected to establish and document quality control processes and criteria, with adequate training provided. The quality of scoring is to be monitored and documented, with systemic scoring errors documented and corrected.

To move the field of forensic psychological assessment as a whole toward enforceable quality assurance processes, relevant guidelines such as those offered by the NRC (2009) and others (Levy et al. 1999) could be implemented. Specific suggestions include development of standardized vocabularies, ontologies, and scales for interpreting diagnostic tests; written examinations; supervised practice; ongoing proficiency testing; hiring of qualified personnel and training to keep their knowledge up to date; the use of written protocols to guide practice; recertification procedures; and effective disciplinary procedures. Organized forensic psychology should take on the task of establishing guidelines for various specific forensic pursuits [such as in the spirit of the APA's guidelines for custody evaluation (APA 2009), dependency evaluation (APA 2013b), and occupationally mandated evaluations (APA 2018)], and accompanying quality assurance implementation procedures could be developed to move the field forward. Ideally, these task-specific forensic psychological assessment guidelines would carefully consider the eight best practice considerations detailed here.

## Communication of Data, Results, and Opinions

Clear communication is a vital component of rigorous forensic psychological (and expert) reporting. Regulators and commentators note that audience understanding can be improved through the use of a logical, coherent, and transparent reporting structure (Grisso 2010, Howes & Kemp 2017, NRC 2009). Toward this goal, every source of information relied upon in the assessment process should be labeled clearly and identified concretely (APA 2013a, Grisso 2010, Melton et al. 2017). This transparency is important for understanding and evaluating what information the evaluator had (and did not have) in forming their opinion in the case, because one clear source of unreliability and bias in expert judgment is when different people form opinions based on different information (Guarnera et al. 2017).

Relatedly, referencing is a fundamental component of communicating scholarly and scientific knowledge. Citations link data, results, theories, and conclusions to their epistemic foundations; allow readers to access and evaluate the original sources underpinning the work; and ensure that the authors and owners of the information relied upon are properly credited (Penders 2018). Conversely, unsourced statements, or the inclusion of irrelevant sources, can cause confusion and may misdirect the reader about the scope and basis of the author's work. Thus, the accurate and conscientious attribution of information to its source is a key aspect of rigorous scientific assessments. Following on, it is important for rigorous psychological assessments to clearly articulate the factual and empirical basis for opinions and inferences (Resnick & Soliman 2012). In fact, doing so is required by ethical and practice guidelines for forensic mental health reports (APA 2013a, Heilbrun et al. 2009).

Ethical requirements (e.g., Can. Psychol. Assoc. 2017), codes of conduct (e.g., NSW Expert Witness Code of Conduct 2005), and critical scholarship (e.g., Grisso 2010) all reinforce the importance of actual and perceived impartiality in forensic psychological (and other expert) assessments. Consequently, the language used in reports should be unbiased and neutral rather

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than emotive and/or judgmental. Additionally, only information clearly relevant to the assessment should be reported [see, e.g., Section 4.04(a) of the Ethical Principles of Psychologists and Code of Conduct (APA 2017) directing that "psychologists include in written and oral reports and consultations, only information germane to the purpose for which the communication is made"]. The inclusion of irrelevant information or content with questionable relevance is problematic because it could increase the risk for bias (Neal & Grisso 2014b), introduce due process and incrimination issues (Witt 2010), and intrude unnecessarily into the evaluee's privacy (O'Connell 2009).

Furthermore, psychological assessments and expert opinions usually involve a process of inference. This process involves reasoning from information that is known to have happened or has been shown to be true (i.e., facts) to subjective beliefs, opinions, and conclusions about those facts. As such, facts and inferences have fundamentally different properties: One is known or agreed to be true, the other is a belief based on the application of relevant training, study, and experience to what is known or agreed upon. Thus, rigorous psychological assessments must clearly differentiate facts and inferences (Ireland 2012, Melton et al. 2017) to ensure the reader understands what is known and can be accepted, versus what is believed and should be evaluated. In fact, forensic evaluators are encouraged to report data and inferences separately, with only data reported in a data-based section of the report, preceding a separate section on inferences and opinions that relies on the earlier data but introduces no new facts (Grisso 2010, Otto et al. 2014).

Psychologists providing forensic opinions also often lack firsthand experience of the facts of the case. Instead, they are asked to investigate and opine about past or future states, situations, or events. Consequently, opinions must acknowledge room for doubt about what did or will happen and should not exaggerate or understate the certainty associated with that opinion (Edmond et al. 2016a). Indeed, unqualified definitive expressions are considered scientifically unsupportable according to the NRC (2009) and are therefore problematic if used in psychological assessments.

Specifically, definitive forms of expression (e.g., the person will/will not commit a serious violent offense) should be replaced with appropriately qualified verbal or numerical expressions of uncertainty, such as "1 chance in 10," "highly likely," or "30% of people with similar scores did so within 5 years." Expressions that do not provide some indication of uncertainty likely warrant critical evaluation. However, even appropriately qualified statements must be considered carefully, as different communication formats (e.g., probability, frequency, category, relative risk, sample recidivism rates) can affect practitioners' judgments (Slovic et al. 2000) and the judgments of others (Evans & Salekin 2016, Hilton et al. 2015, Martire 2018, Varela et al. 2014). Ideally, the methods for communication a practitioner employs would be carefully considered and empirically evaluated (see, e.g., Kroner et al. 2020). However, practitioners vary in their preferences, and not all communication strategies in use are empirically informed (Heilbrun et al. 2004). This variability reinforces concerns that practitioners have not yet reached agreement or consensus about the precise meaning of many of the terms that are used (Guarnera et al. 2017, Heilbrun & Brooks 2010, NRC 2009).

The absence of a consensual and validated vocabulary for describing the strength and certainty of a conclusion threatens to undermine both the repeatability and reproducibility of psychological opinions. For example, testifying to "a reasonable degree of psychological/scientific certainty" has no agreed-upon meaning and functions as little more than window dressing (Lewin 1998, Natl. Comm. Forensic Sci. 2015). The absence of a consistent definition for many terms, and the absence of proscribed language, decreases the chances that the same procedures will consistently result in the same conclusion when completed by the same or different practitioners. Limiting the use of jargon (Grisso 2010, Otto et al. 2014, Witt 2010) and providing glossaries (Ireland 2012), definitions, and reproductions of reporting scales/terminology can reduce the potential for misinterpretation of psychological findings, but individual practitioners vary in their use of



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these strategies. Finally, communicating uncertainty about the interpretations of unvalidated test batteries is critically important (AERA & NCME 2014).

## Limitations and Assumptions

All psychological opinions will be based on some set of assumptions and will inevitably have some limitations, given the challenges associated with routine professional practice. The NRC (2009) requires that these limitations and assumptions be characterized clearly in forensic reports. For example, assumptions about the reliability of various sources of information, the accuracy of particular methods, or the relative costs/benefits of individual rights versus community safety (Dror & Murrie 2018), among others, can affect how information is understood and interpreted by a practitioner and so should be made explicit.

Psychologists can help their audiences understand the limitations of their work by disclosing information about adherence to best practice recommendations. Given the significant attention paid to psychological assessment evidence in legal settings (e.g., Archer et al. 2016; Goodman-Delahunty 1997; Grove et al. 2000; Neal et al. 2019, 2022b; Rotgers & Barrett 1996; Woody 2016), as well as standards in the field more broadly (AERA & NCME 2014), practitioners should provide clear evidence of any limitations to the foundational validity and validity as applied for the methods they use [see, e.g., Section 9.09(b) of the Ethical Principles of Psychologists and Code of Conduct (APA 2017) directing that "psychologists use assessment instruments whose validity and reliability have been established for use with members of the population tested. When such validity or reliability has not been established, psychologists describe the strengths and limitations of test results and interpretation"]. They should report when validity indices are unknown, unknowable, or lower than ideal; if the test(s) fall(s) short of best practice expectations; or if the test(s) was/were used in an unusual way or for an unusual purpose (PCAST 2016). The potential for bias should be acknowledged, and if steps have not been taken to mitigate those risks, this should be transparently declared (Edmond et al. 2016a). Where steps have been taken to manage bias, they should be described to facilitate evaluation of their probable efficacy. If no required or formalized terminology is available for forensic interpretations or conclusions, it would be beneficial for practitioners to be clear that the intent and interpretation of uncertain terms are imprecise and inconsistent to ensure their statements are not overinterpreted (NRC 2009).

Beyond these best practice considerations, forensic psychological assessments are often limited by a range of practical considerations that may affect the data, method, inferences, or opinion. For example, where collateral sources like friends or family contribute to an investigation, their motivations, availability, and cooperation are likely to materially affect the quality of the information obtained (Salekin et al. 2018, Snider et al. 2006). Archival records are also often incomplete or unavailable and will often contain the subjective impressions or interpretations of the original author (Dror & Kukucka 2021). Data or results may also be inconsistent or disconfirmatory. Such information should be disclosed, as it likely limits or qualifies the opinion.

Overall, these assumptions and limitations shape the scope and nature of the opinion and affect how the opinion should be weighed and relied upon. It is therefore vitally important for practitioners to provide explicit information about limitations and assumptions, and to ensure that they are understood by the intended audience. This issue has been raised by both scholars and authorities (e.g., Cunliffe & Edmond 2021, Edmond 2015, Edmond et al. 2014, Found & Edmond 2012, Goudge 2008, NRC 2009).

## Alternative Views or Disagreements

Understanding how the opinions of the practitioner differ from or align with mainstream and best practice ideals for the field is essential to a rigorous evaluation of the practitioner's work. Scholars

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and philosophers of critical thinking suggest that alternative views and disagreements be identified to understand and evaluate the problem at hand, the frame of reference or points of view involved, assumptions made, principles or theories used, evidence advanced, interpretations and inferences made, and implications and consequences that follow (Paul & Elder 1990). As such, the NRC (2009, p. 186) noted that "sufficient content should be provided to. . .permit informed, unbiased scrutiny of the conclusion." Thus, it is vital that forensic practitioners engage with and acknowledge where their views might depart from the established consensus in their field and where their views (whether they are held by a majority or not) run counter to authoritative perspectives.

There has been extensive discussion and debate about best practices in forensic psychological assessment for decades. For instance, where the assessment methods are unstandardized, it would be helpful to acknowledge the very real possibility of disagreement between practitioners about the validity of this approach as compared to structured and/or actuarial judgments (Edmond et al. 2014, 2016a). Similarly, there have been extensive discussions about bias and bias management in forensic psychological assessment, which attentive practitioners should acknowledge.

Importantly, the failure to acknowledge areas of professional disagreement should not be taken to indicate their absence (Cunliffe & Edmond 2021; Edmond et al. 2016b, 2017; Paul & Elder 1990)—that is, an absence of evidence should not be taken as evidence of absence (see, e.g., Thompson & Scurich 2018). Instead, such omissions should lead to questions about the technical proficiency of a practitioner who is not aware of relevant contemporary critical discourse (Edmond et al. 2016b).

Outside of the critical scholarship already referred to, many more mundane types of theoretical or practical disagreement may be relevant to evaluating a forensic psychological opinion. Psychology is a broad church discipline, and given there are few widely accepted or enforceable standard operating procedures or philosophies, it is reasonable to expect a viable and alternative perspective on most aspects of forensic psychological practice. Although it is clearly not practicable or desirable for practitioners to address all possible alternative perspectives, predominant schools of thought often occupy similar territory in the professional practice landscape (Benjamin 2019). To evaluate the quality and value of a psychological opinion, it is important to understand what the predominating alternatives are, and whether they are more or less well aligned with or supported by best practice (Paul & Elder 1990).

## Ethical Obligations and Codes of Conduct

Psychologists who provide clinical services are generally required to hold a license to practice, and many are members of relevant professional organizations. These licensure and membership arrangements generally entail at least tertiary training in ethical conduct, as well as adherence to ethics codes (e.g., APA 2017). Broadly, psychologists must strive to maintain integrity in relationships, provide responsible caring, respect the dignity of persons and peoples, and be responsible to society (e.g., APA 2017, CPA 2017). However, where a practitioner is not a licensed psychologist or member of a relevant professional organization, there may be no formal requirement to adhere to a professional code of ethics. Indeed, scholars have proposed the introduction of a specific expert witness code of conduct sworn into legal proceedings to address this gap (NRC 2009, Young & Goodman-Delahunty 2021).

Nevertheless, there are distinct ethical and practical requirements for psychologists undertaking forensic rather than traditional treatment-oriented clinical assessments (APA 2013a, Candilis & Neal 2014, Neal 2018). Clinical assessments are often conducted in a therapeutic context in which the person being evaluated is the client seeking treatment and the assessment is used to inform treatment approaches (Greenberg & Shuman 1997, Melton et al. 2017). The therapeutic



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alliance between the provider and patient is key, and the veracity and objectivity of information provided by the patient are of secondary importance. In these situations, the ethical principles guiding professional behavior are rarely onerous, because it is clear who the client is, that the psychologist's work should benefit the patient and minimize any potential harm, and that the patient's rights and welfare are the priority (APA 2017, APS 2007, CPA 2017).

In a forensic psychological assessment, the application of ethical principles can be challenging and contentious, which has resulted in the development of special guidance for these contexts (see e.g., APA 2013a, APS 2014). Forensic assessments are driven by a particular referral question, and addressing that question may not align with the assessee's individual preferences. The needs of the hiring party—the client in a forensic assessment—may eclipse the preferences of the person being assessed (Greenberg & Shuman 1997).

To the extent that a psychological opinion is admitted or regarded as expert opinion evidence, procedural legal rules may also apply, such as rules of evidence and civil or criminal procedure. In general, it is unclear how often or how well forensic scientific opinions actually comply with relevant rules and procedures. However, there are examples from forensic science and forensic psychology where compliance has been inadequate (Edmond et al. 2017, Grisso 2010, Neal et al. 2019). It may therefore be valuable to consider what, if any, rules apply to the psychological assessment in question, and the extent to which they have been followed.

## DISCUSSION

We outline the historical evolution of forensic psychology and offer suggestions for improvement in the future through eight best practice principles for forensic psychological assessments, derived from authoritative mainstream scientific institutions and psychologists who are attentive to these issues. We also offer specific suggestions based on these best practices that anyone could use to evaluate the rigor and value of a forensic psychological assessment, including offering supplementary resources for interested readers on the Open Science Framework (**https://osf.io/nsur2/**). Specific aspects of particular techniques will likely require careful consideration and perhaps additional or modified best practice recommendations and analysis. But to the extent that a psychological evaluation technique meets the definition of a forensic psychological assessment, we contend the techniques should also adhere to the principles and best practices of evidence-based psychological science described in this review.

## LIMITATIONS AND ASSUMPTIONS

In evaluating the current article and its assertions, it is important to be aware of several limitations and assumptions. We approached the topic of rigorous forensic psychological assessment by drawing on our knowledge relating to scientific expert opinion evidence (i.e., of the type admitted in legal proceedings). Some of the issues discussed from this perspective may be more or less acute in other contexts or scenarios. Even so, we believe the best practice considerations discussed here are relevant to assessing the quality and value of any psychological assessment. It is also possible that contradictory views and alternative opinions will have been missed in our summary and synthesis. Finally, it is possible that we have missed additional examples and sources supporting the views presented here.

## ALTERNATIVE VIEWS OR DISAGREEMENTS

Our perspective is well informed and is supported extensively by evidence from authoritative sources. More specifically, our views favor a scientific and skeptical approach, with awareness that

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alongside robust scientific practices (Washburn et al. 2019), some pseudoscientific practices in forensic science and forensic psychology "display the veneer of science but do not 'play by its rules'" (Mnookin et al. 2011, p. 80). Despite this, the professional practice of those with a different perspective to ours may also be characterized as acceptable given the standards and guidelines currently operating in the field (Heilbrun & Brooks 2010).

There is also a potential for debate about our characterizations of the evidence and extent to which forensic psychologists are aware of and follow the best practice recommendations described above. For example, there are different perspectives on the overall status of the accuracy of forensic psychological assessments (Heilbrun & Brooks 2010) and the success of bias management by practitioners (Lovett & Harrison 2019). In some cases, these discrepancies can be reconciled through careful consideration of the terms of reference and/or the evidence being relied upon to support differing views. However, in others they likely reflect genuine substantive differences in perspective. We cited the evidence we rely upon to form our views and ultimately believe that there is a credible empirical foundation for the assertions we have made. However, some may dispute aspects of our assertions.

## CONCLUSIONS

In sum, we intend these best practice considerations and supplementary resources to have practical application and benefit. These principles can be used by mental health professionals to improve the quality of their work, by organizations and jurisdictions to improve the state of practice, and by legal professionals preparing for cases. These theoretically informed best practices should aid in evaluating the quality, value, and rigor of any psychological assessment conducted in a legal context that relies on the norms, esteem, and values of science. As such, it is possible (and is our hope) that reliance by both psychologists and the courts on these best practices could improve the future of forensic psychological science and practice.

### SUMMARY POINTS

1. Foundational validity relates to the "in principle" accuracy, repeatability, and reproducibility of forensic psychological assessments; because standardized methods are key to a technique's repeatability and reproducibility, and because few standardized methods are available in psychology, this likely has implications for the foundational validity of forensic psychological assessments.
2. Caution should be exercised in generalizing any empirical evidence supporting the foundational validity of a psychological assessment to the validity of the assessments completed in an individual case: Both psychometric tools and practitioner judgments can be negatively affected by the complex challenges of routine practice.
3. When evaluating the potential for bias in psychological assessments, consider what information was available to the practitioner, when that information was available, if that information was necessary for the task, and whether the information could alter the application or interpretation of the techniques at hand.
4. No national or international quality assurance standards yet exist for forensic psychology; however, relevant quality assurance features are in place, such as licensing regulations, particular credentialing pathways, ethics codes, and practice guidelines that inform best practice in the field.

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5. Concerns about the standardization, meaning, and certainty of terminology and conclusions used by forensic practitioners make it important to critically consider what the practitioner said, why they said it that way, what the practitioner meant, and whether the practitioner communicated an appropriate degree of uncertainty about their conclusions.
6. A clear characterization of the limits and assumptions of a psychological assessment is vital for determining its quality and value, including both the sufficiency of the foundational and applied validity of the techniques employed, as well as case specific limitations and more general assumptions.
7. The technical proficiency of a practitioner who does not acknowledge where their views might depart from consensus in their field or run counter to authoritative perspectives, or who is not aware of relevant contemporary critical discourses, should be questioned.
8. Although ethical obligations, codes of conduct, licensing requirements, and procedural legal rules apply to the provision of psychological assessments, the requirements for practitioners providing psychological assessments do not appear to be determined by the service provided in a given case; rather, they seem to be determined by the training of the individual practitioner, the titles and memberships they hold, and the resultant commitments they have undertaken.

### FUTURE ISSUES

1. Some scholars recommend psychological tools should be used only where published scientific peer-reviewed articles substantiate the validity of the tool for the specific intended use, but much work remains to make this recommendation viable (Neal et al. 2019, Neal et al. 2022b).
2. There are calls for the field to move toward scientifically informed standardized batteries for specific referral questions (e.g., Archer et al. 2016, Neal et al. 2019).
3. The issues associated with, and definitions of, task-[ir]relevant information are beginning to be addressed in psychological assessment, but much work is still needed (Neal et al. 2022a). The distinction between task-relevant and -irrelevant information is an important one, requiring formalization in this context.
4. The need for robust and enforceable quality assurance standards and processes in forensic psychological assessment is clear.

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## AUTHOR CONTRIBUTION STATEMENT

Conceptualization: T.M.S.N., K.A.M., and R.K.O.; data curation: K.A.M., T.M.S.N., and J.L.J.; formal analysis: K.A.M. and T.M.S.N.; writing, original draft: K.A.M., T.M.S.N., J.L.J., and E.M.M.; revised draft: T.M.S.N., K.A.M., J.L.J., E.M.M., and R.K.O.

## DISCLOSURE STATEMENT

Portions of this original synthesis were prepared simultaneously for this article and for a report commissioned by the independent public inquiry by the Government of Canada and Province of

Nova Scotia into the April 2020 Nova Scotia mass casualty called the Mass Casualty Commission. K.A.M. and T.M.S.N. served as expert consultants in the inquiry process. Our reports are available at **https://masscasualtycommission.ca/documents/commissioned-reports/#rigorous-forensic-psychological-assessment-practices-part-i-and-ii**, and a video of our expert testimony about this work before the Commission is available at **https://masscasualtycommission.ca/calendar/event/77362/**. With transparent declarations to and permissions from both the Mass Casualty Commission and this journal, this article contains extracts from our report to the Commission's inquiry, reframed to summarize and emphasize the core generalizable principles of rigorous forensic psychological assessment practices for the readership of the *Annual Review of Law and Social Science*.

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