

### Performance of Individual Items of Static-99/R and Static-2002/R

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### The Evolution of Static-99R/Static-2002R

- STEP 1: Identify Static Risk factors
  - Metas (Hanson & Bussière, 1996, 1998)
  - Development samples (Hanson & Thornton, 2000)
- STEP 2: Combine Risk Factors
  - RRASOR (Hanson, 1997)
- STEP 3: Add More Risk Factors
  - STATIC-99 (Hanson & Thornton, 1999, 2000)
- STEP 4: Refine items, create subscales
  - STATIC-2002 (Hanson & Thornton, 2003)
- STEP 5: Revise Age Weights
  - STATIC-2002R (Helmus, Thornton, Hanson, & Babchishin, 2010)

### Static-99/R & Static-2002/R

- Static-99/R: 10 items
  - Total score is sum of all items
- Static-2002/R: 14 items
  - Divided into 5 subscales
  - Total score is sum of 5 subscale scores

STATIC-2002R CODING		
ITEMS	Raw Score	SUBSCORE
<b>AGE</b>		
1. Age at Release		
18 to 24.9 = 2		
25 to 34.9 = 1		
35 to 39.9 = 1		
40 to 59.9 = 0		
60 or older = 2		
<b>PERSISTENCE OF SEXUAL OFFENDING</b>		
2. Prior sentencing Occasions for Sexual Offences:		
No prior sentencing dates for sexual offences = 0		
1 = 1		
2, 3 = 2		
4 or more = 3		
3. Any Juvenile Arrest for a Sexual Offence and Convicted as an Adult for a Separate Sexual Offence:		
No arrest for a sexual offence prior to age 18 = 0		
Arrest prior to age 18 and conviction after age 18 = 1		
4. Rate of Sexual Offending:		
Less than one sentencing occasion every 15 years = 0		
One or more sentencing occasions every 15 years = 1		
Persistence Raw Score (total of Sexual Offending)		
0 = 0		
1 = 1		
2, 3 = 2		
4, 5 = 3		
Persistence of Sexual Offending SUBSCORE		

<b>DEVIANT SEXUAL INTERESTS</b>		
5. Any sentencing Occasion For Non-contact Sex Offences:		
No = 0		
Yes = 1		
6. Any Male Victim:		
No = 0		
Yes = 1		
7. Young, Unrelated Victims:		
Does not have two or more victims < 12, one of them unrelated = 0		
Does have two or more victims < 12 years, one must be unrelated = 1		
Deviant Sexual Interest SUBSCORE		
<b>RELATIONSHIP TO VICTIMS</b>		
8. Any Unrelated Victim:		
No = 0		
Yes = 1		
9. Any Stranger Victim:		
No = 0		
Yes = 1		
Relationship to Victims SUBSCORE		

GENERAL CRIMINALITY	
10. Any Prior Involvement with the Criminal Justice System No = 0 Yes = 1	
11. Prior Sentencing Occasions For Anything: 0-2 prior sentencing occasions for anything = 0 3-13 prior sentencing occasions = 1 14 or more prior sentencing occasions = 2	
12. Any Community Supervision Violation: No = 0 Yes = 1	
13. Years Free Prior to Index Sex Offense: • 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 • 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	
14. Any Prior Non-sexual Violence Sentencing Occasion: No = 0 Yes = 1	
General Criminality raw score (subtotal General Criminality items) 0 = 0 1, 4 = 2 5, 6 = 3	
General Criminality SUBSCORE	
TOTAL -2 to 13	

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### Previous Findings

- Logistic regression analyses (Hanson, Helmus, Thornton, 2010; Helmus, 2009; Helmus, Hanson et al., 2012)
  - Static-99/R and Static-2002/R predict recidivism consistently across samples
  - Recidivism rates for a given Static score are NOT consistent across samples

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### Research Questions

- 1) Do all the Static items significantly predict sexual recidivism?
- 2) Do the items predict consistently across samples?
  - a) If not, what moderates the predictive accuracy?

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### Should we expect stability?

- Validation studies differ on a variety of factors
  - Charging practices
  - Criminal record info available (charges/convictions)
  - Depth of info (offence name vs details, victim info)
  - Sample preselection
  - Type of offender (rapist vs. child molester)

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### Issues in examining items

- Small effect sizes
- Low recidivism rates
- Low endorsement rates
  
- Meta-analytic approach needed

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### Samples

- From Helmus (2009)
- 22 samples with Static-99/R item data
  - (N = 8,053)
- 8 samples with Static-2002/R item data
  - (N = 2,951)
  - Any prior involvement in criminal justice system and prior sentencing occasions combined into one item
  - 4 items identical to Static-99 (unrelated victim, stranger victim, male victim, non-contact offence)
    - Not examined separately for Static-2002 samples

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Sample	N	Sample	N
Allan et al., 2007	493	Harkins & Beech, 2007	198
Bengtson, 2008	311	Hill et al., 2008	84
Bigras, 2007	480	Johansen, 2007	273
Boer, 2003	299	Knight & Thornton, 2004	466
Bonta & Yessine, 2005	133	Långström, 2004	1278
Brouillette-Alarie & Proulx, 2008	228	Langton, 2003	354
de Vogel et al., 2004	121	Milton, 2003	116
Eher et al., 2009	706	Nicholaichuk, 2001	280
Epperson, 2003	178	Swinburne Romine et al., 2008	681
Haag, 2005	198	Ternowski et al., 2004	247
Hanson et al., 2007	702	Wilson et al., 2007	227

### 1) Do the items predict?

- Cox regression meta-analysis
- Effect size: average hazard ratio
- Fixed-effect
  - Interpretation restricted to studies included in meta
- Random-effects
  - Generalizes to all studies

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### Q1 Results: Age Items

Item	Fixed-Effect		Random-effects	
	HR	95% CI	HR	95% CI
Age (continuous item)	.977	.971 - .983	.975	.967 - .982
Static-99 age item	1.314	1.101 - 1.568	1.314	1.101 - 1.568
Static-2002 age item	1.256	1.132 - 1.394	1.309	1.137 - 1.494
Static-99R/2002R age item	1.279	1.202 - 1.360	1.302	1.206 - 1.406

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### Q1 Results: Static-99/R Items

Item	Fixed-Effect		Random-effects	
	HR	95% CI	HR	95% CI
Ever lived with lover	1.667	1.461 - 1.902	1.700	1.449 - 1.996
Index non-sexual violence	1.202	1.031 - 1.402	1.223	918 - 1.630
Prior nonsex violence	1.525	1.334 - 1.743	1.547	1.306 - 1.833
Prior sex offences	1.653	1.561 - 1.750	1.662	1.508 - 1.832
Prior sentencing dates	1.840	1.608 - 2.105	1.841	1.547 - 2.190
Noncontact sex conviction	2.366	2.029 - 2.758	2.474	1.975 - 3.098
Any unrelated victim	2.292	1.906 - 2.756	2.294	1.905 - 2.762
Any stranger victim	2.020	1.766 - 2.311	2.064	1.680 - 2.538
Any male victim	1.454	1.260 - 1.679	1.432	1.178 - 1.741

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### Q1 Results: Static-2002/R Items

Item	Fixed-Effect		Random-effects	
	HR	95% CI	HR	95% CI
Prior sex sentencing dates	1.624	1.468 - 1.796	1.671	1.459 - 1.915
Juvenile sex arrest	1.674	1.212 - 2.310	1.674	1.212 - 2.310
High rate of sex offences	2.430	1.988 - 2.970	2.916	2.008 - 4.233
2+ child victims, one unrelated	1.424	1.145 - 1.772	1.424	1.145 - 1.772
Prior sentencing occasions	1.538	1.365 - 1.732	1.552	1.345 - 1.792
Any breaches	2.066	1.686 - 2.531	2.273	1.703 - 3.034
Years free prior to index	2.310	1.890 - 2.824	2.346	1.847 - 2.980
Prior nonsexual violence	1.548	1.272 - 1.884	1.552	1.255 - 1.920

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### Summary: Do the Items Predict?

- All but Static-99/R item "Index non-sexual violence"
  - Non-significant in random-effects analyses

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## 2) Do the items predict consistently?

- Cox regression meta-analysis
- $Q$  statistic: Significance test for variability across studies
- $I^2$  statistic: Effect size describing magnitude of variability
  - 25%, 50%, and 75% reflect small, moderate, and large variability

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## Q2 Results: Consistency of age items

Item	$Q$	$p$	$I^2$	$k$	$n$
Age (continuous item)	33.80	.038	37.87	22	8,025
Static-99 age item	17.73	.666	0.0	22	8,053
Static-2002 age item	10.83	.146	35.36	8	2,950
Static-99R/2002R age item	29.20	.109	28.07	22	8,025

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## Q2 Results: Consistency of Static-99/R items

Item	$Q$	$p$	$I^2$	$k$	$n$
Ever lived with lover	27.96	.141	24.90	22	8,004
Index non-sexual violence	60.20	<.001	65.12	22	8,053
Prior nonsex violence	31.06	.073	32.40	22	8,053
Prior sex offences	55.35	<.001	62.06	22	8,053
Prior sentencing dates	31.98	.059	34.34	22	8,053
Noncontact sex conviction	38.38	.012	45.28	22	8,053
Any unrelated victim	21.15	.450	0.70	22	8,053
Any stranger victim	42.66	.004	50.78	22	8,053
Any male victim	34.28	.034	38.74	22	8,053

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## Q2 Results: Consistency of Static-2002/R items

Item	$Q$	$p$	$I^2$	$k$	$n$
Prior sex sentencing dates	11.66	.112	39.96	8	2,951
Juvenile sex arrest	4.84	.680	0.0	8	2,951
High rate of sex offences	21.52	.003	67.47	8	2,951
Remove Knight/Thornton	9.86	.131	39.15	7	2,485
2+ child victims, one unrelated	2.84	.899	0.0	8	2,944
Prior sentencing occasions	9.43	.223	25.74	8	2,951
Any breaches	11.81	.107	40.74	8	2,947
Years free prior to index	9.17	.241	23.65	8	2,949
Prior nonsexual violence	7.88	.343	11.22	8	2,941

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## Summary: Do the items predict consistently?

- The following items had significant variability across samples
  - Index non-sexual violence (Static-99/R)
  - Prior sex offences (Static-99/R)
  - Noncontact sexual conviction (Static-99/R, 2002/R)
  - Any stranger victim (Static-99/R, 2002/R)
  - Any male victim (Static-99/R, 2002/R)
  - High rate of sex offending (Static-2002/R)

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## Moderator Analyses

- $Q_{\text{between}}$ : Overall variability ( $Q$ ) partitioned into variability within each moderator level and between moderators
- Tested:
  - Preselected high risk/need sample (versus all other)
  - Recidivism criteria (charges vs. convictions)
  - Country (Canada, US, UK, other)
  - Offender type (rapist vs child molester)
    - Tested within-sample difference in effect sizes

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### Index Non-Sexual Violence

- 22 studies, 8 have negative effects
- Country is significant moderator ( $Q_{\text{between}} = 11.26, df = 3, p = .010$ )

Moderator	HR	95% CI	k	n
Canada	1.373	1.075–1.754	10	3,148
US	1.703	1.211–2.396	4	1,598
UK	.804	.403–1.604	2	314
Other	.901	.696–1.165	6	2,993

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### Prior Sex Offences

- 22 studies: Positive effect in all (range of 1.152 to 2.858), significant in all but 3
- Significant moderators
  - High risk/need samples ( $Q_{\text{between}} = 16.09, df = 1, p < .001$ )
  - Recidivism criteria ( $Q_{\text{between}} = 12.04, df = 1, p < .001$ )
  - Country ( $Q_{\text{between}} = 8.95, df = 3, p = .030$ )

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### Prior sex offences

Moderator	HR	95% CI	k	n
High risk/need samples	1.435	1.312–1.570	7	1,736
Other samples	1.821	1.691–1.961	15	6,317
Charges	1.479	1.358–1.610	9	3,377
Convictions	1.812	1.678–1.957	13	4,676
Canada	1.549	1.414–1.698	10	3,148
US	1.523	1.344–1.727	4	1,598
UK	1.769	1.388–2.256	2	314
Other	1.848	1.677–2.037	6	2,993

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### Any noncontact sex offence

- 22 studies: Positive effects (range from 1.163 to 8.085)
- Significant moderators
  - High risk/need samples ( $Q_{\text{between}} = 9.51, df = 1, p = .002$ )
  - Recidivism criteria ( $Q_{\text{between}} = 4.05, df = 1, p = .044$ )

Moderator	HR	95% CI	k	n
High risk/need samples	1.709	1.321–2.211	7	1,736
Other samples	2.830	2.338–3.426	15	6,317
Charges	1.968	1.554–2.492	9	3,377
Convictions	2.707	2.212–3.313	13	4,676

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### Any stranger victim

- 22 studies: 1 negative effect. The rest positive (range from 1.131 to 5.382)
- Significant moderators
  - High risk/need samples ( $Q_{\text{between}} = 19.92, df = 1, p < .001$ )
  - Type of offender (effect sizes higher for child molesters)

Moderator	HR	95% CI	k	n
High risk/need samples	1.410	1.146–1.735	7	1,736
Other samples	2.623	2.198–3.130	15	6,317
Difference between CMs and Rapists	.352	.124–.579	11	4,686

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### Any Male Victim

- 22 studies: 5 have negative effects (total range of .119 to 3.184), significant in all but 3
- No moderators significant

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### High Rate of Sex Offences

- All studies have positive and significant effect sizes (ranging from 1.438 to 6.659)
- Knight/Thornton is statistical outlier; once removed, variability non-significant

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### Overall Summary

- All items significantly predict except Static-99 item Index Non-Sexual Violence
- Several items demonstrate significant variability
- Some: Variability in magnitude of relationship
  - Prior sex offences, high rate of sex offending, noncontact sex offence, stranger victim
- Others: Variability in whether they predict and how much
  - Index non-sexual violence, male victims

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### Explaining Variability

- Large effects for sample type: diminished accuracy in high risk/need samples
- Little difference in accuracy based on offender type
  - Though stranger victims predicts better for child molesters
- Some differences based on recidivism criteria and country
  - Jurisdictional variation?
  - Depth and quality of information?

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