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How Likely Is "Likely To Reoffend" in Sex Offender Civil Commitment Trials?

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Many sexually violent predator (SVP) laws are ambiguous regarding the degree of reoffense risk that would indicate that an offender is sufficiently "likely to reoffend" to justify civil commitment. We review how SVP statutes operationalize likelihood of reoffending. We then examine what likelihood of recidivism actual SVP jurors considered to indicate that an offender was likely to reoffend. Real jurors ($N = 153$) from 14 actual SVP hearings completed a questionnaire after deliberating to a verdict. Most jurors (81.7%) considered a 15% estimated chance of recidivism to mean that the respondent was "likely" to reoffend, and many (53.6%) even considered a 1% chance to indicate likely reoffense. Jurors who heard lower risk estimates in trials were more likely to report that a low chance of recidivism (as low as 1%) indicated an offender was likely to reoffend. Results suggest that jurors view risk more in terms of the severity of potential harm than in terms of strict statistical probability. Results also suggest that when laws give jurors discretion to define tolerable risk, jurors consider even a statistically low degree of risk intolerable.

Keywords: sexually violent predator, sex offender civil commitment, risk assessment, risk threshold

Because sexual offenders evoke substantial public concern, lawmakers have developed a variety of unique policies intended to protect the public from repeat sexual offenders. As early as the 1930s, states enacted "sexual psychopath" laws that diverted some sexual offenders away from standard incarceration and toward indeterminate hospitalization and treatment (Vars, 2013; Witt & Conroy, 2009). Although these laws had fallen out of favor by the 1980s, several highly publicized, heinous offenses by sexual recidivists prompted a second generation of laws to facilitate hospitalizing certain sexual offenders, beginning with Washington's Community Protection Act (2012), first passed in 1990. Over the next two decades, 20 states and the federal government passed "Sexually Violent Predator" (SVP) laws that allow states to civilly commit certain sex offenders for an indefinite period, even after they have completed their criminal sentences and would otherwise face release from prison.

Because most SVP commitment laws follow the criteria that the Supreme Court upheld in *Kansas v. Hendricks* (1997), they require four elements to civilly commit an offender as a Sexually Violent Predator: (a) a history of sexual offending, (b) a mental abnormality (sometimes defined as a mental disorder, personality disorder, or "behavioral abnormality"), (c) a volitional impairment rendering him less able to control his sexual behavior (*Kansas v. Crane*, 2002), and (d) a likelihood of future sexual offending (Miller, Amenta, & Conroy, 2005). A history of sexual offending is often well-documented in criminal justice records, so SVP proceedings rarely involve dispute over this requirement. However, the other requirements for commitment may be sufficiently ambiguous or arguable that they become the focus of SVP proceedings, usually with expert testimony from forensic psychologists or psychiatrists.

The fourth criterion, in particular (i.e., a likelihood of future offending), evokes a practical question: How "likely to reoffend" is *likely enough* to warrant civil commitment? In this study, we review how current SVP statutes operationalize likelihood of reoffending, and then examine what likelihood of recidivism actual SVP jurors reported was sufficient to indicate that an offender was likely to reoffend.

Estimating Risk of Sexual Reoffense

For the past few decades, scholars have studied samples of sexual offenders and documented their rates of detected sexual recidivism. These base rates of sexual reoffense serve as a numerical anchor, or starting point, for estimating an offender's likelihood of sexual recidivism (Conroy & Murrie, 2007). Although laypersons tend to estimate that almost three-quarters of sexual offenders recidivate once released (Levenson, Brannon, Fortney, & Baker, 2007), research suggests that actual recidivism rates tend to be much lower. For example, in the largest meta-analysis of the topic, Hanson and Morton-Bourgon (2009) examined studies totaling over 28,000 offenders across 16 countries and reported an 11.5% overall rate of sexual recidivism, over an average follow-up period of 70 months. In the United States, rates of sexual offending have clearly declined in recent years (Finkelhor, 2009; Jones & Finkelhor, 2003), and studies from individual states tend to report even lower rates of sexual recidivism. For example, 3.6% of sexual offenders released from Connecticut prisons (Kuzyk, 2012) and

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2.7% of sexual offenders released from Washington prisons (Barnoski, 2005) were charged with a new sex offense over a 5-year follow-up period. In Texas, the context for the current study, 3.2% of sexual offenders released from prison and followed over approximately 5 years were charged with a new sexual offense (Boccaccini, Murrie, Caperton & Hawes, 2009).

Although these base rate estimates provide a starting point for estimating risk, most forensic evaluators try to provide a more specific estimate, better tailored to the particular offender facing civil commitment, by using an actuarial risk assessment instrument (ARAI). ARAIs use research-supported rules that specify which risk factors are examined, how those risk factors are scored, and how those scores are mathematically combined to yield an objective estimate of risk (Monahan, 2006). Researchers developed popular ARAIs, such as the widely used Static-99 (Hanson & Thornton, 1999, 2000), by studying samples of released offenders and documenting rates of recidivism. Researchers identified risk factors—usually data easily retrieved from records such as age and prior offenses—that were statistically related to recidivism. They also documented recidivism rates among subgroups of the offenders who had specific numbers of risk factors (e.g., of offenders with X number of the identified risk factors, Y% reoffended over Z years). Thus, forensic evaluators using an ARAI observe the number of predefined risk factors that an offender demonstrates, and estimate the likelihood that an offender with a certain number of the predefined risk factors will recidivate, based on the observed recidivism rate of men with similar scores in the risk measure's development sample.

Legal Definitions of Risk

At first glance, these actuarial, numerical estimates of risk seem well-suited to a primary legal question underlying SVP proceedings. After all, SVP statutes specify that, to be civilly committed, an offender must be *likely* to sexually reoffend (see Table 1). Presumably, judges or jurors who make civil commitment decisions could consider the best empirically derived estimate of recidivism risk to determine whether it exceeds the threshold for likely to reoffend.

T1

However, exactly *how likely* is "likely" to reoffend? What threshold of probability must an offender's estimated risk exceed? We examined how jurisdictions with SVP laws define likely. We began with the actual laws for SVP civil commitment, then searched the case law interpreting these laws. In short, we found that states vary considerably in how they define likely, and some offer much more specific guidance than others. In a few states, the definition of likely is clearly articulated in the statute governing SVP proceedings, and the case law follows the definition. However, in most states, the definition of likely is not as clearly defined in statutes, and becomes explicit only through case law, if at all.

Generally, states fall into one of four categories when defining likely (see Table 2):

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More likely than not. The clearest definition of likely occurs in those few states that define likely as "more likely than not." Several of these states explicitly mention the more-likely-than-not standard in the code. For example Iowa's Sexually Violent Predator Act (2012) explains, "'Likely to engage in predatory acts of sexual violence' means that the person more likely than not will engage in acts of a sexually violent nature." In other states, statute does not explicitly state the more-likely than-not standard, but case law does. For example, Florida's Involuntary Civil Commitment of Sexually Violent Predators statute (2008) only states "likely to engage in acts of sexual violence," but courts have clarified,

> . . . the term "likely" as used in the terminology "likely to engage in acts of sexual violence" is a widely used term that is commonly understood by men and women of common intelligence to mean highly probable or probable and having a better chance of existing or occurring than not. (*Westerheide v. State*, 2000, pp. 652–653).

These approaches seem to clearly imply that the chance of reoffending must be higher than the chance of not reoffending, or greater than 50%.

Highly likely. A second group of states defines likely as "highly likely," or with roughly synonymous terms such as "substantially probable" or "highly probable." Courts typically describe this standard as requiring a greater likelihood of reoffense than "likely." However, because courts do not assign a more quantifiable value (such as "more likely than not") it is unclear how decision-makers operationalize these, and whether they differ practically from the other categories. The prototypical highly likely state uses likely in the statutes, such as "likely to engage in acts of harmful sexual conduct" in Minnesota's Sexually Dangerous Person Act (2011). However, the court has subsequently added the highly modifier, as the Minnesota Supreme Court did in *In re Linehan* (1999), stating that it must be "highly likely that they will engage in harmful sexual acts in the future" (p. 876).

Explicit rejection of numerical values. Other states explicitly reject any attempt at clear operationalization, and instead leave the definition of likely to the judge or jury. In these states, the statutes use the word likely, but case law determines how it is defined. For example, the Massachusetts statute says "likely to engage in sexual offenses" (Care, Treatment and Rehabilitation of Sexually Dangerous Persons, MA Gen. Laws Ch 123A, 2010), while the Massachusetts Supreme Court explicitly forbade assigning to likely a numerical value or "quantifiable probability" (*Commonwealth v. Boucher*, 2002). Similarly, the North Dakota Supreme Court refused to assign a numerical value to likely, instead defining it as, "of such a degree as to pose a threat to others" and emphasizing, "This definition prevents a contest over percentage points and the results of other actuarial tools" (*Grosinger v. M.B.K. (In re M.B.K.),* 2002, p. 477).

Undefined/no case law. In several states, the definition of likely remains ambiguous because they have not yet articulated any definition of likely. For example, New Hampshire passed its law in 2007 (Involuntary Civil Commitment of Sexually Violent Predators), and there are not yet cases clarifying the definition of likely. Likewise, New York passed its law in 2007 (Sex Offenders Requiring Civil Commitment or Supervision, 2011) and New York *County* has adopted a standard higher than more-likely-than-not but this standard is not binding on other counties, which apparently have not provided further guidance. Likewise, Pennsylvania, South Carolina, Tennessee, and Texas all lack case law clarifying the meaning of likely.

Table 1
State Definitions of Likely

Jurisdiction	Statute	Illustrative case law
Arizona	". . . likely to engage in acts of sexual violence." Sexually Violent Persons, Ariz. Rev. Stat. § 36–3701 (7)(b) (2012)	"The mental disorder makes it highly probable that the person will engage in acts of sexual violence." *State v. Erlich (In re Leon G.)*, 59 P.3d 779, 787 (Ariz. 2002).
California	". . . likely that he or she will engage in sexually violent criminal behavior" Sexually Violent Predator Act, Cal. Welf. & Inst. Code § 6600(a)(1) (2006).	"The statute does not require a precise determination that the chance of reoffense is better than even . . . the person is "likely" to reoffend if . . . the person presents a substantial danger, that is, a serious and well-founded risk, that he or she will commit such crimes if free in the community." *People v. Superior Court (Ghilotti)*, 44 P.3d 949, 972 (Cal. 2002).
District of Columbia	"The term "sexual psychopath" means a person, not insane, who by a course of repeated misconduct in sexual matters has evidenced such lack of power to control his or her sexual impulses as to be dangerous to other persons because he or she is likely to attack or otherwise inflict injury, loss, pain, or other evil on the objects of his or her desire." Sexual Psychopaths Act, D.C. Code § 22–3803 (1) (2012).	No case law clarifying likely.
Florida	"Likely to engage in acts of sexual violence if not confined in a secure facility for long-term control, care, and treatment." Involuntary Civil Commitment of Sexually Violent Predators, Fla. Stat. § 394.912(10)(b) (2010).	"We find that the term "likely" as used in the terminology "likely to engage in acts of sexual violence" is a widely used term that is commonly understood by men and women of common intelligence to mean highly probable or probable and having a better chance of existing or occurring than not." *Westerheide v. State*, 767 So. 2d 637, 652–3 (Fla. Dist. Ct. App., 2000).
Illinois	"Substantially probable that the person will engage in acts of sexual violence" Sexually Violent Persons Commitment Act, 725 Ill. Comp. Stat. Ann. 207/5(f) (1998).	"We determine that the phrase 'substantially probable' in the Act also means 'much more likely than not,' a standard higher than or equal to the 'likely' standard found constitutional in *Hendricks*. However, we emphasize that this definition cannot be reduced to a mere mathematical formula or statistical analysis." *People v. Hayes (In re Hayes)*, 747 N.E.2d 444, 453 (Ill. App. Ct., 2001).
Iowa	"*Likely to engage in predatory acts of sexual violence*; means that the person more likely than not will engage in acts of a sexually violent nature." Sexually Violent Predator Act, IA Code § 229.A 1 et seq. (2012).	"The State need only establish that more likely than not the respondent will commit additional sexually violent offenses." *In re Altman*, 723 N.W.2d 181, 188 (Iowa, 2006).
Kansas	"Likely to engage in repeat acts of sexual violence." Commitment of Sexually Violent Predators Act, Kan. Stat. Ann. §59–29a02(a) (2011).	"Nor is there support for suggesting that if an actuarial test is used, a particular percentage or category of risk must be shown on the actuarial risk assessment test before an offender may be characterized as a sexually violent predator." In re Care & Treatment of Williams, 253 P.3d 327 (Kan. 2011).
Massachusetts	"Likely to engage in sexual offenses if not confined to a secure facility." Care, Treatment and Rehabilitation of Sexually Dangerous Persons, Mass. Gen. Laws ch. 123A, § 1 (2010).	"While likely indicates more than a mere propensity or possibility, it is not bound to the statistical probability inherent in a definition such as "more likely than not," and the terms are not interchangeable. To conclude that likely amounts to a quantifiable probability, absent a more specific statutory expression of such a quantity, is to require mathematical precision from a term that, by its plain meaning, demands contextual, not statistical, analysis." *Commonwealth v. Boucher*, 880 N.E.2d 47, 50 (Mass 2002).
Minnesota	"Likely to engage in acts of harmful sexual conduct." Sexually Dangerous Person Act, Minn. Stat. 253B.02(18c)(a)(3) (2011).	"We now clarify that the SDP Act allows civil commitment of sexually dangerous persons who have engaged in a prior course of sexually harmful behavior and whose present disorder or dysfunction does not allow them to adequately control their sexual impulses, making it highly likely that they will engage in harmful sexual acts in the future."*In re Linehan*, 594 N.W.2d 867, 876 (Minn. 1999).

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Table 1 (*continued*)

Jurisdiction	Statute	Illustrative case law
Missouri	"More likely than not to engage in predatory acts of sexual violence." Sexually Violent Predators, Civil Commitment Act, Mo. Rev. Stat. §632.480(5) (2012).	"Although the instructions used below required findings that "the respondent is more likely than not to engage in predatory acts of sexual violence if he is not confined," this is not enough because they did not require the juries to "distinguish the dangerous sexual offender whose mental illness, abnormality or disorder subjects him to civil commitment from the dangerous but typical recidivist" *Thomas v. State (In re Thomas)*, 74 S.W.3d 789, 792 (Mo. 2002).
Nebraska	"Likely to engage in repeat acts of sexual violence means the person's propensity to commit sex offenses resulting in serious harm to others is of such a degree as to pose a menace to the health and safety of the public." Sex Offender Commitment Act, citing dangerous sex offender definition in Neb. Rev. Stat. § 71–1201 et seq. (2009).	"Medical expert testimony regarding causation based upon possibility or speculation is insufficient; it must be stated as being at least "probable," in other words, more likely than not." *G.H. v. Mental Health Board (In re G.H.)*, 781 N.W.2d 438, 445 (2010).
New Hampshire	"'Likely to engage in acts of sexual violence' means the person's propensity to commit acts of sexual violence is of such a degree that the person has serious difficulty in controlling his or her behavior as to pose a potentially serious likelihood of danger to others." Involuntary Civil Commitment of Sexually Violent Predators, N.H. Rev. Stat. Ann. § 135-E:1 et seq. (2007).	No case law clarifying likely.
New Jersey	"'Likely to engage in acts of sexual violence' means the propensity of a person to commit acts of sexual violence is of such a degree as to pose a threat to the health and safety of others." New Jersey Sexually Violent Predators Act, N.J. Stat. Ann § 30:4–27.26 (1999).	"The State must prove by clear and convincing evidence that the individual has serious difficulty controlling his or her harmful sexual behavior such that it is highly likely that the person will not control his or her sexually violent behavior and will reoffend." *In re W.Z.*, 801 A.2d 205, 219 (N.J. 2002).
New York	"Likely to be a danger to others and to commit sex offenses" Sex Offenders Requiring Civil Commitment or Supervision, N.Y. Mental Hyg. Law § 10.03 (McKinney 2011).	"It is not enough to find that it is "more likely than not" that the Respondent meets the requisite criteria. This Court must be satisfied that it is "highly probable" that the Respondent will commit the kinds of "hands-on" sexual crime which qualifies as a "sex offense"." *State v. P.H.,* 31 Misc.3d 1227(a), at *24 (May 16, 2011). This applies to New York County only; there is no binding statewide case law that clarifies 'likely.'"
North Dakota	"Likely to engage in further acts of sexually predatory conduct which constitute a danger to the physical or mental health or safety of others." Commitment of Sexually Dangerous Individuals, N.D. Cent. Code § 25–03.3–01 (8) (2011).	"We find these cases persuasive and we conclude the phrase "likely to engage in further acts of sexually predatory conduct" as used in N.D.C.C. § 25–03.3–13 means that the respondent's propensity towards sexual violence is of such a degree as to pose a threat to others. This definition prevents a contest over percentage points and the results of other actuarial tools, and allows experts to use the fullness of their education, experience and resources available to them in order to determine if an individual poses a threat to society." *Grosinger v. M.B.K. (In re M.B.K.)*, 639 N.W.2d 473, 477 (N.D. 2002).
South Carolina	"'Likely to engage in acts of sexual violence' means the person's propensity to commit acts of sexual violence is of such a degree as to pose a menace to the health and safety of others." Sexually Violent Predator Act, S.C. Code Ann. § 44–48–30 (9) (2011).	No case law clarifying likely.
Tennessee	"There is a substantial likelihood that the harm will occur unless the person is placed under involuntary treatment" Sex Offenders statute, TN Code Ann. § 33–6-804, citing definition of serious harm in Tenn. Code Ann. § 33–6-501 (2) (2007).	No case law clarifying likely.
Texas	"Likely to engage in a predatory act of sexual violence." Civil Commitment of Sexually Violent Predators, Tex. Health & Safety Code § 841.003 (2) (2012).	No case law clarifying likely.

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Table 1 (*continued*)

Jurisdiction	Statute	Illustrative case law
Virginia	"Likely to engage in sexually violent acts" Civil Commitment of Sexually Violent Predators Act, Va. Code Ann. § 37.2–900 (2009).	"It is not necessary for an expert to state with specificity that the respondent will likely engage in sexually violent acts in the future. Rather, the determination whether the respondent is likely to engage in sexually violent acts as defined in Code § 37.2–900 by clear and convincing evidence is an issue of fact to be determined by the court or jury upon consideration of the whole record." *DeMille v. Commonwealth*, 720 S.E.2d 69, 74 (Va. 2012).
Washington	"'Likely to engage in predatory acts of sexual violence if not confined in a secure facility' means that the person more probably than not will engage in such acts." Sexually Violent Predators, Wash. Rev. Code § 71.09.020 (7) (2009).	"As set out in the statute, the fact to be determined is not whether the defendant will reoffend, but whether the probability of the defendant's reoffending exceeds 50 percent." *In re Brooks*, 36 P.3d 1034, 1047 (Wash. 2001)
Wisconsin	"Likely that the person will engage in one or more acts of sexual violence." Sexually Violent Person Commitments, Wis. Stat. § 980.01. (7) (2008).	"In sum, we discern no reason why the "more likely than not" standard is not sufficiently narrowly tailored to achieve the State's compelling interest in protecting society by preventing acts of sexual violence through the commitment and treatment of those identified as most prone to commit such acts." *State v. Nelson (In re Nelson)*, 727 N.W.2d 364, 370 (Wis. Ct. App. 2006).
	"'Likely' means more likely than not." Sexually Violent Person Commitments, Wis. Stat. § 980.01 (2008).	

For states that have explicitly rejected any specific definition of likely, and for those states that have not yet provided a more specific definition, the practical question remains: How will judges or jurors operationalize likely? The law allows experts and fact-finders to define likely on a case-by-case basis so that, at least theoretically, jurors could consider an offender likely to reoffend if his risk of reoffense exceeds 0% by any amount. Indeed, an offender with a likelihood of recidivism that ranged anywhere from 0.01% to 100% might be considered likely to offend, depending on the perspective of the judge or jury deciding the case. Thus, these states evoke the important practical question: *What definition of likely will judges or jurors invoke?*

Risk Thresholds in Traditional Civil Commitment

When exploring risk thresholds in sex offender (SVP) civil commitment proceedings, it seems reasonable to look for reference to traditional civil commitment proceedings. However, here too, the courts provide little guidance. In the landmark case of *Addington v. Texas* (1979), the Court held that in traditional civil commitment of mentally ill persons, the state must prove dangerousness by clear and convincing evidence (typically considered beyond "more likely than not"). However, the Court declined to specify the minimum risk of violence or risk of recidivism necessary to prove "dangerousness," and no subsequent US Supreme Court has done so (Vars, 2013). In the absence of clear guidance, risk thresholds are therefore set by judges on a case-by-case basis. However, only one empirical study has explored *where* judges set these thresholds.

Monahan and Silver (2003) asked 26 judges what degree of violence risk they considered high enough to justify short-term civil commitment. When querying judges about specific numerical estimates, they found that, on average, judges considered a 26% likelihood that a patient would commit a violent crime sufficient to justify civil commitment. Examining each risk level individually, 11% of judges would order commitment for a patient who presented a 1% risk of committing a violent act, 38.5% of judges would order commitment with an 8% risk, 23.1% would order commitment with a 26% risk, and 26.9% of judges would order commitment with a 56% risk. All of the judges reported they would order commitment for a patient whose risk of violence was 56% or higher.

This single study addressing risk thresholds (Monahan & Silver, 2003) underscored two themes that may be relevant to sex offender civil commitment. First, there was great variability among the judges in the degree of risk needed to justify commitment. Second, many judges were willing to commit based on a low—even as low as 1% in some instances—level of risk.

Might we expect the same variability in civil commitment hearings for sex offenders under SVP laws? Would juries, like judges, demonstrate similar variability and willingness to commit with a low risk estimate?

The Present Study: How Do SVP Jurors Define Likely?

For the six states that explicitly reject a quantifiable definition of likely and the five states in which likely remains undefined, we are

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Table 2
Approaches to Defining "Likely To reoffend" in Statute and Case Law

Category	States	Sample
More likely than not (>50%)	Florida Iowa Missouri Nebraska[c] Washington Wisconsin	"As set out in the statute, the fact to be determined is not whether the defendant will reoffend, but whether the probability of the defendant's reoffending exceeds 50 percent." *In re Brooks*, 36 P.3d 1034, 1047 (Wash. 2001).
Highly likely Substantially probable	Arizona Minnesota[a] New Jersey[a] New York[b] Illinois	"The State must prove by clear and convincing evidence that the individual has serious difficulty controlling his or her harmful sexual behavior such that it is highly likely that the person will not control his or her sexually violent behavior and will reoffend." *In re W.Z.,* 801 A.2d 205, 219 (N.J. 2002).
Rejection of percentages	Federal System[a] California Illinois[d] Kansas Massachusetts North Dakota[a] Virginia	"While "likely" indicates more than a mere propensity or possibility, it is not bound to the statistical probability inherent in a definition such as "more likely than not," and the terms are not interchangeable. To conclude that "likely" amounts to a quantifiable probability, absent a more specific statutory expression of such a quantity, is to require mathematical precision from a term that, by its plain meaning, demands contextual, not statistical, analysis." *Commonwealth v. Boucher*, 880 N.E.2d 47, 50 (Mass. 2002).
Definition undetermined	District of Columbia New Hampshire Pennsylvania South Carolina Tennessee Texas	No case law defining "likely"

[a] Civil commitment decision must be made by a judge, not a jury. [b] The civil commitment process in New York is bifurcated. A judge or jury decides whether respondent is a dangerous sex offender who suffers from a mental abnormality. After this, only the judge can determine whether the respondent requires confinement or community supervision. [c] The commitment hearings in Nebraska are conducted not by a court, but by a Mental Health Board composed of a lawyer and two mental health clinicians. [d] Illinois appears to fall in the "Highly likely" category, in that an appellate court has specified "much more likely than not," but also in the "Rejection of percentages" category because the same court has "emphasize[d] that this definition cannot be reduced to a mere mathematical formula or statistical analysis" (*People v. Hayes (in Re Hays)*, 2001, p. 453).

left wondering what level of risk is considered likely to reoffend. Put simply, how likely is likely enough to justify civil commitment as an SVP? One straightforward approach to answering this question is to ask decision-makers (i.e., judges or jurors) about the level of risk they believe indicates an offender is likely to reoffend.

In Texas, jurors are informed that a sexually violent predator ". . . is a repeat sexually violent offender . . . [who] suffers from a behavioral abnormality that makes the person likely to engage in a predatory act of sexual violence" (Civil Commitment of Sexually Violent Predators, TX Health & Safety Code § 841.003(2), 2012). However, as detailed above, Texas is one of the five states that have offered no guidance for defining likely, leaving jurors considerable latitude. Therefore, in this study, we asked actual Texas jurors who had just rendered SVP verdicts a series of five questions addressing whether or not a specified level of estimated risk (or chance of sexual reoffense) indicated that a sex offender was "likely to commit a new sex crime."

Given our goal of studying juror perceptions of risk, there are both strengths and limitations to studying actual jurors who just rendered SVP verdicts. We know that all jurors heard information about estimated recidivism risk because experts presented Static-99 results in each trial. We also know that each juror was in a position to use risk assessment results along with other offender and offense information to make an actual decision about whether or not an offender was likely to reoffend. Because we also know each offender's risk measure scores, we can examine whether perceptions of risk vary depending on whether jurors heard scores suggesting low, moderate, or high risk. However, the cases these jurors heard differed in ways other than risk measure scores, and jurors probably responded to study questions in a manner that was shaped by the case details they had just considered. Case details differed across trials, so that different juries received a somewhat different education on actuarial assessments and had different offense information in mind. Although these circumstances necessarily limit the types of conclusions we can draw from this study, studies of actual jurors are rare, and this study context provided a unique opportunity to examine perceptions of what it means to be likely to reoffend among a group of jurors who heard risk measure testimony and made a real-life decision about whether an actual SVP respondent was likely to reoffend.

Method

Participants

Participants were actual jurors in SVP civil commitment hearings held in Montgomery County, Texas, the single location for all SVP hearings in the state of Texas. We were able to survey jurors at the end of 14 SVP hearings conducted between November 4, 2009 and July 8, 2010. All 14 hearings ended in commitment, which is consistent with the overall pattern of SVP hearing outcomes in Texas since the SVP law was enacted in 1999 (see Boccaccini et al., 2013; Murrie et al., 2008, 2009). At the time of this study, only one SVP hearing (that occurred before our data AQ: 3

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collection) had ever ended with the jury unanimously agreeing that the respondent did *not* have a "behavioral abnormality," and therefore did not warrant civil commitment.

Of the 168 jurors who deliberated to verdicts, 91.1% (n = 153) completed the study questions. Of these 153 jurors, 86 (56.2%) were female, 66 (43.1%) were male, and one did not report sex. Most of the jurors identified themselves as White (n = 138, 90.2%), while fewer identified themselves as Hispanic (n = 7, 4.6%), Black (n = 4, 2.6%), or did not report their racial/ethnic background (n = 4, 2.6%). The mean age among the jurors was 45.0 years (SD = 12.82).

SVP Trials

In each of the 14 SVP trials, a state-retained psychologist testified about risk, and presented results from the Static-99. In 13 trials, the expert also presented results from the Minnesota Sex Offender Screening Tool-Revised (MnSOST-R; Epperson, Kaul, & Hesselron, 1998). We know the Static-99 and MnSOST-R scores that these experts reported, but not the specific recidivism rates (because there are multiple rate reporting options). Although we did not study the content of their testimony, experts typically reported recidivism rates from an instrument's normative samples, and conveyed that the respondent poses a level of risk similar to other men with similar scores. A state-retained psychiatrist also testified in each case. The respondent's counsel called an expert to testify in only four of the 14 trials. In each instance, the respondent-retained expert was a psychologist.

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Juror Questionnaire

Jurors completed a brief, two-page questionnaire that included items addressing expert witnesses, risk measure scores, and what it meant to be likely to reoffend. There were five questions designed to measure jurors' beliefs about the level of risk, or chance of recidivism, they believe indicates that a sexual offender is likely to reoffend. The first question asked: "If there was a 1% chance that an offender would commit a new sex crime, would you say that he was likely to commit a new sex crime?" The response options were "Yes" and "No." The next question was identical, but specified a 15% recidivism rate. The next three questions specified recidivism rates of 25%, 50%, and 75%.

There were several reasons we selected these specific recidivism rates. First, we wanted to use rates that we believed would lead to floor and ceiling effects. In other words, we tried to use realistic rates that would lead to the most possible "No" responses (a floor effect) and a rate that would lead to the most possible "Yes" responses (a ceiling effect). Thus, we included a 1% likelihood of reoffending for the floor effect and a 75% likelihood of reoffending for the ceiling effect. We decided against using a 0% and 100% rates because these seemed unrealistic (i.e., no reasonable expert would report these rates). We used values of 15% and 25% because they were representative of the 5-year normative sample recidivism rates for Static-99 scores of 3 and 4 using the then-current Static-99 manual (Harris, Phenix, Hanson, & Thornton, 2003). We also used 50% to approximate the more-likely than-not standard. We used 75% to represent the public's estimate of the recidivism rate (see Levenson et al., 2007).

Because the items were always in the same order, we expected that jurors would respond No to the first item or items and then switch to responding Yes to all other items (i.e., a Guttman scale). The result would be a "threshold" value for each juror, indicating the minimum value (of the five options) that they considered to mean likely to reoffend.

We emphasize the possibility that listing these values in ascending order may have created an anchoring effect, in which some participants were more likely to endorse lower values. Similarly, by listing values in ascending order, rather than asking participants an open-ended question (e.g., "What risk of recidivism would you could consider "likely" to reoffend?"), we may have influenced responses and reduced the opportunity for participants to identify other risk thresholds. We had decided against the latter approach because our prior research with Texas SVP jurors indicated that only about 60% respond to open-ended questions asking them to provide a numeric value (Boccaccini et al., 2013). We were also particularly interested in the five specific values we provided, based on their relation to the popular Static-99 measure, as discussed above.

As part of the questionnaire, jurors also completed a series of questions about the value and objectivity of expert witnesses, but these were unrelated to our questions about likelihood of reoffending (these unpublished findings are available from the third author). In an effort to keep the questionnaire brief (as required by the presiding judge), we did not ask personal questions about the juror (e.g., education, income, and political views) beyond demographics.

Expert Witnesses and Risk Measure Scores

The state called a psychologist and a psychiatrist to testify in each of the 14 trials. The defense called an expert (always a psychologist) to testify in only four of the trials. At each trial, the state psychologist reported the offender's score on the Static-99, which ranged from 1 to 7 (M = 4.36, SD = 1.65). Because each Static-99 score has a different interpretation, jurors may have heard recidivism rate estimates ranging from 5% to 52%, depending on the offender's Static-99 score and the sample follow-up period (5, 10, or 15-year) an evaluator chose to report (Harris et al., 2003). Because the Static-99 authors released updated normative information for the Static-99 during the timeframe of this study (Helmus et al., 2009), we do not know whether experts interpreted results using the current manual (Harris et al., 2003) or the updated norms (Helmus et al., 2009). Nevertheless, evaluators often described Static-99 scores as falling into one of four risk categories (low, moderate-low, moderate-high, and high) and these groupings are identical using the original and updated norms. There was one respondent with a score in the low range, three with scores in the moderate-low range, seven with scores in the moderate-high range, and three with scores in the high range. For data analysis, we grouped jurors into three groups based on whether they heard a Static-99 score indicating low or moderate-low risk (n = 43), moderate-high risk (n = 75), and high risk (n = 35).

The state expert also reported a MnSOST-R score in 13 of the 14 trials, which ranged from 3 to 15 (M = 7.92, SD = 3.48). There was one offender with a MnSOST-R score in the low range, five with scores in the medium range, and seven with scores in the high range. For data analysis, we grouped jurors into two groups based on whether they heard a MnSOST-R score indicating low or medium risk (n = 67) or high risk (n = 74).

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Procedure

The presiding judge allowed the research team to recruit participants after jurors deliberated and rendered verdicts. At the end of each hearing, the judge introduced the researcher to the jurors, briefly explained the nature and purpose of the study, and conveyed that participation was voluntary. The judge then excused the jury to the jury room. The researcher then entered to explain the study purpose, provide information necessary for informed consent, and distribute the consent form and study questionnaire.

Results

Overall, jurors perceived even very low recidivism rates as suggesting that an offender would be likely to reoffend (see Table 3). For example, 53.6% said that a 1% chance that an offender would commit a new sex crime meant that he was likely to reoffend. Moreover, 81.7% said that a 15% chance meant an offender was likely to reoffend, 97.4% said that a 25% chance meant likely to reoffend, and 100% said that 50% and 75% rates meant likely to reoffend.

Variability in Threshold Values

We can also use these data to identify the number of jurors who supported specific threshold values for determining likely. For example, we can conclude that the threshold rate that jurors equated with likely was 1% or lower for the 53.6% of who reported that a 1% chance meant an offender was likely to reoffend. There were 43 (28.1%) jurors who reported that a 1% chance did not mean an offender was likely to reoffend, but that a 15% chance did. Thus, the threshold value was somewhere between 2% and 15% for 28.1% of jurors. There were 28 (15.7%) jurors who reported that a 15% chance did not mean an offender was likely to reoffend, but a 25% chance did. Thus, the threshold value was between 16% and 25% for 15.7% of jurors. Finally, the threshold value was between 25% and 50% for only 2.6% ($n = 4$) jurors.

We grouped jurors into three groups to examine whether juror thresholds for defining likely varied depending on trial or juror characteristics. The first group included the 82 jurors who reported that a 1% chance of recidivism meant an offender was likely to reoffend. The second group included the 43 jurors with threshold values between 2% and 15%. The third group included the 28 jurors with threshold values between 16% and 50%. We refer to these as low, moderate, and high threshold groups.

Risk Scores and Variability in Juror Risk Thresholds

We used a 3 (low, medium, and high Static-99 score) by 3 (low, medium, and high juror-risk threshold) χ^2 analysis to examine whether risk thresholds varied depending on whether jurors heard Static-99 scores indicating a low, moderate, or high level of risk. The χ^2 statistic indicated a statistically significant effect [$\chi^2(4, N = 153) = 15.48$, $p = .004$, Cramer's V = .23, 95% CI = .15, .34]. The significant effect was attributable to risk thresholds increasing as reported risk levels on the Static-99 increased (see Table 4). In other words, those who heard low Static-99 scores tended to report that a very low likelihood of reoffending meant likely to reoffend, while those who heard higher Static-99 scores were generally more likely to report that a higher level of risk was necessary before an offender should be considered likely to reoffend. For example, 74.4% of jurors who heard relatively low Static-99 scores reported that a 1% chance or reoffending meant an offender was likely to reoffend, compared with 52.0% of those who heard a moderate risk score and 31.4% of those who heard a high risk score (see Table 4). Jurors who heard high Static-99 scores were more likely than other jurors to report risk thresholds higher than 15% (31.4% vs. 18.7% and 7.0%).

There was a similar effect for the relation between MnSOST-R score groups and risk threshold groups [$\chi^2(2, N = 141) = 15.16$, $p = .001$, Cramer's V = .33, 95% CI = .18, .49]. Those who heard low-to-moderate MnSOST-R scores were more likely to report that only a 1% chance of recidivism meant an offender was likely to reoffend than jurors who heard high MnSOST-R scores (73.1% vs. 40.5%; see Table 4).

Table 3
Percent of Jurors Who Believe a Particular Risk Estimate Indicates the Offender is "Likely" to Reoffend

Stated "chance" of recidivism	Believe offender is likely to reoffend
1% chance	53.6%
15% chance	81.7%
25% chance	97.4%
50% chance	100%
75% chance	100%

Juror and Case Characteristics and Juror Risk Thresholds

Although we have only limited information about jurors and respondents in these SVP cases, we conducted a series of exploratory analyses to see if some jurors were more likely than others to identify low recidivism risk estimates as indicating that a respondent was likely to reoffend. Specifically, we could examine juror age, juror sex, and whether jurors heard testimony from a respondent expert.

Jurors who reported that a 1% chance of recidivism meant an offender was likely to reoffend were somewhat older ($M = 46.77$, $SD = 12.23$) than those who did not ($M = 42.82$, $SD = 13.26$), $t(146) = 1.88$, $p = .06$, Cohen's $d = .31$, 95% CI [−.02, .64]. Females were also more likely (61.6%) than males (43.9%) to report that a 1% chance of recidivism meant an offender was likely to reoffend, $\chi^2(1, N = 152) = 4.70$, $p = .03$, odds ratio = 2.05, 95% CI [1.07, 3.93]. Finally, jurors from cases without a respondent expert were more likely to conclude that an offender with a 1% chance of reoffending was likely to reoffend (58.9%) than those from cases with a respondent expert (39.0%), $\chi^2(1, N = 153) = 4.78$, $p = .03$, odds ratio = 2.24, 95% CI [1.08, 4.66]). However, none of these effects approached statistical significance ($p > .20$) for higher recidivism rates (e.g., 15%, 25%). In other words, some juror characteristics may slightly influence perceptions of whether or not very low risk estimates (i.e., 1%) suggest an offender is likely to reoffend, but juror and case characteristics were not associated with perceptions of higher risk estimates (15% or above).

Discussion

Most SVP statutes specify that civil commitment is justifiable only if an offender is *likely* to sexually reoffend. The current study

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Table 4
Relation Between Trial Respondent's Risk Measure Scores and Jurors' Risk Thresholds

Risk score group	Risk threshold		
	1% or lower	2% to 15%	16% to 50%
Static-99			
Low to low moderate (n = 43)	74.4%	18.6%	7.0%
Moderate high (n = 75)	52.0%	29.3%	18.7%
High (n = 35)	31.4%	37.1%	31.4%
MnSOST-R			
Low to moderate (n = 67)	73.1%	16.4%	10.4%
High (n = 74)	40.5%	36.5%	23.0%

Note. Percentage values refer to data in the same row.

shows that most jurors (82%) perceive even very low recidivism risk estimates (≤15%) as indicating an offender is likely to reoffend. In fact, more than half of jurors reported that they considered a 1% likelihood of reoffense likely. Furthermore, those jurors who heard the lowest empirical risk estimates (i.e., those who heard testimony about Static-99 scores in the low to moderate-low range) were the most likely to consider a 1% likelihood of recidivism as likely to reoffend.

One possible explanation for the relatively low risk thresholds is that jurors were not concerned strictly with the statistical likelihood of an event (i.e., reoffense), but rather the consequences of such an event. This possibility appears congruent with research on risk communication in other fields (e.g., climate change), which finds that laypersons interpret verbal probability labels referring to severe outcomes as denoting higher probabilities than the same probability labels referring to neutral outcomes (e.g., Harris & Corner, 2011). In the case of sexual offender recidivism, even a fairly low likelihood (in statistical terms) of a grave event (i.e., a sexual reoffense) may be sufficient for most jurors to favor civil commitment.

A second possible explanation may be that many jurors are relatively "innumerate," and their poor facility with numbers leaves them poorly equipped to operationalize concepts such as likely. Scholars have demonstrated that innumeracy is a significant problem among legal decision-makers (Koehler, 2006), which hinders understanding of risk (Peters, 2008; Reyna et al., 2009), and—perhaps most relevant to the current study—influences layperson's understanding of violence risk messages in civil commitment-type contexts (Scurich, Monahan, & John, 2012). Further support for the potential role of innumeracy comes from an earlier study of Texas SVP jurors (Boccaccini, Turner, Murrie, Henderson, & Chevalier, 2013). Here, jurors rated all respondents as being highly likely to reoffend, with similar ratings for the respondents who had the highest and lowest risk-measure scores. These results suggested that jurors either did not understand, or perhaps did not value, the risk communication messages intended to inform their decisions (see also Varela, Boccaccini, Cuervo, Murrie, & Clark, in press).

A third possible, and complementary, explanation for why some jurors set risk thresholds so low involves *motivated reasoning*. In short, people tend to arrive at the conclusions that they want to arrive at, but they do so only after constructing justifications—often via cognitive biases or selective attention to supportive information—for their conclusions (Kunda, 1990). In the context of SVP proceedings, there may be many reasons that jurors are motivated to civilly commit a repeat sexual offender (e.g., retribution, as documented by Carlsmith, Monahan, & Evans, 2007), AQ: 5 but jurors would rarely act on this (or any) motivation "merely because they want to" (Kunda, 1990). Rather, people AQ: 6

> . . . motivated to arrive at a particular conclusion attempt to be rational and to construct a justification of their desired conclusion that would persuade a dispassionate observer. They draw the desired conclusion only if they can muster up the evidence necessary to support it . . . (Kunda, 1990, pp. 482–483).

Of course, that evidence has often been selectively valued or dismissed depending on whether it supports their desired outcome.

Motivated reasoning is a broad phenomenon that has only recently been studied in the legal system (e.g., Simon & Scurich, 2011). However, strong evidence for motivated reasoning in SVP proceedings comes from a recent study that examined how mock-jurors responded to mock trial materials in which experts had clinically adjusted actuarial risk estimates (Scurich & Krauss, 2013). Here, participants who voted to commit the offender rated a risk assessment as highly acceptable when it indicated *high* risk (congruent with their decision to commit) but unacceptable when it indicated *low* risk (incongruent with their decision to commit). Similarly, when experts clinically adjusted actuarial risk upward (indicating higher risk, and more reason to commit), participants were more inclined to commit. However, when experts clinically adjusted actuarial risk downward (indicating lower risk, and less reason to commit), participants were no less inclined to commit. In short, Scurich and Krauss (2013) concluded that mock-jurors appeared motivated to civilly commit sex offenders, and information congruent with their preferred outcome was persuasive whereas information incongruent with their preferred outcome was not.

In our study, the fairly low levels of risk (i.e., 15% or below) that jurors considered evidence of likely reoffense seems to reflect some degree of motivated reasoning. However, the more compelling evidence for motivated reasoning comes from the group-level analyses. Specifically, those real jurors who heard a higher risk estimate (i.e., Static-99 scores in the moderate-high or high range) apparently considered higher levels of risk necessary to meet the statutory definition of likely. Most jurors who heard lower risk estimates (i.e., Static-99 scores in the low range) considered even a 1% chance of reoffense sufficient to be considered likely, thereby satisfying the statutory criteria necessary to civilly commit an offender and justifying their decision.

Limitations

These group-level differences underscore one of the limitations of our study. Although we asked jurors what probability of reoffense they considered likely in *the abstract*, they responded after participating in actual individual trials in which they had decided offenders met criteria to be committed as an SVP. Unfortunately, we had access to only limited information about each offender, and there were not enough trials to allow for the use of multilevel modeling to account for the nested nature of the jury data and variability attributable to jurors serving on the same jury. Although the details of the trials they decided may well have influenced their responses to study questions,

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this study could not examine many of the trial details (other than reported risk levels) that could have influenced juror responses to the questions about the term likely (e.g., offense violence, victim impact).

Other study limitations relate to our unique sample of jurors in a particular state. Of course, any study that relies on jurors from a single jurisdiction has uncertain generalizability. However, our sample of Texas jurors may be unique in ways that more clearly limit generalizability to other jurisdictions. Montgomery County, where all Texas SVP cases are tried, is ethnically diverse, but this diversity is not always well-reflected in the juries that decide SVP cases. Texas SVP trials have *almost always* resulted in decisions to commit the respondent, whereas other states have at least some variability in civil commitment decisions. To some extent, the high commitment rates may reflect a more stringent selection process (Texas offenders must have two or more qualifying sexual offenses to be considered for commitment, whereas many states allow commitment for offenders with only one offense). However, it may also reflect less tolerance for risk. Texas is also unique in that it is the only state that relies *entirely* on outpatient approaches to civil commitment (as opposed to inpatient hospitalization). At first glance, this may seem to explain why jurors appeared to tolerate less risk. In actuality, Texas policy precludes jurors from learning the details of civil commitment (including the fact that civil commitment is on an outpatient basis).

Implications for SVP Policy

Ostensibly, Texas jurors can set risk thresholds so low because Texas law has not defined how likely should be operationalized (see Tables 1 and 2). However, setting such a low bar for likely reoffense does raise questions about the broad applicability of SVP laws. For example, if the base rate of sexual offending among Texas sex offenders is 3% in the 4.7 years after release (see Boccaccini et al., 2009), and most jurors consider a 1% risk of recidivism likely, then it appears that most jurors would find the vast majority of sexual offenders eligible for civil commitment, at least based on the risk criteria in SVP statute (we did not examine other Texas SVP criteria, such as whether the offender had a "behavioral abnormality"). However, if most jurors find most sex offenders eligible for civil commitment, the civil commitment laws no longer serve their original purpose of intervening with only the most high-risk offenders.

Identifying where jurors set risk thresholds is also important in states that—unlike Texas—*do* identify a specific threshold for risk. For example, among the several states that define likely to reoffend as more likely than not (see Table 2), evidence that jurors set similarly low risk thresholds could be especially concerning. In our Texas sample, 97% of jurors set their risk threshold for likely at 25% or less, and *all* jurors set their risk threshold somewhere less than 50%. Thus, *every* juror defined likely as something *less than* more likely than not. In states that explicitly define likely as more likely than not, jury instructions *may* or *may not* influence jurors to set their risk thresholds accordingly. However, our results suggest that the default "risk threshold" among many jurors may be quite different from the one defined in statute or case law.

Of course, our findings are limited to one state (i.e., Texas), and it remains unclear where jurors in other states set their thresholds for likely reoffense. If our findings generalize to other jurisdictions that reject a numerical standard—an open question that requires further study—then those jurisdictions are inevitably setting a standard below more likely than not. By declining to assign a quantifiable probability to likely, the law, by default, apparently sets a fairly low threshold for likely.

Do legislatures and courts intend to set such a low threshold for likely? If so, then rejecting a numerical standard and leaving the definition to the jury works well. If, however, the justice system intends to set a higher standard, then leaving the definition of likely to the jury may not serve their intent. Some scholars argue that low thresholds for civil commitment are essentially unconstitutional and that only Illinois' *much* more likely than not interpretation would pass constitutional muster (Vars, 2013). However, we are aware of no widespread scholarly or legal consensus on what degree of reoffense risk should be considered likely.

Conclusions

We conducted this study in an attempt to answer a simple, but important question: What degree of recidivism risk do jurors believe indicates that a sexual offender is likely to reoffend? We sought answers from actual SVP jurors who had passed through the jury selection process, heard testimony from experts, and rendered SVP verdicts. Our finding that many jurors viewed even a 1% chance of reoffending as indicating that an offender is likely to reoffend has important implications for those involved in the SVP trial process, such as attorneys and experts who use ARAIs, but also legislators and appellate court judges who develop and clarify SVP laws. Specifically, these findings suggest that without further instruction, jurors do not necessarily consider *only* the highest-risk sexual offenders as likely to offend, but rather, they tend to consider even offenders with a low reoffense risk as likely to reoffend and therefore eligible for civil commitment.

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