CHAPTER 7
Scientific Evidence

By
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I. Introduction

This chapter will discuss scientific evidentiary issues that are common in sex offense cases including expert testimony, hypnosis, DNA testing, drug facilitators, polygraphs and Sexual Assault Nurse Examiners (SANEs). Washington law governing the admissibility of such evidence is also cited herein.

II. Expert Testimony

A. *Frye* Rule

1. General acceptance test

The *Frye* general acceptance test,[1] rather than the *Daubert* standard,[2] is used by Washington courts in determining the admissibility of scientific testimony.[3] The "general acceptance" test looks to the scientific community to determine whether the evidence in question has a valid, scientific basis.[4] If there is a significant dispute among experts in the relevant scientific community as to the validity of the scientific evidence, it is not admissible.[5] If expert testimony does not concern novel theories or sophisticated and technical matters, it need not meet stringent requirements for general scientific acceptance.[6]

2. Evidence considered by the court

In determining whether scientific evidence meets the *Frye* test, the court may consider, in addition to materials presented to it, sources outside the record such as scientific literature, law articles, and decisions in other jurisdictions.[7] However, the relevant inquiry by the court is whether there is acceptance by scientists, not by courts or legal commentators.[8]

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[1] *Frye v. United States*, 293 F. 1034 (D.C. Cir. 1923)
[2] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993)
[3] *State v. Copeland*, 130 Wn.2d 244, 922 P.2d 1304 (1996)
[4] *State v. Cauthron*, 120 Wn.2d 879, 887, 846 P.2d 502 (1993)
[5] Id.
[6] *State v. Ortiz*, 119 Wn.2d 294, 310-11, 831 P.2d 1060 (1992)
[7] *State v. Cauthron, supra*, at 888
[8] Id.

3. Standard of proof

Whether the *Frye* test is met is initially a question of preliminary fact decided by the trial court according to ER 104(a) and the preponderance of the evidence standard.[9] **Note**, however, that the preponderance standard, as it is applied in the application of the *Frye* test, requires a higher degree of certainty than the concept of probability used in civil matters, as the Washington Supreme Court explained in *Anderson v. Akzo Nobel Coatings, Inc*.[10] In order to establish a causal connection in most civil matters, the standard of confidence required is a "preponderance," or more likely than not, or more than 50 percent[11]. By contrast, "[f]or a scientific finding to be accepted, it is customary to require a 95 percent probability that is not due to chance alone." [12] The difference in degree of confidence to satisfy the *Frye* "general acceptance" standard and the substantially lower standard of "preponderance" required for admissibility in civil matters has been referred to as "comparing apples to oranges."[13]

The *Anderson* court noted:

> This court has consistently found that if the science and methods are widely accepted in the relevant scientific community, the evidence is admissible under *Frye*, without separately requiring widespread acceptance of the plaintiff's theory of causation. See, e.g., Gregory, 158 Wn.2d at 829, 147 P.3d 1201; Copeland, 130 Wn.2d at 255, 922 P.2d 1304; Reese, 128 Wn.2d at 309, 907 P.2d 282; Cauthron, 120 Wn.2d at 887, 846 P.2d 502. Of course the evidence must also meet the other evidentiary requirements of competency, relevancy, reliability, helpfulness, and probability.[14]

Once the *Frye* standard is satisfied, the evidence must still satisfy the two-part inquiry under ER 702. The expert witness must qualify as an expert, and the testimony must be helpful to the trier of fact.[15] Expert testimony will be helpful to a jury only if its relevance has been established.[16]

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[9] *State v. Carlson* 80 Wn. App. 116, 125, 906 P.2d 999 (1995) (in reference to *Daubert v. Merrell Dow Pharmaceuticals, Inc.* 509 U.S. 579 (1993))
[10] 171 Wn.2d 593, 260 P.3d 857 (2011)
[11] See Lloyd L Wiehl., "Our Burden of Burdens," 41 *Wash.L.Rev*. 109, 110 & n.4
[12] Marcia Angell, *Science on Trial: The Clash of Medical Evidence and The Law in The Breast Implant Case* 114 (W.W. Norton, 1997)
[13] *Anderson v. Akzo Nobel Coatings, Inc*., 171 Wn.2d 593, 608, 260 P.3d 857 (2011)
[14] Id. at 609
[15] *State v. Cauthron*, 120 Wn.2d 879, 889 (1993)
[16] *State v. Riker*, 123 Wn.2d 351, 364, 869 P.2d 42 (1994)(in reference to *State v. Petrich*, 101 Wn.2d 566, 575, 683 P.2d 173 (1984))

4. De Novo review

Questions as to the admissibility of scientific evidence under *Frye* are reviewed de novo.[17]

5. Miscellaneous scientific techniques

Case law concerning the general acceptance of certain scientific methods in the relevant scientific community, including thermography, chromatography, breathalyzer ampoules, psycholinguistics, and accident reconstruction, is provided in *5B Washington Practice, Evidence Law and Practice, §702.20, pp. 95-96.*

B. Child Sex Abuse Syndrome

Evidence of a child sex abuse profile or syndrome through expert testimony that behaviors of the victim are common behaviors of sexually abused children, has been ruled inadmissible on grounds that it has not been shown to be supported by accepted medical or scientific opinion.[18] It may, nevertheless, be admitted to explain the victim's reluctance to report abuse or to rebut a defense theory that the victim's behavior was inconsistent with sexual abuse by the defendant, so long as the expert does not offer an opinion that the victim has been abused by the defendant or that the defendant is guilty.[19] An observation that a victim exhibits behavior typical of a group constitutes neither a direct inference of the guilt of the defendant nor a conclusion that the child was in fact sexually abused, and thus does not invade the province of the jury.[20]

C. Rape Trauma Syndrome

The Supreme Court, in *State v. Black,*[21] held that the state may not present expert testimony that a victim is suffering from rape trauma syndrome because it is not established as a reliable means by which to prove rape occurred, but the court expressed a limitation that its holding applied only to expert testimony. Thus, a lay witness may testify that an alleged rape victim exhibited signs of emotional or psychological trauma following the alleged rape.

Expert witnesses may testify that sexually abused victims delay reporting alleged rape incidents in order to rebut a defense argument that the alleged victim's delay in reporting the incident correlates with the non-occurrence of rape.[22]

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[17] *State v. Copeland*, 130 Wn.2d 244, 255, 922 P.2d 1304 (1996)
[18] 13B *Wash.Prac., Criminal Law §2414*
[19] Id.
[20] Id.
[21] 109 Wn.2d 336, 745 P.2d 12 (1987)
[22] *State v. Graham*, 59 Wn. App. 418, 798 P.2d 314 (1990) (the court held that expert testimony that sexually abused girls often delay up to one year before reporting the abuse is admissible on the grounds that the testimony was not offered to prove that the rape occurred but rather to rebut the defense theory that the delay was inconsistent with rape)

In *Carlton v. Vancouver Care LLC*,[23] the Court of Appeals held that expert testimony concerning the rape trauma syndrome was admissible under ER 702 as relevant to a determination about whether rape caused a victim with dementia to experience psychological harm when the defendant had already admitted rape, and that the expert's testimony was beyond the experience of the common person and would assist the jury.

D. Battered Woman Syndrome

In Washington, the battered woman syndrome defense is not codified but is approved in case law. Evidence relating to the syndrome is generally admissible if relevant and not unfairly prejudicial. However, there are limitations to the use of this evidence.[24]

In *State v. Allery*[25] the court ruled that expert testimony on the battered woman syndrome was admissible when offered by the defendant, charged with murdering her husband, to explain the syndrome generally, "to provide a basis from which the jury could understand why defendant perceived herself in imminent danger at the time of the shooting,"and to explain why a battered woman would stay in a physically and psychologically dangerous relationship. [26] However, while expert testimony on the battered woman syndrome is admissible to support a woman's claim of self-defense against her batterer, it is not admissible if it is being offered to explain the defendant's actions against a person outside the battering relationship.[27]

By introducing evidence of battered woman syndrome, the defendant did not thereby put her character in issue. Accordingly, such evidence does not "open the door" to evidence of the defendant's bad reputation or specific instances of misconduct.[28]

In *State v. Ciskie*,[29] a rape case, the court held that expert testimony on battered woman syndrome is admissible to assist the jury in understanding the victim's delays in reporting the alleged rape and failing to discontinue her relationship with the defendant. It also held, however, that under ER 403, the trial court properly refused to allow the expert to express an opinion on the ultimate issue of whether the victim had been raped.

Despite the name, evidence of battered woman syndrome is not restricted to women. In particular, a child who is abused by a parent may exhibit the same behavior patterns. If the child assaults or kills the abuser, evidence of this "battered child syndrome" is admissible for the same purposes as evidence of battered woman syndrome.[30]

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[23] 155 Wn. App.151, 231 P.3d 1241 (2010)
[24] See 30 *Wash.Prac., Motions in Limine §5.33*
[25] 101 Wn.2d 591, 682 P.2d 312 (1984)
[26] Id. at 597
[27] *State v. Riker*, 123 Wn.2d 351 (1994)
[28] 13B *Wash.Prac., Criminal Law §3311*
[29] 110 Wn.2d 263, 751 P.2d 1165 (1988)
[30] *State v. Janes*, 121 Wn.2d 220, 850 P.2d 495 (1993)

E. Victim Grooming

In child sex abuse cases, expert testimony relating to the "grooming process" has been held unduly prejudicial when the evidence implies that the crime was in fact committed because the defendant engaged in similar behaviors.[31] However, the Court of Appeals has suggested that such testimony might be admissible to rebut a defense claim that the defendant's conduct was inconsistent with the behavior of those who commit child sex offenses.[32]

F. Examining Physician

Although a doctor or other expert may not diagnose sexual abuse based only on the victim's statements, a physician who has examined the victim of a sexual offense may testify that a victim's physical condition is consistent with sexual abuse.[33]

III. Testimony of Witnesses Who Have Been Hypnotized

A person, once hypnotized, is barred from testifying concerning information recalled while under hypnosis or testifying as to a fact which became available following hypnosis.[34] Accordingly, the testimony of a witness who has been previously hypnotized is limited to facts and events recalled before undergoing the hypnosis, and a party seeking to admit such testimony has the burden of establishing what the witness remembered prior to the hypnosis (e.g., providing some independent verification of the pre-hypnotic memory, such as a record preserved prior to hypnosis).[35] Any uncertainties in testimony of a witness as to facts that occurred before hypnosis should be resolved in the opponent's favor.[36]

If the court admits testimony as to what a witness remembers before hypnosis, the opponent must be given the opportunity to show the manner in which the hypnosis was conducted and the possible effect of hypnosis on the witness' testimony, and special jury instructions regarding hypnosis may be warranted.[37]

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[31] See 13B *Wash.Prac., Criminal Law §2414*
[32] *State v. Braham*, 67 Wn. App. 930, 841 P.2d 785 (1992); see also *State v. Quigg*, 72 Wn. App. 828, 837, 866 P.2d 655 (1994) (qualifications of expert to give opinion on "grooming")
[33] 13B *Wash.Prac., Criminal Law §2414, 60*
[34] *State v. Martin*, 101 Wn.2d 713, 684 P.2d 651 (1984)
[35] 13B *Wash.Prac., Criminal Law §2307*
[36] *State v. Martin*, supra at 722
[37] Id.

IV. DNA Evidence

A. Trace Analysis Requested by Convicted Felons

RCW 10.73.170(1)[38] provides that a person convicted of a felony in a Washington state court who currently is serving a term of imprisonment may submit to the court that entered the judgment of conviction a verified written motion requesting DNA testing, with a copy of the motion provided to the state office of public defense.

B. DNA Testing

1. CrR 4.7(b)(2)

CrR 4.7(b)(2) states:

> Notwithstanding the initiation of judicial proceedings, and subject to constitutional imitations, the court on motion of the prosecuting attorney or the defendant, may require or allow the defendant to:
> …
> (vi) permit the taking of samples of or from the defendant's blood, hair, and other materials of the defendant's body including materials under the defendant's fingernails which involve no unreasonable intrusion thereof.

2. Search and seizure issues

The taking of DNA constitutes a search and seizure under both the United States and Washington State constitutions.[39] In *State v. Gregory*,[40] the Washington Supreme Court held that a court order issued pursuant to CrR 4.7(b)(2)(vi) for a blood draw complies with the Fourth Amendment so long as it is supported by probable cause. Citing the seminal case, *Schmerber v. California*, 384 U.S. 757, 86 S. Ct. 1826, 16 L. Ed.2d 908 (1966), the *Gregory* court listed three requirements to determine whether a blood draw is reasonable: (1) there must be a clear indication that in fact the desired evidence will be found; (2) the chosen test must be reasonable; and (3) such test must be performed in a reasonable manner.[41] While the determination of historical facts relevant to the establishment of probable cause to order blood drawn is subject to the abuse of discretion standard, the legal determination of whether qualifying information as a whole amounts to probable cause is subject to de novo review.

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[38] http://apps.leg.wa.gov/rcw/default.aspx?cite=10.73.170
[39] U.S. Const. amend IV; Wash.Const. art I, §7. See *State v. Garcia-Salgado*, 149 Wn. App. 702, 705, 205 P.3d 914 (2009)
[40] 158 Wn.2d 759, 147 P.3d 1201 (2006)
[41] Id. at 822

C. DNA Evidence

1. General acceptance and admissibility

The underlying theory of DNA testing and typing is generally accepted and admissible.[42]

2. Evidence required

Once a positive laboratory result is obtained, the declaration of a "match" requires statistical analysis to be meaningful. Statistical evidence of genetic profile frequency probabilities must be presented to the jury when DNA evidence is admitted, and the methodology underlying the probability estimate must satisfy the *Frye* standard.[43] Use of the "product rule" in establishing statistical probabilities of genetic profile frequency in the human population is generally accepted within the relevant scientific community, and testimony based on the rule is admissible under *Frye*.[44] Questions about the size of the database underlying genetic frequency testimony go to weight and the admissibility rule governing expert testimony in general, and not to admissibility under *Frye*. If the principle that frequency calculations can be made from an adequate database is generally accepted, then whether the particular database is large enough is a question of application of the science to the particular case, i.e., a matter of weight.[45] Complaints about the quality of population databases used to support genetic frequency testimony go to weight and admissibility under ER 702, governing expert testimony in general, and not to admissibility under *Frye*.[46]

3. Evidence from other jurisdictions

Although Washington courts have not fully explored the admissibility of DNA evidence from other jurisdictions, such evidence gathered and analyzed in accordance with the law of the other jurisdiction, is admissible, even though it may not have been gathered and analyzed in accordance with Washington law. This general rule is sometimes called the "silver platter doctrine."[47]

V. Drug Facilitated Sexual Assault

Evidence of defendant's previous sexual assaults on other women was admissible in a prosecution for attempted rape and indecent liberties to prove that the defendant was the mastermind of an overarching plan, scheme, or design to drug and sexually abuse a series of women; the crimes were causally connected because, over period of many years, the defendant utilized his specialized knowledge and skill as a paramedic for the purpose of

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[42] *State v. Cauthron*, 120 Wn.2d 879(1993)
[43] *State v. Copeland*, 130 Wn.2d 244 (1996) in reference to *State v. Cauthron*, supra)
[44] Id at 270
[45] Id at 272
[46] Id at 273
[47] 13B *Wash.Prac., Criminal Law §2411*; see also 5B *Wash.Prac., Evidence Law and Practice §702.38*

drugging and sexually assaulting women who knew and trusted him, thus rendering them somnolent and wholly or partially amnesiac.[48]

A. Drug Facilitators

Perpetrators of sexual assault may use alcohol and/or drugs to facilitate sexual assault. Below is a list of the most commonly-used drugs to facilitate sexual assault:

1. Ecstasy, aka 3, 4-methylenedioxy amphetamine (MDMA)
   Schedule I, RCW 69.50.204(c)(11)
   http://apps.leg.wa.gov/rcw/default.aspx?cite=69.50.204
2. GHB/GBL, aka gamma-hydroxybutyric acid
   Schedule I, RCW 69.50.204(d)(1)
3. Rohypnol, aka flunitrazepam
   Schedule IV, RCW 69.50.210(b)(2)
   http://apps.leg.wa.gov/rcw/default.aspx?cite=69.50.210
4. Amphetamine/Methamphetamine
   Schedule II, RCW 69.50.206(d)(1) and (d)(2)
   http://apps.leg.wa.gov/rcw/default.aspx?cite=69.50.206
5. Lysergic Acid Diethlyamide (LSD)
   Schedule I, RCW 69.50.204(c)(21)

B. Crimes Commonly Charged in Drug Facilitated Sexual Assault

1. Indecent Liberties RCWA 9A.44.100
   http://apps.leg.wa.gov/rcw/default.aspx?cite=9A.44.100
   (1) A person is guilty of indecent liberties when he or she knowingly causes another person who is not his or her spouse to have sexual contact with him or her or another:
   …
   (b) when the other person is incapable of consent by reason of being mentally defective, mentally incapacitated, or physically helpless;
   (2) (a) Except as provided in (b) of this subsection, indecent liberties is a class B felony.

2. Rape in The Second Degree RCWA 9A.44.050
   http://apps.leg.wa.gov/rcw/default.aspx?cite=9A.44.050
   (1) A person is guilty of rape in the second degree when, under circumstances not constituting rape in the first degree, the person engages in sexual intercourse with another person:
   ….

[48] *State v. Lough*, 70 Wn.App. 302, 853 P.2d 920 (1993)

(b) when the victim is incapable of consent by reason of being physically helpless or mentally incapacitated;

(2) Rape in the second degree is a class A felony.

VI. Polygraphs

A. Generally

Washington courts limit polygraph evidence because polygraph testing has not attained general acceptance by the scientific community.[49] The Washington Supreme Court has suggested that it might reconsider whether unstipulated polygraph evidence is admissible if the proffering party demonstrates that polygraphy meets the *Frye* general acceptance standard.[50] However, the court has also observed that polygraph examinations are intrusive and implicate constitutional concerns.[51] Because the polygraph measures psychophysiological response, its scientific validity is assessed by psychologists.[52]

A law enforcement officer, prosecuting attorney, or other government official may not request or require a victim of an alleged sex offense to submit to a polygraph examination or other truth telling device as a condition for proceeding with the investigation of the offense. The refusal of a victim to submit to a polygraph examination or other truth telling device shall not by itself prevent the investigation, charging, or prosecution of the offense.[53]

Note: None of the rules discussed in this section restrict the admissibility of statements made during a polygraph test.

B. Stipulated Admissibility

Polygraph results may be admissible if both parties sign a written stipulation, providing for defendant's submission to the test and for the subsequent admission at trial, before the test is administered. The stipulation alone, however, does not assure admissibility. The trial judge has discretionary power to refuse to accept such evidence.

Once offered into evidence, the opposing party has the right to cross-examine the polygraph examiner with respect to (a) the examiner's qualifications and training; (b) the conditions under which test was administered; (c) the limitations of, and possibilities of error in, the technique of polygraphic interrogation; and (d) any other matter deemed pertinent to the inquiry, at the discretion of the trial judge. If such evidence is admitted, the trial judge should instruct the jury that the examiner's testimony, at most, tends only to indicate that defendant was not telling the truth at the time of the examination; and that

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[49] *State v. Ahlfinger*, 50 Wn. App.466, 468, 749 P.2d 190 (1988)
[50] Id. at 469
[51] *O'Hartigan v. Dep't of Pers.,* 118 Wn.2d 111, 116, 821 P.2d 44 (1991)
[52] Id. at 470
[53] 5D *Wash.Prac. Courtroom Handbook on Washington Evidence , §10.58.038*

it is for the jury to determine what corroborative weight and effect such testimony should be given.[54]

C. Evidence of Administration of Test

Occasionally issues arise, not as to the admissibility of the results, but as to the admissibility of the fact that a polygraph test was or was not given, or the fact that a witness was or was not willing to submit to a test. It is prejudicial error to permit the prosecutor to cross-examine a defendant concerning his or her failure to take a polygraph test.[55] Even evidence that a party has taken a polygraph is considered prejudicial and is inadmissible.[56] The fact that the defendant was willing to take a polygraph test is irrelevant and inadmissible on behalf of the defendant.[57] A federal court has ruled that, likewise, the state is not allowed to bolster the credibility of its witness by showing that the witness is willing to take a polygraph test.[58]

VII. Sexual Assault Nurse Examiners (SANEs)

In State v. Hudson,[59] Division Two of the Court of Appeals held that a sexual assault nurse examiner was properly allowed to testify as to the extent of the victim's injuries, but that the trial court erred in allowing the SANE nurse to testify that the injuries were the result of "nonconsensual" sex, which constituted an impermissible opinion on the defendant's guilt.

Though not a case involving a SANE nurse, Division Three of the Court of Appeals held in *State v. Florczak*, a prosecution for child molestation and sexual exploitation, that the trial court properly admitted a description of the incident given by the child to a social worker at the Eastside Sexual Assault Center for Children.[60]

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[54] *State v. Renfro*, 96 Wn.2d 902, 639 P.2d 737 (1982)
[55] *State v. Descoteaux*, 94 Wn.2d 31, 614 P.2d 179 (1980) (overruled on a different point in *State v. Danforth*, 97 Wn.2d 255, 643 P.2d 882 (1982)
[56] *Carnation Co., Inc. v. Hill*, 115 Wn.2d 184, 186, 796 P.2d 416 (1990)
[57] *State v. Rowe*, 77 Wn.2d 955, 468 P.2d 1000 (1970)
[58] *U.S. v. Herrera*, 832 F.2d 833 (4th Circ. 1987)
[59] 150 Wn. App. 646, 208 P.3d 1236 (2009)
[60] 76 Wn. App. 55, 882 P.2d 199 (1994)