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Forensic Psychologists' Perceptions of Bias and Potential Correction Strategies in Forensic Mental Health Evaluations

Tess M.S. Neal
Arizona State University

Stanley L. Brodsky
The University of Alabama

A qualitative study with 20 board-certified forensic psychologists was followed up by a mail survey of 351 forensic psychologists in this mixed-methods investigation of examiner bias awareness and strategies used to debias forensic judgments. Rich qualitative data emerged about awareness of bias, specific biasing situations that recur in forensic evaluations, and potential debiasing strategies. The continuum of bias awareness in forensic evaluators mapped cogently onto the "stages of change" model. Evaluators perceived themselves as less vulnerable to bias than their colleagues, consistent with the phenomenon called the "bias blind spot." Recurring situations that posed challenges for forensic clinicians included disliking or feeling sympathy for the defendant, disgust or anger toward the offense, limited cultural competency, preexisting values, colleagues' influences, and protecting referral streams. Twenty-five debiasing strategies emerged in the qualitative study, all but 1 of which rated as highly useful in the quantitative survey. Some of those strategies are consistent with empirical evidence about their effectiveness, but others have been shown to be ineffective. We identified which strategies do not help (such as introspection), focused on promising strategies with empirical support, discussed additional promising strategies not mentioned by participants, and described new strategies generated by these participants that have not yet been subjected to empirical examination. Finally, debiasing strategies were considered with respect to future directions for research and forensic practice.

Keywords: bias, forensic, expert judgment, decision making, mixed methods, qualitative

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Organizational ethics prescribe objective practice as a cornerstone of psychological assessments (American Psychological Association, 2013; Principle E and standards 2.04, 2.06, 3.06, and 9.01 of American Psychological Association Ethics Code, American Psychological Association, 2002). Consistent with these ethical guidelines, Neal and Brodsky (2014) provided data showing that forensic-clinical psychologists are occupationally socialized to believe they can and do practice objectively. However, a historical controversy has existed in the legal (e.g., Bazelon, 1974) and psychological (e.g., Faust, 2012) literature regarding whether objectivity on part of the expert is possible. Social psychological literature attests to the difficulty people may have in divorcing their decisions from cognitive and emotional biases (e.g., Aronson, 2008; Croskerry, Singhal, & Mamede, 2013), and experts are not immune from these biases. Some researchers suggest forensic mental health evaluators underestimate the prevalence and severity of such influences on their work (Arkes, 1989; Faust & Ahern, 2012; Garb, 1998), but the literature does not address forensic clinicians' personal experiences with bias or how they try to correct for them.

Heilbrun and Brooks (2010) proposed an agenda for the next decade in the field of forensic psychology, framed by the National Research Council's (NRC) recommendations for improvements in all forensic sciences (see NRC, 2009). Although forensic psychology was not included in the NRC's definition of forensic science, two of the relevant issues raised by the NRC concerning the nature of forensic evidence used in criminal proceedings were (a) problems with the science on which expert evidence is based and (b) evidence tainted through bias, human error, and the absence of sound operational and performance standards. The council noted, "Research has been sparse on the important topic of cognitive bias in forensic science—both regarding their effects and methods for minimizing them" (p. 124). Given these concerns, Heilbrun and

Tess M.S. Neal, New College of Interdisciplinary Arts & Sciences, Arizona State University; Stanley L. Brodsky, Department of Psychology, The University of Alabama.

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Correspondence concerning this article should be addressed to Tess M.S. Neal, New College of Interdisciplinary Arts & Sciences–SBS, Arizona State University, 4701 West Thunderbird Road, Mail Code 3051, Glendale AZ 85306. E-mail: tess.neal@asu.edu

Brooks (2010) recommended that research on observer bias and human error in forensic examinations be undertaken.

To address these gaps in the literature, the present study was designed to explore forensic clinicians' experiences with and perceptions of biases, and to investigate the strategies they use to try to mitigate perceived biases. A few suggestions exist for how forensic clinicians might consider the impact of bias, such as actively generating alternative conclusions, identifying and using relevant base rates, minimizing the role of memory, and identifying and weighing the most valid sources of data (Arkes, 1981; Arkes, Faust, Guilmette, & Hart, 1988; Borum, Otto, & Golding, 1993). However, much remains to be learned about strategies used to manage bias. In the body of psychological science at large, there are numerous studies of bias in thinking and decision making, but "in striking contrast . . . a paucity of psychological research on debiasing" (Lilienfeld, Ammirati, & Landfield, 2009, p. 391). Thus, investigating the strategies mental health evaluators use in an effort to debias their thinking may stimulate research on new strategies and has the potential to add meaningfully to the psychological literature at large.

Bias in Forensic Evaluations

The word "bias" is often used to describe emotional involvement in a situation, but it is also used to describe systematic errors. Neal and Grisso (2014a) reviewed and integrated literature to describe the underpinnings of biases that may affect forensic evaluators. Indeed, several studies have shown that the decision-making processes of forensic evaluators can be affected by bias. Factors that have been found to bias forensic decision making include identification with the retaining side or litigant (Murrie, Boccaccini, Guarnera, & Rufino, 2013; Otto, 1989; Zusman & Simon, 1983), professional training (Beckham, Annis, & Gustafson, 1989; Murrie, Boccaccini, Johnson, & Janke, 2008), policy ideology (Homant & Kennedy, 1986, 1987a, 1987b), personal beliefs (Deitchman, Kennedy, & Beckham, 1991; Svec, 1991), and even forensic evaluators' personality traits (Miller, Rufino, Boccaccini, Jackson, & Murrie, 2011).

A series of recent studies demonstrated that psychologists' scoring of some psychological instruments (such as the Psychopathy Checklist–Revised [PCL-R] and the Static-99R) in adversarial settings may be skewed toward the retaining party's position, termed the "adversarial allegiance effect" (e.g., Murrie et al., 2013). For example, prosecution experts tend to score the PCL-R significantly higher than defense-retained experts. Furthermore, a substantial portion of the variance in forensic evaluations stems from idiosyncratic differences in evaluators themselves (Boccaccini, Turner, & Murrie, 2008; Homant & Kennedy, 1987a, 1987b; Miller et al., 2011).

Recent field studies have reported similar findings of apparent adversarial allegiance in the United States (e.g., DeMatteo et al., 2014; Murrie et al., 2008; Murrie et al., 2009) and in Canada (Lloyd, Clark, & Forth, 2010). Beyond these studies, surveys of judges and attorneys consistently reveal their concern about bias among experts as well (e.g., Krafka, Dunn, Johnson, Cecil, & Miletich, 2002; Shuman, Whitaker, & Champagne, 1994). In short, there is ample literature, from multiple perspectives, to bolster the case for investigating mental health evaluators' potential biases and the strategies they use to attempt to correct for perceived biases.

Given the existence of various biases in forensic evaluations, how aware are evaluators of biases in their work? Little research has examined forensic mental health experts' perceptions of their own biases. Commons, Miller, and Gutheil (2004) asked forensic psychiatrists about potentially biasing situations in "other" and "opposing" experts. They opted not to ask about personal biases in an effort to minimize defensive responding. They concluded that forensic psychiatrists "wildly underestimate the biasing effects" of various factors on opposing experts (p. 73). No research to date appears to have evaluated the degree to which forensic experts are aware of their own biases.

There is a common pernicious cognitive bias called the "bias blind spot," which is the tendency to recognize bias in others but fail to recognize it in oneself (Pronin, Lin, & Ross, 2002). A bias blind spot in forensic mental health evaluators' thinking processes could lead to or explain partisan allegiance in forensic evaluations and could help explain how and why biased clinicians might perceive themselves as unbiased. Furthermore, Pronin and Kugler (2007) described introspection as a source of the bias blind spot—a topic of further discussion in the "General Discussion" section. Thus, it is important to explore forensic psychologists' susceptibility to the bias blind spot, to investigate whether they rely on introspection as (an ineffective) method to ferret out and reduce biases, and what other methods they use.

Bias Correction Strategies for Forensic Evaluations

What can forensic evaluators do to minimize the effects of bias? How aware are forensic evaluators of the most effective and promising strategies for mitigating bias? Are forensic evaluators relying on strategies that are actually known to be *ineffective* at mitigating bias, such as introspection? Some promising answers for the first question can be found in the medical decision making and cognitive and social psychology of decision making literatures. The second and third questions have not yet been asked or answered.

Promising Debiasing Strategies

Croskerry and colleagues (2013) integrated studies focused on decision making in various domains to develop a framework of cognitive debiasing strategies applicable to medical decision making. They grouped the strategies into three nonmutually exclusive categories: *educational*, *workplace*, and *forcing function* strategies (described in the following three paragraphs). The domain of medical decision making has some similarities to forensic mental health assessment, where various sources of information must be integrated to reach an informed conclusion or decision, often in the form of a diagnosis and prognosis. Therefore, the cognitive strategies organized by Croskerry et al. are promising for forensic mental health evaluations, and the strategies reported to us by forensic clinicians will be compared with Croskerry et al.'s framework.

Educational strategies. Croskerry et al. (2013) described educational strategies as interventions to make clinicians aware of the risk of biases in order to enhance future ability for debiasing (e.g., didactic training). To be effective in reducing bias, these

trainings focus *concretely* on theories of reasoning and clinical decision making with training in how major cognitive and affective biases affect diagnostic reasoning or on other evidence-based methods for reducing bias. Trainings that stress clinicians should "avoid bias" and "be objective" in the abstract without concrete attention to the psychology of decision making are unlikely to reduce bias.

Workplace strategies. Workplace strategies are interventions for debiasing that clinicians can implement on-the-job, at the time of problem solving. Workplace interventions comprise several different strategies, many of which are already part of routine forensic practice. For example, "slowing down" strategies may reduce the effects of heuristics and biases on clinical judgments (e.g., Moulton, Regehr, Lingard, Merritt, & MacRae, 2010), as may collecting thorough data, using structured data acquisition methods, consulting with colleagues, personal accountability, and "exposure control," or limiting exposure to information that may bias judgment.

Forcing functions. Forcing functions are rules that constrain clinician responses or require them to consider or do particular things, such as using actuarial tools or stopping rules. Structured decision aids, including psychological tests and tools that serve to reduce bias as workplace strategies also serve as a "forcing function." Similarly, checklists can improve outcomes if they require the clinician to consider relevant information systematically (Ely, Graber, & Croskerry, 2011; Gawande, 2009; Haynes et al., 2009). Other forcing strategies, such as consider-the-opposite or consider-an-alternative may be useful for reducing the effects of heuristics and biases by increasing the consideration of other potential hypotheses (Galinsky & Moskowitz, 2000; Lord, Lepper, & Preston, 1984; Mumma & Wilson, 1995).

Although some effective strategies for reducing bias in judgments have been identified in the literature as summarized thus far, the purposes of the present studies were to (a) investigate forensic psychologists' awareness of bias and perceived usefulness of (effective and ineffective) bias-reducing strategies and (b) add to the debiasing literature by identifying previously unexamined strategies for future empirical work.

The Current Studies

The purpose of this mixed-method investigation was to investigate psychologists' experiences, awareness, and efforts to correct for bias in forensic mental health evaluations. We asked what influences might bias clinicians in the forensic context, and what strategies forensic clinicians would report using to reduce bias. Qualitative methods were used in the first study, as little previous literature has asked these kinds of questions. We followed up with a complementary large-scale survey of forensic mental health professionals to generate more representative answers to our questions, asking participants to rate the perceived usefulness of various bias-correction strategies that emerged from the qualitative analysis.

Study 1: Qualitative Investigation

Method. The qualitative research paradigm is well suited to investigate perspectives about which little is known (Auerbach & Silverstein, 2003); therefore, this present exploration of bias in forensic evaluations started from a qualitative research paradigm. The goal of qualitative research is to generate *thick description* (Geertz, 1973); providing a detailed description of the experiences of the people who live out the phenomenon being investigated. Qualitative research often develops grounded theory—theoretical constructs derived from, and grounded in, participants' own understandings (Auerbach & Silverstein, 2003; Glaser & Strauss, 1967). It typically begins by interviewing a sample of people who have experienced the phenomenon under study. The raw data of the qualitative analysis is generated by interviews as the participants talk about and reflect on the phenomenon from their subjective perspectives.

Interview texts are analyzed at three levels in the Constant Comparative Method of Grounded Theory Analysis (Glaser & Strauss, 1967). This method consists of recognizing repeating ideas, conceptualizing themes, and developing theory-driven constructs (Auerbach & Silverstein, 2003; Glaser & Strauss, 1967; Miles & Huberman, 1994). Repeating ideas are similar or overlapping text-driven categories derived from the words and phrases of participants. Once repeating ideas are identified, their conceptual relations to one another are organized into higher-order themes. From there, the researcher can integrate the themes with one another and with theoretical concepts in existing literature to develop higher-order theory-driven constructs (Auerbach & Silverstein, 2003; Miles & Huberman, 1994).

Participants and procedure. In-depth narrative interviews with 20 forensic psychologists were conducted. We aimed at a minimum of 20 participants because qualitative researchers have described this as a good number for initial theorizing (Auerbach & Silverstein, 2003). We intended to continue recruiting participants to reach the theoretical saturation point (i.e., until new information was no longer being learned), but after 20 interviews we reached our saturation point and discontinued data collection.

Participants were randomly selected from a list of forensic psychologists board certified through the American Board of Forensic Psychology (ABFP), a specialty organization within the American Board of Professional Psychology (ABPP). ABPP is a national organization that provides protection to consumers by certifying and making public information about those psychologists who demonstrate competence in a specialty area of professional psychology (ABPP, n.d.). ABPP Board Certification is a demanding credential to obtain; it is a voluntary step beyond licensure that can take several years of additional training, study, and practice. ABPP-Certified forensic clinicians, therefore, represent highly trained and motivated forensic psychologists who may be among the "best of the best" forensic clinicians in the field.

After the institutional review board approved the project proposal, 41 participants were contacted by telephone, 20 of whom accepted the invitation to participate in the interview (48.8% response rate). Participants who agreed went through an informed consent process with the interviewer and were then asked whether they would allow the interview to be recorded, so that each completed interview could be transcribed and analyzed. The interviews lasted an average of 16.0 min (SD = 8.4 min). A debriefing document was read at the conclusion of the interview. We did not include a demographic survey to avoid linking personally identifying information with participant responses about bias in forensic evaluations. Thus, no detailed demographic statistics are provided. A professional transcriptionist transcribed the audio-recorded in-

terviews, and then two advanced psychology doctoral-level students coded the data.

Materials. A scripted narrative interview with optional probes explored forensic psychologists' awareness of bias in their colleagues' and in their own work, as well as bias correction strategies. Participants were encouraged to discuss related issues to allow for the interview to be an iterative process. The five scripted questions included, "In general, how can psychologists' personal biases enter the picture in their forensic work?," "Tell me about your own background, experiences, and beliefs that may influence the choices you must make when you do forensic evaluations," "To what extent are you concerned about your own potential biases when you do forensic work?," "Talk to me about any experiences you've had in which you were concerned about your ability to be objective," and "Do you have any strategies or methods you employ to try to correct for your own potential biases?"

Data analyses. After the interviews were transcribed, the Constant Comparative Method of Grounded Theory Analysis (Glaser & Strauss, 1967) was used to examine the data. To accomplish the first step (to organize repeating ideas), the coders independently organized the relevant text into as many repeating idea categories as necessary to fit all the data. Each data point was "constantly compared" with other data points and categories throughout the initial coding process to ensure that the data under each category "belonged together" (Glaser & Strauss, 1967; Harry, Sturges, & Klingner, 2005). To complete this task, the coders started with the raw data and developed categories for each unique construct in the data, copying and pasting raw quotes that "fit" under each category, and moving back and forth among the data and the categories, continuing to edit and compare them to one another to decide which belonged together.

In the "common themes" step of analysis, each coder looked for categories that seemed to overlap and grouped those together, providing the repeating ideas in similar categories with unique labels as themes to capture the groupings (Auerbach & Silverstein, 2003). Then, to accomplish the third step of developing theory-driven constructs, each of the themes was organized into larger and more abstract constructs. Finally, the theoretical constructs were organized into a narrative to summarize what was learned.

Qualitative researchers necessarily use subjectivity when analyzing and interpreting data; however, subjective conclusions must be justified by the data. The qualitative equivalent of reliability and validity is to incorporate four "justification safeguards" into the analysis (see, e.g., Auerbach & Silverstein, 2003; Rubin & Rubin, 1995). We followed these safeguards to ensure our interpretations were justified by the data; however, consistent with the qualitative approach to analyzing data, there may be other justifiable interpretations of coherent patterns in this data (see, e.g., Auerbach & Silverstein, 2003).

The first justification safeguard was integrating the ratings from two independent raters at each stage of the process; they discussed and clarified disagreements and reached consensus before moving on to the next step (see, e.g., Auerbach & Silverstein, 2003; Harry et al., 2005). No numerical reliability rating was calculated, because the goal in this qualitative analysis was consensus (see, e.g., Harry et al., 2005). Each point of difference was discussed and clarified until an agreement for coding was reached and theoretical constructs could be merged together in a coherent story to organize and interpret the data.

The second justification safeguard was transparency. A clear record of steps was kept to provide justifiable descriptions of how the interpretations were reached. Instead of denying the influence of the coders' subjective perspectives, the aim was transparency to be clear to any reader how interpretations came from the data (see Auerbach & Silverstein, 2003). The third safeguard was communicability. Communicability was sought by striving to make the categories understandable to the participants and other investigators who may choose to use them in future research. To assess communicability of the interpretations, they were explained to other researchers and a few participants after the analyses were complete. The participants and researchers understood and affirmed the descriptions, leading to the conclusion that communicability was achieved. The final safeguard was coherence. We aspired to coherence in our interpretation of the data by creating theoretical constructs that fit together in a coherent story to organize the data. Again, this story may not be the only possible story, but it is one justifiable way to organize and interpret the patterns.

Results. As noted, the results take the form of text-driven repeating ideas, conceptualizing themes, and theoretical constructs. Tables 1 and 2 present forensic clinician-reported bias awareness and bias correction strategies, respectively. They illustrate how the text-driven repeating ideas logically clustered into themes, and how the themes clustered into theoretical constructs. Although some examples of raw text are provided below, readers interested in seeing the entire raw dataset of quotes we coded may access the online supplemental material associated with this article.

Table 1
Reported Bias Awareness: Theoretical Constructs, Themes, and Repeating Ideas

Awareness of bias falls on a continuum
From automatic denial of bias to believing bias is inevitable
Automatic denial of bias
Bias denial after superficial reflection
Bias denial after substantive reflection
Bias denial despite describing probable bias
Active consideration with unsure resolution
Owning bias after reflection
Bias is inevitable
Awareness of bias in others is higher than awareness of personal bias
Concern about colleagues' objectivity but not self-objectivity
Efforts to compensate for colleagues' bias
Doing the work because others are biased
Specific biases identified
Evoked cognitive and emotional reactions
Dislike of the defendant
Anger toward offense or offender
Being too sympathetic or empathic
Countertransference
Preexisting personal, moral, and political values
Policy ideologies
Death penalty attitudes
Limited cultural competency
Reluctance to accept shifting social norms
Time and experience
The influence of interested others
Non-obvious alliance with the referral party
Influence of colleagues
The economic effect
Money can easily influence thinking

Table 2
Reported Bias Correction Strategies: Theoretical Constructs, Themes, and Repeating Ideas

Embracing professional pride
- *Developing a sense of pride in one's professional identity*
  - Taking pride in professional identity
  - Preventing negative perceptions of work
  - Striving to meet peer expectations

Formal and informal education
- *Receiving explicit didactic training about objectivity*
  - Didactic training about objectivity
- *Exposure to the importance of objectivity through reading professional literature*
  - Reading professional texts and guidelines
- *Observing others who manage their personal biases successfully*
  - Supervisors' feedback and modeling
  - Learning from others
- *Taking personal responsibility to continue learning after completing formal training and education*
  - Continuing to learn
  - Learning from mistakes

Relying on data
- *Investigating all relevant data before forming an opinion*
  - Resisting early conclusions
  - Collecting thorough data from multiple sources
- *Taking time to think about the evaluation information rather than immediately writing the report*
  - Spreading the evaluation over time
- *Critically examining conclusions (e.g., considering alternative hypotheses)*
  - Generating and testing competing hypotheses
  - Seeking disconfirmatory information
- *Being an active consumer of scientific information*
  - Being grounded in science
  - Being aware of common sources of bias and using correction strategies
- *Basing conclusions and opinions on sound data*
  - Grounding conclusions in data
- *Examining patterns of personal decision-making (e.g., agreement with referral party preferences)*
  - Examining patterns of decision-making

Restricting the scope of opinions
- *Restricting conclusions and opinions to scientific foundations*
  - Recognizing the limits of science
  - Restricting opinions appropriately
- *Clarifying the referral question and limiting the scope of inquiry and report to the referral*
  - Understanding the referral question and limiting inquiry to that issue

Using procedural and structural supports
- *Using structured evaluation methods*
  - Using structured methods
  - Using objective measures that reduce subjective judgment
- *Taking careful notes during an evaluation*
  - Taking careful notes and relying on them
- *Consulting with colleagues about issues of potential bias*
  - Seeking feedback and discussing with colleagues
  - Fostering a culture of openness to discussing bias awareness

Resisting adversarial allegiance
- *Resisting allegiance effects*
  - Limiting contact with retaining party
  - Developing financial referral-based independence
  - Seeking referral source variety
- *Avoiding advocacy*
  - Avoiding advocating for one side or the other
  - Being aware of the subtle influence of colleagues

Introspecting to recognize bias
- *Fostering a continuing commitment to objectivity*
  - Nurturing humility
- *Continuous introspection about potential biases*
  - Introspecting about potential biases
  - Paying attention to strong reactions
  - Examining countertransference feelings

"Controlling" bias
- *Intentionally controlling existing bias*
  - "Putting aside" and controlling bias
- *Attending to wording choice in reports to edit out value-laden language*
  - Avoiding bias in reports

Table 2 (*continued*)

Accepting referrals only for cases in which bias is unlikely
Anticipating bias to avoid compromise of objectivity
Compromised objectivity may require withdrawal
Disengaging emotionally from cases
Limiting empathy and rapport in forensic cases
Being cautious about empathy and rapport
Disengaging emotionally from cases
Fostering emotional detachment
Diffusing responsibility as a strategy to distance self

Bias Awareness

The first goal of the qualitative study was to explore forensic psychologists' experiences and awareness of bias in forensic work, both in their own and in colleagues' work. Two broad theoretical constructs captured the seven themes that emerged from the 21 unique repeating ideas in the raw data (Table 1). The theoretical constructs, themes, and repeating ideas—with example raw quotes for each—are presented below, with the levels of heading mapping onto those four levels of data (Table 1).

Awareness of Bias Falls on a Continuum

Although the participants almost uniformly reported a belief in their ability to be objective in their forensic work, they differed in the degree to which they were aware of or willing to admit to potential threats to their objectivity. Some of the clinicians immediately dismissed the possibility of bias in their work. For these psychologists, the objectivity mandate in forensic work may be so salient and accessible that it generates defensiveness when thinking or talking about any possibility of bias. For others, the topic may be less threatening, and they were able to reflect on the possibility of bias in their work, with some clinicians able to identify specific areas of potential bias in their work. Regardless of where the psychologists fell on that continuum of awareness/openness to discussion, the data were clear that clinicians reported more concern about others' biases than their own. Furthermore, several psychologists noted they feel an obligation to accept difficult cases to ensure the work would be objective, because they believed they would be able to do the challenging work without bias when other clinicians would be unable to.

From automatic denial of bias to believing bias is inevitable. Awareness of bias exists on a continuum: Some psychologists automatically and resolutely denied bias, others were unsure or fell somewhere between the extremes, and still others espoused the view that struggling with bias is common or even inevitable for practitioners in the field.

Automatic denial of bias.

> I really believe that I can evaluate someone, see them over the capital case, maybe 5 to 8 sessions and not be invested in the outcome . . . So, I don't think you're going to get any place with that question with me.

Bias denial after superficial reflection.

> I would have to say no, nothing that comes to mind.

Bias denial after substantive reflection.

> There were some cases where I had to struggle with the frustration of reporting where I did not favor the defense who hired me. But I don't really think you could say I was biased.

Bias denial despite describing probable bias.

> In an *Atkins* case [a legal case in which the U.S. Supreme Court ruled that intellectually disabled defendants cannot be executed, *Atkins v. Virginia*, 2002], I'm aware that I feel a little sick to my stomach when the person is zipping along doing very well on the IQ test. I'm thinking, 'Oh, no,' because there's always a way in which that truly bothers me . . . I find that really troubling and I've asked myself if at some point, I need to stop doing that because it bothers me. I don't enjoy the emotions, but then I also tell myself 'Well, at least I know I'll do it objectively.

Active consideration with unsure resolution.

> Gosh, it's really hard for me to identify any that I believe I have. That's sounds like an arrogant statement (laughs). This is really a hard question, I guess I have worked so hard at simply being detached and—well I shouldn't say I worked so hard, maybe it just comes easy, I don't know . . . I can't think of any personal ones that get in the way of doing my evaluations.

Owning bias after reflection.

> I'm always concerned about any potential bias and have to attempt to counter it if I think it's active.

Bias is inevitable.

> Never get too confident . . . no matter how smart you think you are, no matter how thorough you are, that doesn't necessarily mean you're being objective on top of that.

Awareness of bias in others is higher than awareness of personal bias. Everyone described ways in which *others* can be biased, but only some of the participants described concerns about their *own* potential biases.

Concern about colleagues' objectivity but not self-objectivity.

> I'm not concerned about my objectivity; I am concerned about some of my colleagues' objectivity.

Efforts to compensate for colleagues' bias. Some participants acknowledged working in areas in which they have strong personal attitudes relevant to the circumstances of the referral (e.g., engaging in evaluations in death penalty cases despite strong opinions against the death penalty). Some participants

explained their reason for engaging in such behaviors is because they work hard at objectivity despite existing attitudes. They were critical of others who they perceived may not counteract biases.

Doing the work because others are biased.

> I have no particular interest in competency to be executed . . . but I've gotten involved over a period of time because of the quality of others' work. At least I can try to bring something to the table in place of my personal feelings.

Specific Biases Identified

Participants identified several specific ways in which psychologists' decision processes in forensic cases may be systematically biased. First, participants described how the emotional and cognitive responses of the evaluator toward the evaluee or the case might be problematic. For instance, participants suggested that disliking the evaluee or feeling disgusted by the circumstances of the case could exert a negative influence on decisions about the evaluee. In addition, participants described how the attitudes, beliefs, and values psychologists hold prior to beginning a case may encourage bias, if those attitudes, beliefs, or values are relevant to the case. Some clinicians discussed how interested others can impact decisions. For example, the goals of an adversarial party were described as reducing a psychologists' ability to process information objectively if s/he began to identify with those adversarial goals. Other colleagues, such as those involved in systems in which public policies or informal politics are important (e.g., the need for opening beds for newly admitted patients in hospital settings) were also described as having the potential to exert a systematic influence on forensic decision making. Finally, participants described the various ways in which financial or economic interests might influence the opinions reached in forensic cases.

Evoked cognitive and emotional reactions. Numerous specific kinds of bias were described, such as disliking the evaluee or feeling angry or disgusted by the circumstances of the case (e.g., sex offenses, gruesome murders, serial crimes, crimes against children). Sympathizing too strongly with the evaluee was also identified as a potentially biasing situation.

Dislike of the defendant.

> This particular defendant, I found nothing likeable at all; in fact, I found him despicable. And I choose that word carefully, because it's not a word I use often, I don't despise many people. Everything about him I disliked, and then his style of presentation was provocative and designed to shock, so that was one where there was a real personal reaction that I had to really guard against . . . that was troubling.

Anger toward offense or offender.

> I don't do criminal cases involving pedophiles either for the prosecution or the defense, because I'm not the least bit interested in finding something that can help them . . . I'd love to find something that will nail them.

Being too sympathetic or empathic.

> There are certain subgroups of people whose life experiences were horrific enough that it's hard to imagine their life turning out particularly well. I don't think that's ever had an impact on a bottom line opinion, but I think I really have had to make sure that that belief isn't making me too sympathetic or skewing the way I ask my questions.

Countertransference.

> When you're working with somebody doing a forensic evaluation who reminds you of a previous client . . . that's one of the things that I often sort of have to watch out for is having a bias towards, I mean forming a therapeutic-type feeling with someone, and feeling empathy towards them, and not allowing that to affect my objectivity.

Preexisting personal, moral, and political values. The attitudes, beliefs, and values psychologists hold prior to beginning a case were described as potentially engendering bias. For instance, participants suggested clinicians' critical beliefs about the functioning of the justice system could exert a systematic influence on decision making.

Policy ideologies.

> The District Attorney started charging younger and younger adolescents and even kids as adults. I do competency evaluations, and the temptation to announce they're incompetent because they shouldn't be tried as adults was strong.

Death penalty attitudes.

> I'm very personally opposed to the death penalty—and I think I would have a hard time doing those evaluations in an unbiased way. I think I would be looking for mitigating information without needing to.

Limited cultural competency.

> I don't think I'm particularly racist, but I think I share stereotypes that a lot of Americans share. . . .

Reluctance to accept shifting social norms.

> I think one that I've had to reckon with since I started practicing is the notion that the normative family has shifted. At that point, single parent or artificial insemination, gay and lesbian families would be pretty rare. They've kind of become the norm, not the norm, but at least not outliers. And, I've kind of had to make the adjustments.

Time and experience.

> I think it also slips in due to lots of experience in the field, and this can go both ways. Either a very increasingly sympathetic view, for example, that there are certain subgroups of people that really never had a chance or in an increasingly critical view of people bringing things on themselves.

The influence of interested others. Colleagues and attorneys may also affect decision making, such as the "tug" of adversarial allegiance and institutional pressures such as the need for opening beds for newly admitted patients in hospital settings.

Nonobvious alliance with the referral party.

> There's always a pull from the side that has retained you to see things their way. It can be very subtle sometimes, and I think most of us have some amount of desire to please, and so we would, maybe at some level, kind of like it if it came out the way they wanted it. So, there's that very, very subtle pressure, and I think if you consistently work for

one side or another, you become absorbed into their culture of seeing things a particular way.

Influence of colleagues.

When you're involved in [decision-making] at a state facility-type level there's always people trying to influence your decision.

The economic effect. Finally, financial factors may exert an influence because forensic experts "gotta pay the rent like everybody else."

Money can easily influence thinking.

When you're doing [disability evaluations] privately, it's pretty hard [to stay unbiased] because if you do a disability evaluation and come out on the side of the person seeking disability, that may start to influence your flow of referrals.

Bias Correction Strategies

The second goal of the qualitative study was to explore the strategies forensic psychologists use in an effort to reduce bias in their work. Nine broad theoretical constructs captured the 25 themes that emerged from the 42 repeating ideas in the raw data (Table 2). Example quotes from each repeating idea follow, organized by themes within each broad theoretical construct. Additional raw data, organized in the same way, are available in the online supplementary material.

Embracing Professional Pride

Participants defined objectivity as part of the identity of a forensic psychologist and noted that identifying oneself as a forensic psychologist may promote objectivity as an element of professional pride. Thus, some participants suggested that developing a sense of professional pride in one's identity as a forensic psychologist might motivate the mitigation of bias. What McCammon (2004) calls the "acceptance" heuristic was recognized as both a positive and negative influence on objectivity. The acceptance heuristic is the tendency to engage in activities we think will get us accepted or at least noticed by people we like or respect. On the positive side, participants described taking pride in one's profession and striving to prevent negative perceptions of their work among professional colleagues, suggesting these efforts might bolster objectivity by making salient the high expectations of professional peers. However, the acceptance heuristic may also reflect the warnings issued by participants to resist the pressures of referral parties and other invested parties.

Developing a sense of pride in one's professional identity. Participants reported that developing a sense of pride in one's identity as a professional and striving to meet high peer expectations and professional standards may protect against bias. They suggested one mechanism through which this may occur is the desire to prevent negative perceptions of their work products.

Taking pride in professional identity.

An element that I think is critically important for the psychologist is to have a clear perception in his/her mind about who they are. You're trying to be objective or do professional work because of who you are . . . That image of yourself as a professional and who you are is an important thing to guard. And the greater investment that you have in that—to 'who are you and who are you becoming'—I think that insulates it some.

Preventing negative perceptions of work.

From a simply self-serving point of view, bias is not good for the career of the expert. Because it gives you a short shelf-life . . . There's some degree of objectivity that can be maintained just from the self-serving perspective that I don't want to be caught with my pants down.

Striving to meet peer expectations.

Because that was such an arduous credential to obtain, because I had so much respect for the people who already had it, that when I signed a report and put 'A.B.P.P.' after my name, I didn't want that to be something that would cast a negative light on this group of individuals that were so capable.

Formal and Informal Education

Most of the sample described ways in which they had been exposed to training about objectivity in forensic work. Although many participants described formal training, others described informal training or mentorship regarding objectivity. A substantial minority stated never having received training about objectivity in forensic work. Training experiences included formal education sources (e.g., graduate coursework, internship, continuing education, conferences), hands-on experience with feedback and discussion about apparent biases, reading "classic" texts and guidelines in the field that stress the importance of objectivity, and mentors providing good examples of and being open to discussing how they manage their biases. Of note, although most psychologists described receiving some training about the *importance* of objectivity in the abstract, fewer were able to describe specific strategies learned about *how* to manage biases.

Receiving explicit didactic training about objectivity. Participants suggested training about objectivity through formal didactic training may reduce bias.

Didactic training about objectivity.

Training programs and the internship, they pretty much hammered on the idea of objectivity and impartiality in general when it came to interpreting data and test results.

Exposure to the importance of objectivity through reading professional literature. Participants also suggested that training about objectivity occurs by becoming familiar with professional standards and guidelines and reading "classic" and current texts and articles.

Reading professional texts and guidelines.

Reading several articles and books in forensic psychology talking about objectivity . . . in the evaluation process . . . [and] in the way in which you asked your questions.

Observing others who manage their personal biases successfully. Participants described quality supervision focused on issues of bias awareness, observing high-quality role

models attending to bias, and learning vicariously through others as useful strategies for reducing bias.

Supervisors' feedback and modeling.

> I received a lot of good supervision around how to deal with my own personal issues in dealing with people who have done very difficult things.

Learning from others.

> Talking with other people about their own concerns about their own biases circles back in on itself, so then I'll end up thinking that is an issue for me as well.

Taking personal responsibility to continue learning after completing formal training and education. Owning the responsibility for learning and being willing to learn from mistakes were described as providing valuable opportunities to recognize and protect against bias.

Continuing to learn.

> I got off my rear end and made an effort to educate myself. I went to a lot of continuing ed, read a ton, and tried to expose myself to new stuff to get a different perspective on the field.

Learning from mistakes.

> I think there were times early on in my career where I might have been an advocate for one side or the other, and that's a mistake. And, I learned from that lesson.

Relying on Data

Clinician-participants described sound data as essential for reducing bias in forensic assessments. Participants recommended being scrupulous about investigating all relevant data (especially potentially disconfirming data), deliberately seeking information from multiple sources (especially sources that could disconfirm developing hypotheses), and purposefully considering the evaluation data from competing perspectives prior to reaching conclusions. They also discussed the importance of incorporating both confirmatory and conflicting information in opinions. Simply including data that confirms one's opinion and ignoring disconfirming evidence was described as potential evidence of examiner partiality. In addition, participants suggested spending adequate time on a case prior to reaching conclusions, such as seeing the evaluee on more than one occasion, and taking time to think about the case before writing the report. Participants also recommended staying current on scientific issues relevant to their areas of practice and paying attention to the literature about common areas of bias and strategies for bias reduction in clinical decision making. Finally, participants suggested that systematically examining the pattern of one's own decision-making pattern over time and across cases may yield insight into potential bias. For instance, agreeing at a higher-than expected rate with the position of retaining counsel may be a problem. One participant referred to the use of base rates here as well, explaining how he compares his opinions in criminal responsibility cases to the base rates in the literature.

Investigating all relevant data before forming an opinion. Participants suggested that evaluators who gather and investigate all relevant data before forming conclusions may be better protected against bias.

Resisting early conclusions.

> Always be open to the data, because the data that you get from one person or the hypotheses that you're beginning with may not in fact be hypotheses that are supportable or most accurate when you have the rest of the data.

Collecting thorough data from multiple sources.

> I try to rely on as much objective information as I can . . . that's really the best way to guard against bias, is to have broad sources of information. . . .

Taking time to think about the evaluation information rather than immediately writing the report. Seeing the evaluee on more than one occasion and spreading the evaluation over time were described as strategies to reduce the effects of heuristics and biases on forensic opinions.

Spreading the evaluation over time.

> Just letting some time pass. There's a number of people who will dictate a report the last day that they see someone. I think if you can, it's important to start the report while things are fresh in your mind, but then not finalize it until you've let it gel a little bit more; see some other people and then go back and look at it again, maybe even go through some of the key notes and testing and findings . . .

Critically examining conclusions (e.g., considering alternative hypotheses). Participants described generating and testing multiple hypotheses—especially those that would disconfirm developing opinions—as a strategy to reach less biased conclusions.

Generating and testing competing hypotheses.

> I often think about, 'What will I be asked upon cross-examination? What's the opposing point of view? What's the counterargument? What data is missing from this?' I guess it's the idea—and particularly as questions are asked on cross—you're trying to legitimately account for that and describe that.

Seeking disconfirmatory information.

> Actively seek out disconfirming evidence.

Being an active consumer of scientific information. Participants suggested forensic evaluators who consume and rely on science to inform their work may be better protected against bias, especially those who use bias-reduction strategies described in the literature.

Being grounded in science.

> The more grounded you are in the research and in scholarly literature, the more insulated you are from bias.

Being aware of common sources of bias and using correction strategies.

> A great 1993 paper by Borum, Otto, and Golding identifies 10 or 15 strategies. I read that paper very early in my training and so I built it into my evaluations. I have interview templates and actually had those principles in mind when I came up with those templates.

Basing conclusions and opinions on sound data. Participants stated that evaluators who "ground" their conclusions in high-quality data may be better protected against bias.

Grounding conclusions in data.

> Follow the data. The data are what drive our conclusion, whatever the results are of our evaluations—the testing, interviews, that's what leads to our conclusions.

Examining patterns of personal decision-making (e.g., agreement with referral party preferences). Examining one's pattern of decisions over time and across cases was described as helpful for seeing potential bias and motivating to mitigate biases in one's work.

Examining patterns of decision-making.

> I look to see if I always find what the attorney hopes I'm going to find . . . I do a lot of insanity cases, most of them for defense attorneys, and I would say no more than 25% of the time do I come up with an opinion that would be helpful for the defense. And, that's pretty much what the literature shows. [Since] my percentage of finding insanity is pretty close to what a jury finds, I consider that to be a check on objectivity.

> Calculate credibility index . . . what proportion of cases do you disagree with the person making the referral to you . . .

Restricting the Scope of Opinions

Participants reported that conclusions and opinions not supported by case-related data or the state of psychological science itself raises the specter of examiner bias. They recommended that forensic examiners recognize the limitations of psychological knowledge and restrict conclusions to the data and science available. Clinicians also stressed the importance of the reason for referral. They indicated that including information not relevant to the referral issue in reports and testimony may indicate bias (e.g., reporting on the details of a grisly criminal history might not be relevant for an adjudicative competency evaluation). Participants noted that recognizing the legal question at issue and understanding psycholegal criteria related to that issue are important skills to develop in the interest of mitigating bias. For instance, they suggested that clinicians unable to recognize vague referrals in need of clarification may more prone to allowing their own subjectivity to dictate the course of an ill-defined evaluation.

Restricting conclusions and opinions to scientific foundations. Forensic psychologists described reducing bias by limiting opinions to the level at which the data are present.

Recognizing the limits of science.

> The question that the legal system is asking . . . to recognize limitations to what you can actually answer based on that psychological knowledge.

Restricting opinions appropriately.

> If attorneys refuse to give information to me or say it's not available, then I say I can't give an opinion, or I can give an opinion that's very limited, and I'll qualify my opinion by saying I can't be sure because data were missing.

Clarifying the referral question and limiting the scope of inquiry and report to the referral. Participants suggested that focusing sharply on the question at issue may be a good strategy for reducing bias.

Understanding the referral question and limiting inquiry to that issue.

> If I'm doing a risk assessment I'm going to focus on primarily those factors that are associated with increased risk or decreased risk, and not stray to factors that may concern a person but aren't actually related to risk . . . I try to structure the evaluations around those factors . . . relevant to the court.

Using Procedural and Structural Supports

Psychologist participants discussed building in procedural and structural supports for reducing bias in forensic work, such as using systematic and structured methods for data collection and integration, taking careful notes, and consulting with professional colleagues regarding potential problems. Structured methods for data collection and integration were described as reducing the effects of examiner subjectivity. Careful notes were recommended because of the ease of remembering information consistent with developing hypotheses, in contrast to the relative challenge of remembering inconsistent information without detailed notes written in-the-moment. And participants described consulting with nonjudgmental colleagues as assisting in the active consideration of bias and for identifying strategies for minimizing bias.

Using structured evaluation methods. Participants indicated that the use of systematic and structured approaches, including actuarial instruments, structured professional judgment tools, and standardized interviews may reduce systematic bias.

Using structured methods.

> I think in the absence of structure, there is a greater likelihood of bias.

Using objective measures that reduce subjective judgment.

> The PCL-R [requires] you ask these kind of general questions and then you complete the ratings after that based upon your whole experience of it. You should prefer to have it where it's bottom-up, where for example, each question is answered and is recorded, hopefully, in a reliable way, and then the aggregate of scores actually helps you to make the determination.

Taking careful notes during an evaluation. Participants described taking careful notes and steadfastly relying on them rather than on memory can reduce bias.

Taking careful notes and relying on them.

> Relying on memory alone and thinking that using your memory is sufficient instead of writing down notes becomes almost a bias in itself.

Consulting with colleagues about issues of potential bias. Participants suggested that consulting with colleagues and being open and willing to discuss bias awareness can mitigate bias.

Seeking feedback and discussing with colleagues.

> I talked about my reactions with colleagues.

Fostering a culture of openness to discussing bias awareness.

> We try to maintain that as part of the culture here as well . . . there's so many of us tuned into this that there's always somebody you feel comfortable with saying, 'I'm afraid this comes across as too harsh,' or the flip side is not being as straight forward as you need to be.

Resisting Adversarial Allegiance

Participants discussed the biasing influence of outside pressure on forensic psychologists' decision processes. They suggested this pressure can come from discussing the case with an adversarial retaining party; consistently taking cases from a particular referral source, especially when financially dependent upon a particular referral stream; and even pressure from colleagues. Specific strategies offered for mitigating these effects included conducting the evaluation and writing the report while minimizing contact with the referral party, seeking referrals from various parties, developing financial referral-based independence, not taking "sides" in adversarial settings, and working to resist the biasing influence of colleagues.

Resisting allegiance effects. Forensic psychologists discussed the particular challenges inherent for being objective in the forensic area. They described the importance of trying to reduce the biasing effects of working for one adversarial party or the other by limiting contact with the retaining party, trying not to be economically dependent on any particular referral stream, and seeking to obtain referrals from a variety of sources (i.e., not always from the same "side").

Limiting contact with retaining party.

> Evaluate and try to write the report without extensive discussion with the attorney.

Developing financial referral-based independence.

> If my opinion is not favorable to somebody, I'm not particularly worried about it. That's an advantage of having a lot of work to do . . . That gives me a degree of financial referral-based independence.

Seeking referral source variety.

> We tried to go out of our way to get referrals from both prosecution and defense.

> I try to be appointed directly by the judge. I think that reduces any pull towards one side.

Avoiding advocacy. Other suggestions for reducing bias in adversarial settings included not advocating for any "side" and working to be aware of how colleagues might bias one's opinion.

Avoiding advocating for one side or the other.

> Witnesses . . . are supposed to be impartial. We're there to provide information to the jury, not to advocate for one side or another.

Being aware of the subtle influence of colleagues.

> You gotta look at, especially if you're in a team environment, who else is influencing you and the attorneys, because we're in not just treatment team-based environments but in institutional facility-type environments where there's also external influences through forensic review boards, through attorneys and judges in various counties and so forth.

Introspecting to Recognize Bias

Participants identified one's excessive self-confidence as a potential source of bias, if it prevents the psychologist from being willing to revise early formed opinions or if it precludes the psychologist from otherwise taking reasonable steps to reduce bias. Nurturing humility and continuously introspecting to be aware of biases were offered as solutions. Every participant in this sample described introspection as critical for objective practice.

Fostering a continuing commitment to objectivity. Participants suggested that nurturing humility about one's ability to be objective may reduce bias.

Nurturing humility.

> Never get too confident, and however objective you think you are, you're probably wrong.

Continuous introspection about potential biases. Participants also reported they thought introspection would be a good method for clinicians to become aware of their biases in order to take measures to reduce their effects. All 20 of the participants suggested introspection as a strategy to reduce bias.

Introspecting about potential biases.

> Be fairly harsh on yourself introspectively to ferret out those biases if you have them and be aware of them.

Paying attention to strong reactions.

> If you find yourself beginning to have an emotional reaction to something you stop, stand back from that and think about what that's about.

Examining countertransference feelings.

> You have to maintain some empathy and rapport to get somebody to complete an evaluation. But at the same time, you have to let those feelings, to the best you can, not impact your objectivity in your opinion.

"Controlling" Bias

Participants identified vigilantly guarding against the undue impact of biases as important in forensic work. Specific strategies described included "controlling" or "putting aside" existing biases to prevent them from interfering with objective information processing, carefully attending to wording and phrasing in reports to edit out biased, emotional, and judgmental words and phrases; and being selective about which cases to accept. For instance, clinicians suggested that when a referred case presents an issue that has the potential to activate examiners' personal bias(es), the examiners should do what they can to mitigate the effect. Participants suggested that at a minimum, examiners consider how the case might affect them and pay special attention to their decision processes in the course of that evaluation. Other suggestions were to refer to the case to qualified others or to turn down referrals, or withdraw from cases when objectivity is (or would be) compromised. Of note, several participants mentioned that turning down referrals may not always be possible.

Intentionally controlling existing bias. Participants suggested that working hard to "control" bias was also a useful strategy for protecting against bias.

"Putting aside" and controlling bias.

> Put aside knowledge, prejudices, and biases and take the case as it is.

Attending to wording choice in reports to edit out value-laden language. Avoiding emotional and otherwise potentially biased language in reports was reported as a strategy.

Avoiding bias in reports.

> Taking out those words or phrases that might demonstrate a bias or reveal a bias.

Accepting referrals only for cases in which bias is unlikely. Being selective about accepting cases in which bias may be a problem and withdrawing from cases when bias was recognized were suggested as strategies for mitigating bias.

Anticipating bias to avoid compromise of objectivity.

> I'm biased in a few areas; I just don't do them . . . I make pretty clear to myself that some people simply disgust me and there are some cases I need to hand off to somebody else.

Compromised objectivity may require withdrawal.

> I realized I [could] no longer function as an objective expert in this case. So I withdrew.

Disengaging Emotionally From Cases

Emotional disengagement was described by all of the participants in this sample as an important element of objectivity. Developing ways to compartmentalize one's work, fostering desensitization, limiting empathy and rapport, and distancing oneself from evaluees and from the outcome of cases were discussed. Emotional disengagement and distancing are consistent with the tenets of moral disengagement theory, a descriptive theory of how people dissociate themselves from their moral agency in order to participate in difficult activities (Bandura, 1999). Related to the notion of disengaging emotionally from the case and the evaluee is the suggestion to limit therapeutic empathy and rapport in forensic evaluations (30%). Participants recommended that forensic evaluators approach evaluees' verbal reports with skepticism. Further, being "warm and fuzzy" was discouraged. Instead, these psychologists reported that neutrality and emotional distancing preserves objectivity.

Limiting empathy and rapport in forensic cases. Participants reported that being cautious about and limiting empathy and rapport could help reduce bias in forensic settings.

Being cautious about empathy and rapport.

> You have to maintain some empathy and rapport in order to do an evaluation or even get somebody to complete an evaluation. But at the same time, you have to let those feelings, to the best you can, not impact your objectivity in forming your opinion.

Disengaging emotionally from cases. Emotional disengagement from evaluees, cases, and outcomes was offered as a strategy for bias correction. Participants also suggested diffusing responsibility for the case outcome by reminding themselves that the evaluator is not the ultimate decision maker.

Fostering emotional detachment.

> Just letting the chips fall where they may and that anything that you learn in a forensic assessment is not your problem, it's the defendant's client problem or the client's problem or the plaintiff's problem and the lawyer's problem, but it's not your problem. You can't become invested.

Diffusing responsibility as a strategy to distance self.

> We're trying to apply behavioral science theory, practice, and literature to specific points of law, and that we're not really responsible for outcomes.

Discussion. Rich qualitative data emerged about awareness of bias, specific biases that recur in forensic evaluations, and potential strategies for bias correction. The information provided by board-certified forensic psychologists about particular situations and contexts that pose challenges for them may heighten awareness of the effects of these factors for other forensic evaluators. Certain identified biases may be unique to the forensic context, such as the insidious effects of alignment with an adversarial referral party. Others may be exaggerated in forensic contexts, such as the systematic influence of fees on decision processes, as well as strong cognitive and emotional reactions to defendants, victims, and offenses. The consequences of some biasing influences, such as preexisting values and beliefs, may also be exaggerated in forensic evaluation contexts.

The "awareness of bias" data show that there is a continuum of awareness in forensic evaluators, ranging from automatic denial of bias to believing that bias is inevitable. In their review of the literature on strategies to reduce diagnostic error and bias in medical decision making, Croskerry et al. (2013) asserted that debiasing involves the succession of stages identified in Prochaska, DiClemente, and Norcross's (1992) stages of change model. In the case of debiasing decisions, the stages are lack of bias awareness, awareness, ability to detect bias, considering change, deciding to change, implementing strategies to bring about change, and finally maintaining the change (see also Wilson & Brekke, 1994). These stages map reasonably well onto the data from our qualitative analysis.

The bias blind spot in forensic psychology. Participants had no trouble identifying bias in their colleagues, but fewer reported ever having any concern about their *own* potential biases. Furthermore, some of the participants reported they take cases that might pose significant challenges for others because they see themselves as able to control their biases when others might be unable to do so. These results are consistent with research showing that people perceive themselves as less vulnerable to bias than others (Ehrlinger, Gilovich, & Ross, 2005; Pronin et al., 2002; Pronin & Kugler, 2007). Pronin et al. (2002) found that this "bias blind spot" persisted even when people were explicitly taught how various specific biases could have affected their assessments. Despite directed training about the potential effects of the biases on their assessments, Pronin et al.'s (2002) participants insisted that their own assessments were accurate and objective; nevertheless, they believed others' assessments were affected by the biases. Furthermore, even when people acknowledged that the strategies used to

reach their conclusions were biased, they insisted they could overcome the bias and reach objective judgments anyway (Hansen, Gerbasi, Todorov, Kruse, & Pronin, 2014).

The problem with psychological evaluators not seeing their own biases is that they may be overconfident in clinical judgments. Overconfidence can lead to negative consequences, such as risky decision making and rejecting decision aids that would improve accuracy (Faust & Ahern, 2012; Nickerson, 1998). Confident clinicians are persuasive to triers of fact (Cramer, Brodsky, & DeCoster, 2009; Sah, Moore, & MacCoun, 2013), and if clinicians' confidence is excessive, their persuasiveness may contribute to unjust legal outcomes.

Limitations. The data about bias-reduction strategies provide insight into the efforts likely used by forensic psychologists to combat potential biases in their work. A problem with this method is that we asked people to introspect about higher-order cognitive processes regarding biases and how they might correct for them. Because of the inherent difficulty of introspection, people often report based on implicit causal judgments about what they think is probably happening rather than on actual cognitive processes (Nisbett & Wilson, 1977). Thus, these qualitative data may better be described as documenting what forensic psychologists think *might* bias judgments and what they think might debias them, as opposed to what actually does. Nevertheless, these are data for the field to consider at this stage in its developmental process of change.

As described previously, qualitative analyses necessarily rely on subjectivity when analyzing and interpreting data. Although we relied on the most structured and defined methods we could to conduct the qualitative analyses, the ironic fact remains that some of the very analytic methods we used leave our interpretations susceptible to confirmation bias, hindsight bias, the availability heuristic, and so on. For instance, aspiring toward coherence in our interpretation might have led us to consider only information that was right before us, while relevant and useful information might have been neglected as explained by the "What You See Is All There Is" heuristic (Kahneman, 2011; see Neal & Grisso, 2014a for further discussion of these issues). So again—our analysis of this qualitative data is only one justifiable way to organize and interpret the information. There are unavoidable inferential limitations associated with this kind of analysis that surely affected our interpretations.

As with any method, there are strengths that complement the weaknesses associated with it. Among the advantages of beginning this line of research with this qualitative study included that we were able to provide detailed perspectives from actual practicing forensic clinicians. We were able to capture their voices and to understand their experiences in context. However, we were unable to draw conclusions about the representativeness of the data because of the small sample size. Therefore, we conducted a second, larger quantitative study to investigate the representativeness of the data from the qualitative study.

Study 2: Quantitative Survey

This study extended study one by surveying a large international sample of forensic psychologists about the perceived usefulness of the bias reduction strategies that emerged (specifically, each of the 25 bias-correction themes that emerged from the qualitative study). We sought a larger and more representative sample of forensic psychologists to rate these strategies. The objective was to understand the state of the field in terms of what strategies forensic psychologists think reduces bias in judgments. We did not ask about personal biases in this study, because we collected demographic information and acted to preserve participants' privacy with regard to these sensitive issues. We used several methods known to incrementally increase participation likelihood (i.e., postal survey, university sponsorship, green paper, first-class postage, one-dollar bill, follow-up postcard; Fox, Crask, & Kim, 1988; King & Vaughan, 2004).

Participants. The American Psychological Association website directory was utilized to generate participants' names and addresses. Of the 962 surveys mailed, 351 were completed. The completion rate was 41.54% (962 were mailed, 117 were returned as undeliverable, and 845 were presumed delivered). Respondents were largely Caucasian (90.6%, 4.9% Hispanic, 1.1% African American, 0.9% Asian, 2.6% other) and male (69.5%; 30.5% female). The mean age was 59.25 ($SD = 9.45$) years. The majority reported PhD as their highest degree (79.2%), followed by PsyD (12.8%), joint JD/PhD (6.0%), and other (2.0%; e.g., EdD, MA). Participants had a mean of 22.35 years of forensic evaluation experience ($SD = 9.68$). Almost 30% (28.4%) reported being certified by a specialty board.

Measures. In addition to a basic demographic survey, we developed a rating sheet with 25 items inquiring about the perceived usefulness of the bias-management strategies that emerged from the qualitative study. Items were anchored on a 5-point scale from *very useless* to *very useful*. Participants also completed the Occupational Socialization Scale (OSS). The OSS is a 20-item scale we developed and have reported on in detail previous studies (see Neal & Brodsky, 2014). Items are answered on a 7-point Likert-type scale (*strongly disagree* to *strongly agree*), with higher scores indicating greater occupational socialization, or the extent to which the respondent holds values similar to the profession and other forensic psychologists and values a personal identity as a forensic psychologist. The internal reliability of the scale was good: coefficient alpha was 0.85 and the average interitem correlation was 0.25 (within recommended benchmarks of 0.15 to 0.50).

Results and Discussion

Table 3 presents the means and standard deviations of the participants' ratings for each strategy identified in the qualitative study. Almost all of the strategies were rated near the high end of the 5-point Likert-type rating scale, with 22 of the 25 items rated as "*useful*" to "*very useful*." This finding indicates that most of the bias mitigation strategies identified in the initial qualitative study were endorsed as useful by the large and more representative survey of forensic clinicians. Although clinicians largely rated the strategies as likely to help mitigate bias, we know from the literature that these strategies are not equally useful; in fact, some of them are known to be ineffective. Further discussion of effective and ineffective strategies is discussed in the General Discussion section.

Two of the 25 strategies fell between "not certain" and "useful" ratings, including *disengaging emotionally from cases* and *accepting referrals only for cases in which bias is unlikely*. The last and lowest-rated strategy, *limiting empathy and rapport in forensic*

Table 3
Useful Ratings of Bias Correction Strategies That Emerged From the Qualitative Study

Strategy	*M*	*SD*
Critically examining conclusions (e.g., considering alternative hypotheses).	1.84	.37
Investigating all relevant data before forming an opinion.	1.81	.45
Basing conclusions and opinions on sound data.	1.78	.43
Consulting with colleagues about issues of potential bias.	1.74	.45
Taking personal responsibility to continue learning after completing formal training and education.	1.70	.49
Continuous introspection about personal biases.	1.57	.59
Taking careful notes during an evaluation.	1.57	.62
Attending to wording choice in reports to edit out value-laden language.	1.55	.59
Fostering a continuing commitment to objectivity.	1.54	.62
Observing others who manage their personal biases successfully.	1.51	.55
Taking time to think about evaluation information rather than immediately writing the report.	1.51	.65
Being an active consumer of scientific knowledge.	1.49	.57
Resisting allegiance effects.	1.36	.67
Receiving explicit didactic training about objectivity.	1.31	.65
Exposure to the importance of objectivity through reading professional literature.	1.30	.63
Intentionally controlling existing bias.	1.28	.72
Restricting conclusions and opinions to scientific foundations.	1.26	.68
Examining patterns of personal decision-making (e.g., agreement with referral party preferences).	1.22	.69
Avoiding advocacy.	1.22	.83
Using structured evaluation methods.	1.20	.72
Limiting the scope of the inquiry and report to the referral question.	1.18	.82
Developing a sense of pride in one's professional identity.	1.12	.80
Disengaging emotionally from cases.	.98	.87
Accepting referrals only for cases in which bias is unlikely.	.40	1.15
Limiting empathy and rapport in forensic cases.	−.05	1.01

Note. Items were rated on a 5-point Likert type scale, where −2 = "*very useless*." −1 = "*useless*," 0 = "*not certain*," 1 = "*useful*" and 2 = "*very useful*."

cases, was the only strategy rated as "not certain" to "useless." This last strategy is somewhat similar to disengaging emotionally from cases, both of which may reflect disagreements among forensic clinicians about the ways in which the examiner should be interpersonally involved in forensic evaluations. This disagreement in the field is reflected in the literature too, with some scholars arguing against empathy in forensic evaluations in the interest of objectivity (e.g., Shuman, 1993) and others for moderate empathy in the interest of objectivity (e.g., Brodsky & Wilson, 2013).

As discussed below, we organized the strategies into groups, two of which were (a) evidence-supported strategies that forensic clinicians rated as useful for bias mitigation and (b) strategies that evidence suggests are actually ineffective that clinicians nevertheless rated as useful. To explore how belief in these effective and ineffective debiasing strategies was associated with clinician characteristics, we computed correlations between ratings of effective and ineffective strategies with number of years conducting forensic evaluations, personal belief in ability to be objective in forensic work, and occupational socialization scores. We also examined the relation between ratings of effective and ineffective strategies with type of degree, board certification, and whether or not the clinician had completed a postdoctoral training experience in forensic psychology.

Results indicated that years of experience was unrelated to perceptions of debiasing strategies (rs $< .020$). However, personal belief in ability to be objective was positively correlated with endorsement of evidence-supported strategies, $r = .114$, $p = .036$ and was unrelated to ineffective strategies, $r = .017$, $p = .753$. Occupational socialization scores were positively correlated with endorsement of both effective and ineffective strategies, ($r = .290$ and .260, $p < .001$ and .004, respectively). None of the professional preparation characteristics (type of degree, board certification, forensic postdoc) were systematically related to perceptions of effective or ineffective bias correction strategies (*Wilks' Lambda* $< .98$, Fs < 1.25, ps $> .28$). These findings suggest that even people who go through formal training in forensic psychology (i.e., who do formal forensic postdocs, who become board certified) are not any better than clinicians without this formal forensic training in differentiating effective from ineffective strategies. Perhaps training programs can adapt to better prepare forensic trainees to appreciate and use effective strategies. The findings also suggest that the more clinicians identify with their role as a forensic psychologist, the more motivated they are to find ways to mitigate their biases.

This quantitative study was conducted in a self-report format with a sample of volunteer respondents. As with all survey research, respondents may be systematically different than nonrespondents. Perhaps the topic—bias reduction strategies—was sensitive enough to preclude some people from participating. Further, the self-report nature of this study may limit the validity of the findings. For instance, the items may have elicited socially desirable or acquiescent responding. However, the inclusion of two different studies with complementary methods (e.g., qualitative and quantitative methods) eases some of the concern about either method on its own (Creswell, 2015).

General Discussion

This article represents an investigation into an important but understudied topic of bias and debiasing in forensic evaluations. Light has been shed on the potential range of bias awareness among forensic evaluators, their perceptions of the sources of bias, and perceptions of methods for combating bias. This descriptive step has been absent from the literature on understanding and improving forensic decision making. Recent research on bias in forensic evaluations has taken the approach of documenting bias on outcome measures (e.g., Murrie et al., 2013), but no studies to date have asked forensic evaluators to reflect on their own perceptions and experiences of bias and their ideas about mitigating the biases.

Many different strategies clinicians think debias their judgments emerged as themes in the qualitative study, which were then rated by a large sample of forensic clinicians in the follow-up quantitative study. Some of these strategies are consistent with empirical evidence about their effectiveness,

whereas others have been shown to be ineffective. The discussion below seats the present findings in the existing literature about the effectiveness of these strategies. In addition, we discuss potentially effective strategies drawn from the literature that were not mentioned by our forensic clinicians. And finally, we present new strategies generated by these participants that do not yet appear to have been subjected to empirical examination. These strategies may be ripe for future study and have the potential to add to the cognitive debiasing literature.

Literature-Identified Effective Strategies Perceived as Useful by Forensic Clinicians

Training emerged as a primary theoretical construct in the qualitative study, and participants in the quantitative study rated *receiving explicit didactic training about objectivity* and *exposure to the importance of objectivity through reading professional literature* as useful to very useful. These results appear to be generally consistent with Croskerry et al.'s (2013) educational category of debiasing strategies. However, our participants described the importance of training about "objectivity" in the abstract, whereas research indicates educational curricula need to focus concretely on how humans make decisions and what can go awry (and why) to educate clinicians effectively about bias and correction strategies. Graduate school coursework, internship and postdoctoral didactics, and continuing education workshops should explicitly focus on the psychology of decision making to train clinicians how bias might affect their work and what they can do about it.

Consistent with Croskerry et al.'s (2013) description of "slowing down" workplace strategies to reduce the effects of heuristics and biases on decision making, forensic clinicians in the qualitative study indicated that spreading the evaluation over time is important and *taking time to think about evaluation information rather than immediately writing the report* was rated as very useful in the quantitative survey. *Consulting with colleagues*, identified by Croskerry et al. (2013) as a promising workplace strategy for reducing bias, emerged as a strategy in qualitative study and was the fourth most highly rated strategy in the quantitative study.

Using structured evaluation methods was discussed by qualitative participants and was rated as useful in the quantitative survey. Structured tools and methods reduce error and bias by reducing subjectivity (see Neal & Grisso, 2014b). Although these structured tools can reduce bias, they are not a panacea and do not eliminate bias or insulate examiners from bias (see, e.g., Chevalier, Boccaccini, Murrie, & Varela, 2015; Murrie et al., 2013), and thus examiners should consider using other bias mitigation strategies even when they use structured tools and methods.

Participants in our qualitative sample indicated that "consider-the-opposite" strategies may be particularly appropriate in adversarial proceedings, given that forensic psychologists may be cross-examined about their evaluations and conclusions. In fact, *critically examining conclusions (e.g., considering alternative hypotheses*) was the highest-rated strategy in the quantitative survey with a mean rating that nearly topped the chart and had a narrow standard deviation. However, an important point to understand is that considering-the-opposite in order to strengthen and defend an existing opinion against cross-examination is not the way this bias-correcting strategy should be used. This strategy likely will work best early in the evaluation process, during the initial hypothesis generation stage to develop alternative hypotheses for testing throughout the evaluation process. When "considering the opposite" motivates the seeking of additional confirming data to bolster the opinion (such as in Wills', 2008 CHESS model for developing expert forensic opinions), the examiner's conclusion may end up *more* biased rather than less because of motivated reasoning (see, e.g., Lord, Ross, & Lepper, 1979; Kunda, 1990).

Literature-Identified Ineffective Strategies Nevertheless Perceived as Useful by Forensic Clinicians

Consistent with what the social psychological literature about the bias blind spot would suggest (e.g., Pronin et al., 2002; Pronin & Kugler, 2007), all of the participants in the qualitative study emphasized *introspection* as their primary strategy for identifying potential biases. Introspection was similarly one of the highest-rated strategies in the follow-up quantitative study with a much larger and more representative sample of forensic clinicians. Unfortunately, introspection is not a realistic strategy for debiasing success. Classic psychological science shows that people have little or no direct introspective access to higher-order cognitive processes (e.g., Nisbett & Wilson, 1977). In fact, Pronin and Kugler (2007) described introspection as a cognitive illusion that actually functions as a source of the bias blind spot. They showed that people rely on overt behavior to assess bias in other people but that they look inward for biased motives when assessing for bias in themselves. The divergence between relying on introspective versus behavioral information for self compared with others is not simply because of differences in introspective access. Pronin and Kugler showed that the bias blind spot persisted even when observers had access to the introspections of the person whose bias they judged.

Thus, introspection—one of the strategies forensic psychologists rated as most useful for mitigating bias—is not just a poor strategy for bias correction, but may actually exacerbate bias. Forensic clinicians may believe that they can identify and then work on their biases after identifying them via introspection, however, the common cognitive "bias blind spot" is likely to prevent the success of this endeavor, as described previously. After engaging in the ineffective strategy of introspection, forensic clinicians may develop a false confidence that they are bias-free, a confidence they may convey to the courts.

Pronin and Kugler (2007) did report one encouraging finding for forensic mental health professionals. The one situation in which their participants ceased denying their relative susceptibility to bias was when they were educated about the fallibility of introspection. They were then were better able to use behavioral indicators of their biases rather than introspective information. One of the strategies that emerged in our qualitative study was *examining patterns of personal decision making (e.g., agreement with referral party preferences*), which was also rated as useful in the larger survey. This strategy represents a behavioral marker forensic clinicians could use to examine their potential biases rather than

introspection. These findings suggest that educational curricula in forensic psychology might focus directly on the reasons why introspection is not a useful bias recognition or mitigation strategy and stress attention to behavioral markers instead of introspection to examine one's own biases.

Literature-identified effective strategies not mentioned by forensic clinicians. Exposure control, or limiting exposure to information that may unduly influence the evaluator's judgment, was identified by Croskerry et al. (2013) as a promising strategy. Indeed, "blinding" procedures to eliminate exposure to potentially biasing information may be the most effective strategy for eliminating these biases (e.g., Mueller & Pronin, 2015; Pronin & Schmidt, 2012; Wilson, Centerbar, & Brekke, 2002). However, participants did not mention this strategy in our analysis. A systemic change that might help evaluators reduce exposure-based biases from merely knowing from which adversarial source the referral came (e.g., Murrie et al., 2013) would be for the legal system to require all evaluations be referred from the court or otherwise strip any information alluding to the source of the referral (Neal & Saks, 2016). Would forensic evaluators accepting blinding procedures as a reasonable system-wide bias-correcting strategy? Or might they protest, arguing that knowing the potentially biasing information (in this case, the referral source) would deprive them of information required to make informed judgments like many doctors did when blinding procedures were becoming the gold standard for medical research (see, e.g., Nash, 1962; Weinberger, 1973)?

New Debiasing Strategies Identified by Forensic Clinicians

Qualitative participants suggested that taking notes can reduce bias in decision making, a strategy that was rated as very useful in the quantitative study. This appears to be a promising strategy and deserves empirical attention to investigate its effectiveness. Taking careful notes may be important because forensic psychologists must contend with "bounded rationality," or the fact that they do not have an endless capacity for processing information (Simon, 1956). The limitations of memory necessarily constrain hypothesis generation and decision making, especially if clinicians solely rely on memory without adequate aids to document information that might seem unimportant in the moment but that may become critical later (Thomas, Dougherty, & Buttaccio, 2014). Hypothesis generation is the bridge to sound decision making, because the hypotheses generated have a strong impact on the choices made, the way in which information is sought, and how likely different causal explanations are judged. Thus, taking careful notes may be a promising correction strategy because these notes can be reviewed after an initial period of thorough data collection to generate alternative hypotheses, which the clinician can then try to disprove, concluding with the fittest surviving hypothesis. Without careful notes, clinicians may only remember subsequent information consistent with the initial intuitive hypothesis, ending up with an overly confident opinion that the conclusion is correct.

Finally, participants identified and rated developing a sense of pride in one's professional identity as useful for mitigating bias. Perhaps professional pride can motivate efforts to meet high professional and peer standards. Mechanisms through which this might occur include promotion or prevention concerns (see, e.g., Molden, Lee, & Higgins, 2008). For instance, perhaps people motivated more by prevention concerns could reduce bias by attending to their desire to prevent negative perceptions of their work as "biased" or themselves as a "hired gun." Conversely, people more motivated by promotion concerns might reduce their biases by promoting positive perceptions of their work as "objective" and "trustworthy".

Future Directions

In addition to ideas for future directions as discussed above, other future directions include investigating individual differences in biases and bias awareness. For example, how do individual differences in personality traits (e.g., openness to experience) and cognitive styles (e.g., rational vs. experiential modes of thinking) relate to biases and bias awareness? Is the "size" or "strength" of an individual forensic clinician's bias blind spot systematically related to level of confidence, perhaps with larger or stronger blind spots associated with overconfidence? Neal and Brodsky (2014) showed that forensic clinicians with higher occupational socialization scores were more likely to believe in their ability to be objective in forensic work ($r = .50$, $p < .001$, one-tailed). Four questions follow: How does the occupational socialization process affect the perceived need for relying on bias-correction strategies? How does the strength of belief in one's objectivity relate to the perceived need for implementing strategies to reduce bias (for oneself and others)? Might clinicians with more pride in their professional identity be paradoxically more biased because of desire for and confidence in objectivity? Does confidence in one's ability to be objective paradoxically increase bias by preventing the use of strategies to mitigate bias?

If a single overarching research need calls out from these two studies, it is to investigate systematically the degree to which the promising strategies actually reduce bias. Once that becomes known, then the task is to mobilize ways in which such effective strategies become part of routine practice. The field is ripe for controlled and responsible study of issues of bias and generating empirically supported methods for improving clinical judgment and decision-making. On that foundation can we develop pedagogical and workplace interventions for implementing accountability and reducing bias in assessments.

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