

## Static-2002R: Revised Age Weights

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- 1) Summary of age analyses leading to creation of Static-2002R (November 2, 2009)
- 2) Coding rules for Static-2002R age item (January 4, 2010). This serves as an appendix to the official Static-2002 coding rules (Phenix, Doren, Helmus, Hanson, & Thornton, 2009)
- 3) Static-2002R coding form (November 2, 2009)

NOTE: A description of Static-2002R was distributed in October, 2009, with incorrect age weights. The incorrect version was distributed at the Association for the Treatment of Sexual Abusers Annual Research and Treatment Conference in Dallas, Texas, and posted between October 7 and October 28, 2009 on the Static-99 website [www.static99.org](http://www.static99.org). Please do not use that version.

## **Age and Static-2002 (November 2, 2009)**

Similar to other types of crimes, sexual offending tends to decrease steadily with age (Barbaree & Blanchard, 2008; for research on general offending, see Hirschi & Gottfredson, 1983; Sampson & Laub, 2003). Age is therefore an important factor to consider in actuarial risk assessments. Although Static-2002 allocates more weight to age at release than Static-99, recent research found that Static-2002 does not fully account for the effect of aging in the oldest age groups (60 years old and older; Thornton, Helmus, & Hanson, 2009). Consequently, new age weights were required for Static-2002.

The age weights developed for Static-99R (Helmus, 2009) were tested with Static-2002 and subsequently adopted (with a constant value of 1 added to the age weights to maintain similar substantive interpretations for the overall risk categories). This resulted in the creation of Static-2002R (see below for more details). The Static-99R age weights were tested for Static-2002 rather than developing new weights because (1) there was no reason to suspect the effect of age on Static-99 would be different for Static-2002, and (2) the Static-99R analyses contained substantially more samples while also including all samples for which we have Static-2002 data (described in Hanson, Helmus, & Thornton, in press).

### **New Age Item Developed for Static-99R**

In a project combining multiple samples to re-norm the recidivism estimates for Static-99 (see Helmus, 2009), age at release added significant incremental predictive validity to Static-99, necessitating a new age item to better account for the relationship between age and recidivism. To examine the optimal age weights for Static-99, the original age item (whereby offenders less than 25 years old receive 1 point) was removed to create an age-free Static-99 score. The overall sample was then divided into two subsamples: one for the development of new Static-99 age weights, and another sample for validation. Of offenders with age-free Static-99 scores and information on age at release ( $k = 23$ ,  $n = 8,128$ ), offenders with follow-up periods of less than 10 years ( $k = 23$ ,  $n = 5,736$ ) were used as the development sample, and offenders with follow-up periods greater than 10 years were retained for validation ( $k = 15$ ,  $n = 2,392$ ). This method allowed the new Static-99 age weights (developed using 5-year recidivism information) to be validated with another sample at 5 years, and also permitted testing of its generalization to 10 year recidivism rates.

The principles guiding the selection of the new age weights were as follows: a) each unit should approximate the Static-99 units found in other analyses (rate ratio and odds ratio of approximately 1.35); b) offenders with the median age (39 years old) should receive a score of 0 for this item; c) the revised measure should have higher overall predictive accuracy than the original; and d) age should no longer contribute significantly once the Static-99 scale with the new age item is included.

The relationship between age and recidivism in the construction sample ( $n = 5,736$ ) was explored and the following new age weights were proposed: offenders less than 35 would receive 1 point on Static-99, offenders age 35 to 39.999 would receive 0 points, offenders age 40 to 59.999 would have 1 point subtracted from Static-99, and offenders age 60 and older would have 3 points subtracted from Static-99. The revised Static-99 scale with these age weights was called Static-99R.

Analyses of the validation sample found that Static-99R showed slightly higher relative predictive accuracy than the original Static-99. Additionally, age at release did not add significant predictive accuracy after controlling for Static-99R, indicating that the revised Static-99 scale sufficiently accounts for age at release.

### **Static-2002R: Testing the Static-99R Age Item with Static-2002**

Static-2002R was created by removing the original age item and adding the new age item developed for Static-99R. A constant value of 1 was added to the Static-99R age weights to maintain similar substantive interpretations for the overall risk categories in Static-2002R. Adding a constant does not influence the predictive accuracy, but simply shifts the mean score to be more compatible with the distribution of score in the original Static-2002. In the revised age item, offenders less than 35 receive 2 points on Static-2002R, offenders age 35 to 39.999 receive 1 point, offenders age 40 to 59.999 receive 0 points, and offenders age 60 and older have 2 points subtracted from their total.

Static-2002R and Static-2002 were compared using 7 of the 8 samples included in Hanson, Helmus, and Thornton (in press; Langton et al., 2007, was excluded due to missing information on age at release). There was a slight increase in relative predictive accuracy for Static-2002R, as measured by the Area Under the Receiver Operating Characteristic Curve (using fixed follow-up periods: at 5 years, ROC for Static-2002R was .712, compared to .710 for Static-2002; at 10 years, ROC for Static-2002R was .690, compared to .688 for Static-2002).

Table 1 displays the results of logistic regression analyses (at 5 and 10 years) and Cox regression analyses, all controlling for routine versus non-routine samples. Note that both linear and curvilinear age effects were examined. In all analyses, age at release did not add significant predictive accuracy after controlling for Static-2002R, whereas the curvilinear effect of age did add incremental predictive accuracy to the original Static-2002 when examining the 10 year logistic regression analysis and the Cox regression analysis. These results indicate that the original Static-2002 did not sufficiently account for age at release, whereas the revised scale does.

There was insufficient data to meaningfully examine the age weights separately for rapists and child molesters. Offender type differences were examined, however, for Static-99R. Age at release did not add significant incremental predictive validity to Static-99R for either rapists or child molesters, suggesting that Static-99R sufficiently accounts for age in both groups (Helmus, Thornton, & Hanson, 2009). Although further research on Static-2002R with rapists and child molesters is desirable, it is reasonable

to expect that the Static-99R findings would generalize to Static-2002R because the scales are similar and the samples for which Static-2002R data was available was included in the Static-99R analyses.

Table 1

Comparing Static-2002R to Static-2002

	Static-2002R					Static-2002				
	$\chi^2$ change	df	p	Exp(B)	95% C.I.	$\chi^2$ change	df	p	Exp(B)	95% C.I.
Logistic Regression										
5 years										
Static scale	90.63	1	<.01	1.30	1.23 – 1.38	86.56	1	<.01	1.30	1.23 – 1.38
Age	1.91	1	.17			3.40	1	.06		
Age <sup>2</sup>	0.42	1	.52			2.65	1	.10		
Logistic Regression										
10 years										
Static scale	65.09	1	<.01	1.27	1.19 – 1.34	61.34	1	<.01	1.27	1.19 – 1.35
Age	0.33	1	.86			0.36	1	.55		
Age <sup>2</sup>	1.74	1	.19			4.69	1	.03		
Cox Regression										
Static scale	134.74	1	<.01	1.26	1.21 – 1.31	129.78	1	<.01	1.26	1.21 – 1.31
Age	0.69	1	.40			1.96	1	.16		
Age <sup>2</sup>	1.40	1	.24			6.14	1	.01		

*Note.* Values represent incremental contribution after controlling for previously entered variables. For logistic regression, all analyses begin with controlling for routine/non-routine samples (not shown), then Static, then age, and then age<sup>2</sup>. In Cox regression, sample was used as a strata variable.

## Static-2002R Age Item Coding Rules

Version January 4, 2010. Replaces Age Item in Official Static-2002 Coding Rules (Phenix, Doren, Helmus, Hanson, & Thornton, 2008)

### 1. Age at Release from Index Sex Offence

**The Basic Principle:** The rates of almost all crimes decrease as people age (Hirschi & Gottfredson, 1983; Sampson & Laub, 2003). Sexual offending does not appear to be an exception. Most studies have found that older sexual offenders are lower risk to reoffend than younger sexual offenders (Barbaree & Blanchard, 2008; Hanson, 2002, 2006). Research has found that the original Static-99 did not fully account for age at release and that a new age weighting improved the predictive accuracy (Helmus, 2009<sup>1</sup>). With the new age weighting (used in this item), age at release from index sex offence no longer significantly contributed to the prediction of sexual recidivism. Similar results were found in subgroups of rapists and child molesters.

**Information Required to Score This Item:** To complete this item the evaluator should confirm the offender's birth date (from official records if possible) or have other knowledge of the offender's age through collateral report or offender self-report. The evaluator would benefit from access to an official criminal record as compiled by police, court or correctional authority that identifies the date of release from the index sex offence.

**The Basic Rule:** Score -2 to 2 points depending on the age of the offender when they are released from their index sex offence referencing the table below.

Age	Score
18 to 34.9	2
35 to 39.9	1
40 to 59.9	0
60 or older	-2

Under certain conditions, such as anticipated release from custody, the evaluator may be interested in an estimate of the offender's risk at some specific time in the future such as coding the Static-2002R in pre-sentencing situations. Static-2002R may be scored months before the offender's release to the community and the offender may advance an age scoring category by the time he is released. For assessing risk in the future, consider what his age will be on the date of release from the index sex offence. In this case, you calculate risk based upon age at exposure to risk.

Sometimes the offender's release date may be uncertain. For example, he may be eligible for parole but does not qualify for release due to an inadequate release plan. In

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<sup>1</sup> Helmus, L. (2009). *Re-norming Static-99 recidivism estimates: Exploring base rate variability across sex offender samples*. Unpublished master's thesis, Carleton University, Ottawa, Ontario, Canada.

these cases it may be appropriate to use some form of conditional wording indicating how his risk assessment would change with a delayed release date.

Note that in some cases, the index sex offence identified for Static-2002R scoring purposes may not be the same as the offender's current offence. For example, sometimes an offender is serving a sentence for a non-sexual offence but they are assessed as a sex offender due to a prior sexual offence. Because this item is scored using the age at release from the index sex offence rather than age of release from the current offence, the offender may now be significantly older than when they were released from their index sex offence. For example, an offender may be released from custody on their index sex offence at age 35 and they may be released at age 55 from a current prison term after committing a non-sexual offence. In these cases where an offender had committed subsequent non-sexual offences and is now much older, the effect of aging on sexual recidivism (as well as their continued criminality after the index sex offence) will need to be considered outside the Static-2002R.

<b>STATIC-2002R CODING</b>		
<b>ITEMS</b>	<b>Raw Score</b>	<b>Subscore</b>
<u><b>AGE</b></u> <b>1. Age at Release</b> 18 to 34.9 = 2 35 to 39.9 = 1 40 to 59.9 = 0 60 or older = -2		
<u><b>PERSISTENCE OF SEXUAL OFFENDING</b></u> <b>2. Prior Sentencing Occasions for Sexual Offences:</b> No prior sentencing dates for sexual offences = 0 1 = 1 2, 3 = 2 4 or more = 3  <b>3. Any Juvenile Arrest for a Sexual Offence and Convicted as an Adult for a Separate Sexual Offence:</b> No arrest for a sexual offence prior to age 18 = 0 Arrest prior to age 18 and conviction after age 18 = 1  <b>4. Rate of Sexual Offending:</b> Less than one sentencing occasion every 15 years = 0 One or more sentencing occasions every 15 years = 1		
Persistence Raw Score (subtotal of Sexual Offending) 0 = 0 1 = 1 2, 3 = 2 4, 5 = 3		
<b>Persistence of Sexual Offending SUBSCORE</b>		
<u><b>DEVIANT SEXUAL INTERESTS</b></u> <b>5. Any Sentencing Occasion For Non-contact Sex Offences:</b> No = 0 Yes = 1  <b>6. Any Male Victim:</b> No = 0 Yes = 1  <b>7. Young, Unrelated Victims:</b> Does <u>not</u> have two or more victims < 12, one of them unrelated = 0 Does have two or more victims < 12 years, one must be unrelated = 1		
<b>Deviant Sexual Interest SUBSCORE</b>		
<u><b>RELATIONSHIP TO VICTIMS</b></u> <b>8. Any Unrelated Victim:</b> No = 0 Yes = 1  <b>9. Any Stranger Victim:</b> No = 0 Yes = 1		
<b>Relationship to Victims SUBSCORE</b>		

<b>GENERAL CRIMINALITY</b>		
<b>10. Any Prior Involvement with the Criminal Justice System</b> No = 0 Yes = 1		
<b>11. Prior Sentencing Occasions For Anything:</b> 0-2 prior sentencing occasions for anything = 0 3-13 prior sentencing occasions = 1 14 or more prior sentencing occasions = 2		
<b>12. Any Community Supervision Violation:</b> No = 0 Yes = 1		
<b>13. Years Free Prior to Index Sex Offense:</b> <ul style="list-style-type: none"> <li>• More than 36 months free prior to committing the sexual offence that resulted in the index conviction AND more than 48 months free prior to index conviction = 0</li> <li>• Less than 36 months free prior to committing the sexual offence that resulted in the index conviction OR less than 48 months free prior to conviction for index sex offence = 1</li> </ul>		
<b>14. Any Prior Non-sexual Violence Sentencing Occasion:</b> No = 0 Yes = 1		
General Criminality raw score (subtotal General Criminality items) 0 = 0 1, 2 = 1 3, 4 = 2 5, 6 = 3		
General Criminality SUBSCORE		
<b>TOTAL -2 to 13</b>		

**TRANSLATING STATIC-2002R SCORE INTO RISK CATEGORIES**

<u>Score</u>	<u>Label for Risk Category</u>
-2 through 2 =	Low
3, 4 =	Low-Moderate
5, 6 =	Moderate
7, 8 =	Moderate-High
9 plus =	High

## References

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