

Static-99(R) and Static-2002(R): How to Interpret and Report in Light of Recent Research

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Why Assess Risk?

- Understand Threat
- Promote Public Safety
- Promote Effective Treatment
 - Risk/Need/Responsivity
- Risk-Based Decisions in Corrections and Mental Health
 - Family re-integration, Parole, Civil Commitment, Sentencing
- Allocation of Scarce Resources

Risk Assessment

- Source of the risk (explanation)
- Nature of potential harm
- Likelihood of harm
 - Relative risk (Karl is twice as risky as David)
 - Absolute risk (34% after 5 years)

Empirical Probabilities

- Life is too complicated to think through all the possibilities
- Estimate probabilities by observing the outcome in groups of offenders “like him”.

Types of Risk Assessment

Type of Evaluation	Factors	Overall Evaluation	Recidivism Estimates
Unstructured Clinical Judgement	?	Professional Judgement	No
Empirical-Actuarial	Empirically Derived	Mechanical Actuarial	Yes
Structured Professional Judgement	Theory	Professional Judgement	No
Mechanical <small>SVR-20/HCR-20 (add items) SRA/STABLE-2000</small>	Theory	Mechanical	No

Hanson & Morton-Bourgon (2009) Meta-analysis

- 1972-2008 (median 2004)
- 151 documents; 110 studies; 118 samples
- 37% published
- Total n = 45,398 sexual offenders
- 16 countries
 - Canada, US, UK, France, Netherlands, Germany, Denmark, Australia, Sweden, Austria, New Zealand, Belgium, Taiwan, Japan, Switzerland, Spain
- Four languages
 - English, French, Chinese, Spanish

d “standardized mean difference”

- How much are the recidivists different from the non-recidivists, in comparison to how much the recidivists and non-recidivists are different from each other.

.20 small
 .50 medium
 .80 large

Prediction of sexual recidivism

Measures Designed for Sexual Recidivism	d (95% CI)	N (k)
Empirical Actuarial	.67 (.63-.72)	24,089 (81)
Mechanical	.66 (.58-.74)	5,838 (29)
Structured Judgement	.46 (.29-.62)	1,131 (6)
Unstructured	.42 (.32-.51)	6,456 (11)

Actuarial – Empirical (Sex Recidivism)

	d (95% CI)	N (k)
Static-99	.67 (.62-.72)	20,010 (63)
RRASOR	.60 (.54-.65)	11,031 (34)
Static-2002	.70 (.59-.81)	3,330 (8)
MnSOST-R	.76 (.65-.87)	4,672 (12)
Risk Matrix –2000	.67 (.56-.77)	2,755 (10)

Accuracy and Error

- Inter-Rater Reliability
- Relative Risk (rank order; rate ratios)
- Absolute Recidivism Rates
- Confidence Intervals for Group Estimates
- Extent of Unmeasured, External Risk Factors
 - Incremental validity studies
 - “unexplained” variability across studies

Inter-Rater Reliability – STATIC-99

Study	Size	Statistic	Reliability
Barbaree et al. (2001)	30	Pearson r – total scores	.90
Hanson (2001b)	55	% agreement-items	.91
		Kappa- items	.80
		Intra-class r – total score	.87
Sjöstedt & Långström (2001)	20	Kappa – items	.90
Harris et al. (2003)	10	Intra-class r - total scores	.87

Inter-rater Reliability – STATIC-2002

Study	Size	Statistic	Reliability
Langton et al. (2007)	25	Pearson r	.90
Haag (2005)	66	Pearson r	.84
Knight & Thornton (2007)	258	Pearson r	.89
Bengtson (2008)	20	Intra-class Correlation	.96

Standard Error of Measurement

$$\text{SEM} = \text{SD} \sqrt{1 - r_{xx}}$$

SEM: STATIC-99

$$\text{SEM} = 1.97 (1 - .87)^{1/2} = .71$$

$$95\% \text{ C.I.} = 1.96 \times .71 = 1.39$$

Result: 19 times out of 20, the offender's true score will be within ± 1.4 points of the observed score

SEM: STATIC-2002

$$\text{SEM} = 2.6 (1 - .90)^{1/2} = .82$$

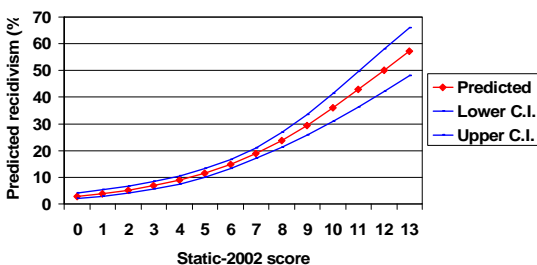
$$95\% \text{ C.I.} = 1.96 \times .82 = 1.61$$

Result: 19 times out of 20, the offender's true score will be within ± 1.6 points of the observed score

Variability of Group Estimates

- Confidence Intervals
 - Get narrower as sample size increases
 - Intervals derived from logistic regression uses information from full sample (not just specific score)

Example: 10 year Sexual Recidivism 95% Confidence Intervals for Logistic Regression Recidivism Estimates



Assumptions for Group Confidence Intervals

- All individuals in each category have the same probability of recidivism
- All relevant risk factors have been measured
 - BUT neither Static-99 nor STATIC-2002 claim to measure all relevant risk factors (heterogeneity within groups is expected)
- Requires assumptions about the similarity between the individual and the group data

Incremental Validity Studies

Study	Static	Other measure
Thornton (2002)	99	SRA
Hanson et al. (2007)	99	STABLE-2007
Hanson & Helmus (2009)	02	STABLE-2007
Knight & Thornton (2007)	99,02	SRA

Incremental Validity Studies

Study	99, 02	Other measure
Craig et al. (2007)	99	SRA
Beech et al. (2002)	99	“Deviance”
Olver et al. (2005)	99	VRS-SO Needs
Allen et al. (2007)	99	Treatment Needs

Incremental Validity Studies

- Easy to find studies in which measures of dynamic risk factors/criminogenic needs add incrementally above Static-99 and Static-2002 scores for the prediction of sexual recidivism

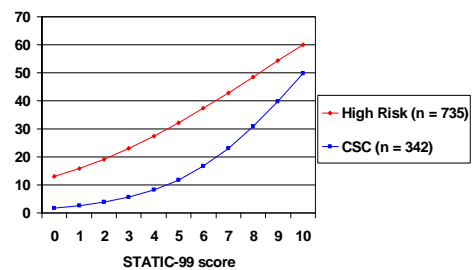
Accuracy and Error: Strengths

- **High** Inter-Rater Reliability
- **Consistent** Relative Risk (rank order; rate ratios)
- **Narrow** Confidence Intervals for Group Estimates

Accuracy and Error: Absolute Recidivism Rates

- Unmeasured, External Risk Factors
- Shown by
 - Incremental validity studies
 - “unexplained” variability across studies

10 Year Sexual Recidivism Rates (from logistic regression estimates)



Base Rates

Routine samples

“Everybody”

- Consecutive cases

Non-representative samples

Pre-selected

- Treatment Needs
- High Risk
- Psychiatric
- Online-Only Offenders
- Only Child Molesters

Static-99(R) and Static-2002(R): How to Interpret and Report in Light of Recent Research

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Part 2: Summarizing Current Research and
Introducing Static-99R and Static-2002R

Purpose of our research

- Are new norms needed for Static-99?
- What should the recidivism estimates for Static-99 and Static-2002 look like?
- What should we do with base rates variability across samples?

Obtaining Samples

- Sought all Static-99/Static-2002 replications
- Required
 - Appropriate population (e.g., adult male sex offenders)
 - Complete data for Static scores (Ever Lived with Lover – only permissible missing item)
 - Recidivism rates based on fixed follow-up periods (5 years and 10 years)

Static-2002: 8 samples

- Bengtson (2008)
- Bigras (2007)
- Boer (2003)
- Haag (2005)
- Hanson et al. (2007)
- Harkins & Beech (2007)
- Knight & Thornton (2007)
- Langton et al. (2007)

NOTE: These 8 samples were also included in the Static-99 research

Static-99: 28 samples with sexual recidivism data

- Allan et al. (2007)
- Bartosh et al. (2003)
- Bengtson (2008)
- Bigras (2007)
- Boer (2003)
- Bonta & Yessine (2005)
- Brouillette-Alarie & Proulx (2008)
- Cortoni & Nunes (2007)
- Craig et al. (2006)
- Craissati et al. (2008)
- de Vogel et al. (2004)
- Eher et al. (2008)
- Endrass et al. (2009)
- Epperson (2003)
- Haag (2005)

Static-99: 28 samples with sexual recidivism data

- Hanson et al. (2007)
- Harkins & Beech (2007)
- Hill et al. (2008)
- Johansen (2007)
- Knight & Thornton (2007)
- Långström (2004)
- Langton (2003)
- Milton (2003)
- Nicholaichuk (2001)
- Saum (2007)
- Swinburne Romine et al. (2008)
- Ternowski (2004)
- Wilson et al. (2007a,b)

Note: Harris et al. (2003) also obtained but with violent recidivism data only

Preparing the datasets

- Corrected coding errors or inconsistencies where possible
- Deleted cases if:
 - No follow-up information
 - Any item other than “ever lived with a lover for two years” is missing
 - Inconsistencies not resolvable

Basic descriptive information

- Most offenders released 1990 or later
 - Static-99: >80%; Static-2002: ~70%
- Samples from Canada, US, UK, Europe
- Samples primarily treated
 - Static-99: only one untreated sample
 - All other samples: either mostly treated or mixed
- Mean age was 39 (Static-2002) to 40 (Static-99)

Basic descriptive information

- Roughly half used charges as recidivism criteria
 - Static-99: 13 samples used charges, 15 used convictions
 - Static-2002: 4 used charges, 4 used convictions
- Approximately half the offenders were child molesters
 - Static-99 (k = 15, n = 6,335): 53% child molesters, 37% rapists
 - Static-2002 (k = 5, n = 1,860): 55% child molesters, 45% rapists

Overview of Analyses

Analyses

- Logistic regression
 - Absolute and relative risk (B_0 and B_1)
- Cox regression analyses
 - Does not provide a base rate estimate
- Meta-analysis of logistic regression coefficients
 - Fixed effect for moderator analyses
 - Random effect for recidivism estimates

Logistic regression

- Requires standard (fixed) follow-up time
- B_0 (intercept) – predicted value of DV when IV equals zero
 - Logistic regression: expressed as log odds
 - Proxy for base rate – absolute risk
 - Can center on different scores to examine base rates at different points on Static
- B_1 (slope) – amount of change in DV associated with one-unit increase in IV
 - Logistic regression: expressed as average log odds ratio
 - Measure of predictive accuracy – relative risk

Cox Regression

- Purpose: examine incremental contribution of predictor variable(s) in survival data
- Has the advantages of survival analysis (correct for unequal follow-up – allows for more cases to be included)
- No intercept (looks at relative risks): can't be directly used to produce recidivism estimates

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Meta-analysis

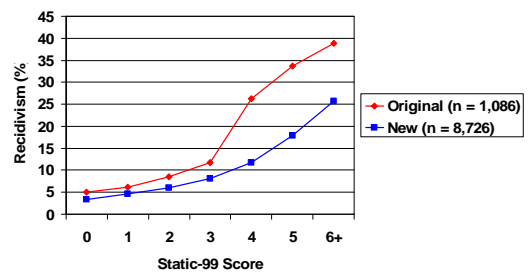
- Fixed effect model
 - Conceptually, results restricted to the studies used
 - Variability across samples measured separately (in the Q statistic)
- Random effect model
 - Conceptually, estimates population from which the studies are a part
 - Incorporates variability across samples into the error term (confidence intervals are larger)
- If variability across studies is low ($Q < df$), both models provide identical results
- Aggregating logistic regression results – uses fixed follow-up periods

Warning: Fluctuating sample sizes

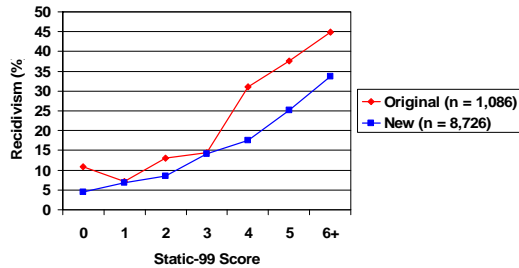
- Overall data on sexual recidivism
 - Static-2002 (k = 8, n = 2,959)
 - Static-99 (k = 28, n = 8,893)
- 5 year logistic regression: approximately 2/3 of total sample
 - Static-2002 (k = 8, n = 1,865)
 - Static-99 (k = 27, n = 6,285)
- 10 year logistic regression: approximately 1/3 of total sample
 - Static-2002 (k = 5, n = 1,104)
 - Static-99 (k = 18, n = 2,528)
- Moderator analyses: n 's fluctuate depending on which samples have info

Are new Static-99 norms needed?

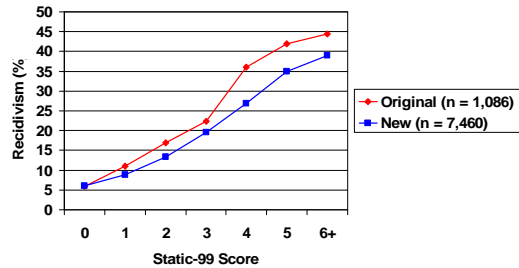
Sexual Recidivism at 5 years (Survival Analysis)



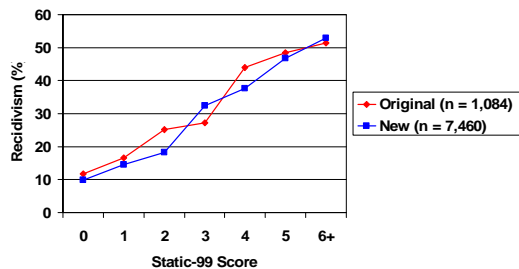
Sexual Recidivism at 10 years (Survival Analysis)



Violent Recidivism at 5 years (Survival Analysis)



Violent Recidivism at 10 years (Survival Analysis)



New Static-99 norms are needed: Cox Regression

- Sexual recidivism
 - $\chi^2 = 51.2$, $df = 1$, $p < .001$ ($Exp(B) = .59$)
 - After controlling for Static-99, new samples show approximately 60% the recidivism rate of original samples
- Violent recidivism (controlling for rapist vs child molester)
 - $\chi^2 = 15.1$, $df = 1$, $p < .001$ ($Exp(B) = .74$)
 - After controlling for Static-99 and offender type, new samples show approximately 75% the recidivism rate of original samples

Exploring Static-99 & Static-2002 risk properties (relative and absolute) across samples

NOTE: Analyses will focus on sexual recidivism from here onwards

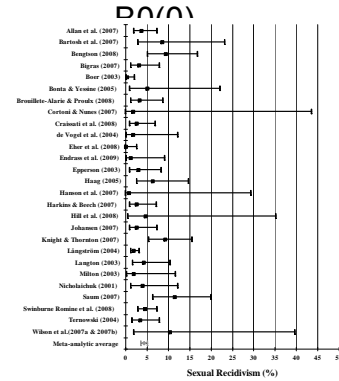
Static-2002 logistic regression meta-analysis

	<i>M</i>	95 % CI	<i>Q</i>	<i>k</i>	<i>n</i>
Five Years					
<i>B_i</i>	0.26	0.20 – 0.31	5.69	7	1,892
<i>B₀</i> Centered 0	4.1%	2.8 – 6.1	17.62**	7	1,892
Ten Years					
<i>B_i</i>	0.24	0.17 – 0.30	4.45	4	1,085
<i>B₀</i> Centered 0	7.0%	4.6 – 10.4	12.62**	4	1,085

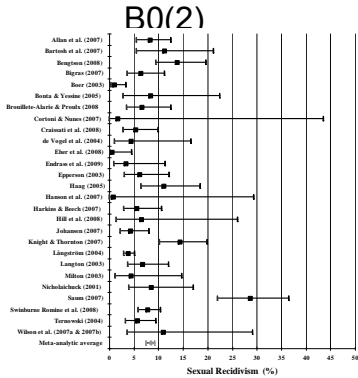
Static-99 logistic regression meta-analysis

	<i>M</i>	95 % CI	<i>Q</i>	<i>k</i>	<i>n</i>
Five Years					
<i>B_I</i>	0.31	0.27 – 0.35	24.91	25	6,233
<i>BO</i> Centered 0	4.3%	3.6 – 5.1	59.73***	27	6,281
<i>BO</i> Centered 2	8.4%	7.5 – 9.3	149.09***	27	6,281
<i>BO</i> Centered 5	17.6%	16.3 – 19.0	144.71***	27	6,281
Ten Years					
<i>B_I</i>	0.29	0.24 – 0.34	23.92	17	2,628
<i>BO</i> Centered 0	7.1%	5.7 – 8.8	42.74***	17	2,628
<i>BO</i> Centered 2	11.8%	10.3 – 13.4	56.10***	17	2,628
<i>BO</i> Centered 5	24.6%	22.4 – 27.0	57.73***	17	2,628

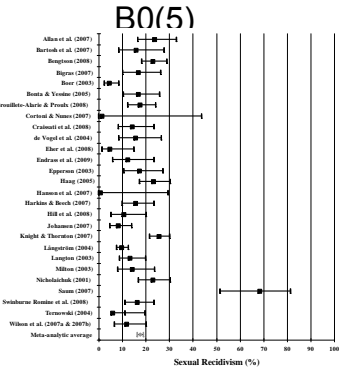
Variability Across Studies: Static-99



Variability Across Studies: Static-99



Variability Across Studies: Static-99



Trying to explain variability across samples....

Moderator Analyses using Static-99

What Factors Might Affect Absolute Recidivism Estimates?

Methodological Factors	Individual-level Factors	Systems-level Factors
Number of recidivism sources	Treatment	Country
Street time	Dynamic risk factors	Sample type
Recidivism definition	Age at release	Time period
Length of follow-up	Race	Detection rates
Quality of assessment	Rapist vs. child molester	Correctional philosophy
Use of national criminal records		Community supervision

Methodological Factors: Non-significant

	Q due to moderator	df	p
Used 2+ recid sources	1.84	1	>.10
Used national records	0.43	1	>.50
Cited coding rules	1.14	1	>.25

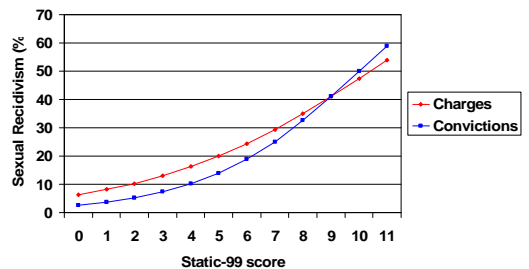
Methodological Factors: Closer look

- Use of street time
 - Significantly higher recidivism rates when street time used (Q = 14.74, df = 1, p < .001)
 - More than 80% of cases from one unusually high risk sample (Bridgewater; Knight & Thornton, 2007)
 - Cox regression with larger sample of non-Bridgewater cases using street time
 - No effect (x2 change = 1.8, df = 1, p = .179)

Methodological Factors: Closer look

- Recidivism Criteria (charges vs convictions)
 - Significant (Q = 16.51, df = 1, p < .001), but interacted with Static-99 scores (x2 change = 10.5, df = 1, p < .001)
 - Pattern of results not logical

Sexual Recidivism (%) 5 year Fixed follow-up



Methodological Factors: Closer look

- Recidivism Criteria (charges vs convictions)
 - Better test: compare charges vs convictions within same study
 - 5 studies available (n = 1,318)
 - 181 charged; 159 subsequently convicted
 - Rate ratio of 1.14
 - Insufficient to explain variability in base rates

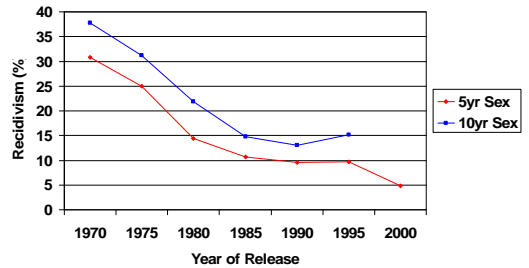
Treatment & Race: Non-significant

	Q due to moderator	df	p
Started treatment	0.64	1	>.25
Completed treatment	2.76	1	>.05
Non White	2.40	1	>.10

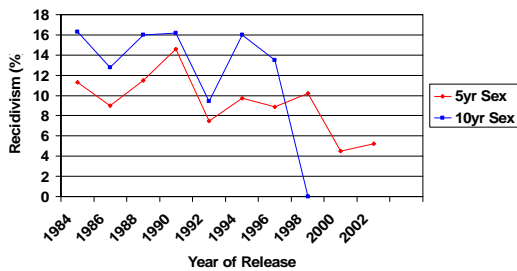
Rapists vs Child Molesters

- Confusing!
- Static-2002
 - Significant (x2 change = 4.5, df = 1, p < .05), with higher recidivism among *rapists*
- Static-99
 - Non-significant in Cox regression (x2 change = 0.1, df = 1, p = .800)
 - Significant in meta-analysis (Q = 5.05, df = 1, p < .05), with higher recidivism among *child molesters*
- No effect that is consistent and large enough to be of substantive value

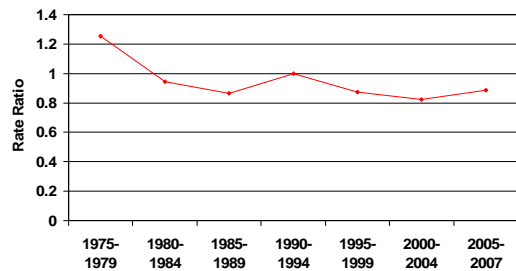
Year of Release



Year of Release



Year of Release: Controlling for Sample Type



Year of Release

- Some pattern discernible, with and without controlling for sample type
- Insufficient evidence to justify including it in recidivism estimates

Country

- Predicted recidivism rates for Static-99 score of 2 (Q = 27.39, df = 4, p < .001)
 - United States: 8.9% (k = 5, n = 1516)
 - Canada: 6.8% (k = 11, n = 1,793)
 - United Kingdom: 5.4% (k = 3, n = 491)
 - Europe: 3.8% with outlier removed (k = 5, n = 1,697)
- Europe significantly lower than US and Canada

Country

- Effects largely disappear when control for sample type (to be discussed)
 - Logistic regression with country, age at release, sample type
 - 5 years: Canada significantly lower than US
 - 10 years: Country not significant
 - Meta-regression: after sample type entered, country does not contribute to prediction of base rates ($Q = 6.98, df = 3, p > .05$)

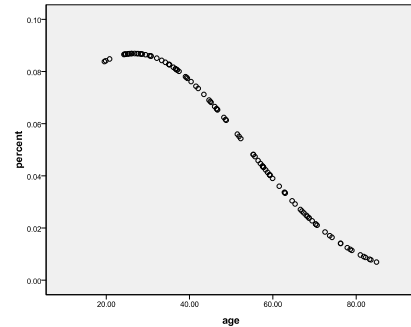
What moderators are we left with?

- Age at release
- Sample type

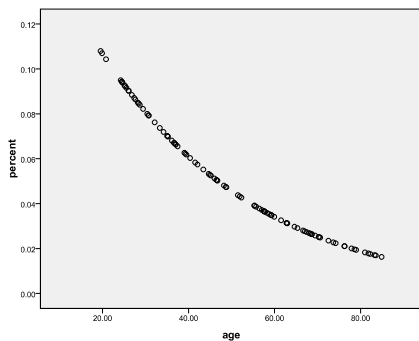
Age at Release

- Rate ratio of .98 (95% C.I. of .98 to .99)
 - Expected recidivism rate of 32-year old offenders is 98% of the recidivism rate of 31-year old offenders, which is 98% of 30-year old offenders, etc....
 - Tested with Cox regression using sample as strata (x^2 change = 28.7, $df = 1, p < .001$)
- Non-linear (adding age^2 , x^2 change = 10.7, $df = 1, p = .001$)
- Adding age^3 non-significant

Age at release: Static-99



Static-99 without the age item



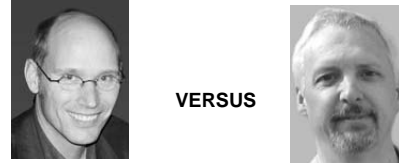
Developing new age item

- Cases with age at release info and age-free Static-99 scores ($k = 23, n = 8,128$)
 - Development sample ($k = 23, n = 5,736$) – all cases with < 10 years follow-up
 - Validation sample ($k = 15, n = 2,392$) – all cases with 10+ years follow-up

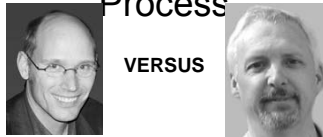
Selecting new age weights

- Principles guiding selection
 - Similar odds ratio for Static-99 (one-point Static increase associated with ~1.35 increase in odds of recidivism)
 - Median age (39) get score of 0
 - Higher predictive accuracy than original Static
 - Age should no longer contribute

Selecting new age weights: Process



Selecting new age weights: Process



Result: Virtually the same weights



New age item

Age at release	Points
18-34.999	+1
35-39.999	0
40-59.999	-1
60+	-3

Static-99R

- Revised version of Static-99
 - Original age item removed
 - New age item added
- Total scores range from -3 to 12

Comparing Static-99 to Static-99R: Validation sample (n = 2,392)

	ROC 5 years	ROC 10 years
Static-99	.713	.706
Static-99R	.720	.710

Age fully accounted for in Static-99R

	Static-99		Static-99R	
	X2 Δ	p	X2 Δ	p
Log. Reg. 5yr				
Static	128.92	< .001	135.82	< .001
Age	4.14	.042	1.27	.260
Log. Reg. 10yr				
Static	157.91	< .001	164.45	< .001
Age	5.54	.019	1.46	.227
Cox Regression				
Static	165.92	< .001	180.14	< .001
Age	7.87	.005	0.66	.418

Static-99R: Statistical Shrinkage?

	ROC	Log. Reg. Odds Ratio	Cox Reg. Rate Ratio
Development	.709	1.32	1.36
Validation	.720	1.34	1.28

Static-99R for rapists and child molesters

	Rapists		Child Molesters	
	b	p	b	p
Log. Reg. 5yr				
Static-99R	.317	< .001	.319	< .001
Age	-.006	.583	.0007	.926
Log. Reg. 10yr				
Static-99R	.325	< .001	.269	< .001
Age	.001	.966	.005	.591
Cox Regression				
Static-99R	.281	< .001	.269	< .001
Age	.002	.778	.002	.689

What about Static-2002 and age?

Static-2002 age item

Age at release	Points
18-24.999	3
25-34.999	2
35-49.999	1
50+	0

New Static-99 age item

Age at release	Points
18-34.999	+1
35-39.999	0
40-59.999	-1
60+	-3

Static-2002 and Age at release

- Static-2002 much better at accounting for age than Static-99
 - BUT, non-linear effect still significant
- Like Static-99, if we drop the age item from Static-2002, age shows a significant LINEAR effect
- Tested the same age item used in Static-99R
 - No reason to expect age effects would be different
 - Larger sample sizes for Static-99 analyses
 - All Static-2002 datasets included in Static-99 analyses

Age fully accounted for in Static-2002R

	Static-2002		Static-2002R	
	X ² Δ	p	X ² Δ	p
Log. Reg. 5yr				
Static	86.56	< .01	91.00	< .01
Age	3.40	.06	0.18	.68
Age ²	2.65	.10	0.33	.57
Log. Reg. 10yr				
Static	61.34	< .01	62.54	< .01
Age	0.31	.55	1.80	.18
Age ²	4.69	.03	1.56	.21
Cox Regression				
Static	129.78	< .01	131.99	< .01
Age	1.96	.16	1.90	.17
Age ²	6.14	.01	1.20	.27



Static-99R and Static-2002R

- Neither Static-99 nor Static-2002 fully accounted for age at release
- New age item created. Same item replaces age items in both Static-99 and Static-2002
- Using either Static-99R or Static-2002R, no further age adjustments would improve prediction

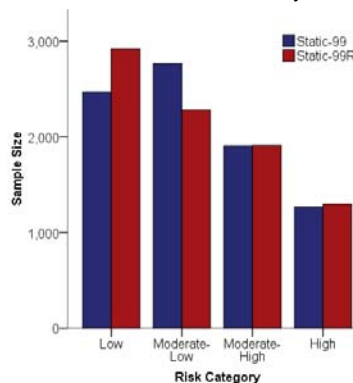
Static-99R and Static-2002R Nominal risk categories

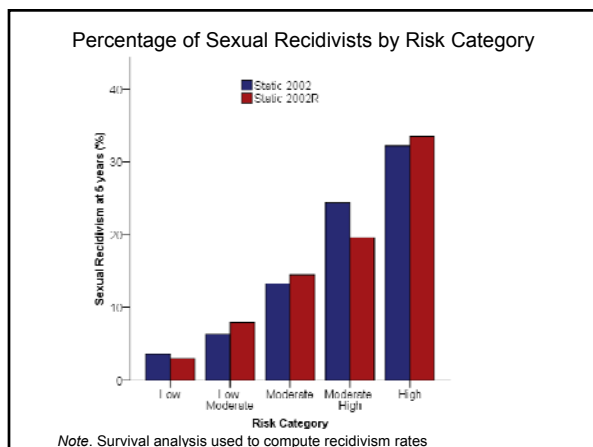
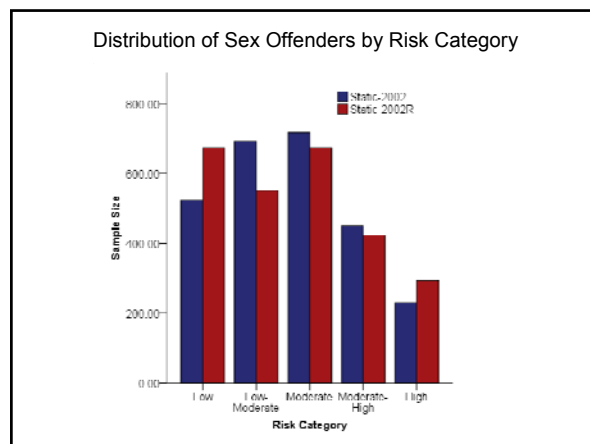
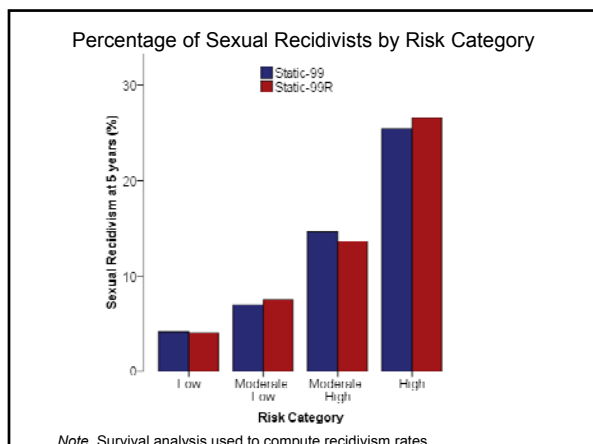
- Compared original and R versions
 - Proportion of offenders in each category (similar)
 - Recidivism rates per category (same or better)
- Same categories retained
 - Negative scores join lowest risk group

Nominal risk categories

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> • Static-99 <ul style="list-style-type: none"> – 0-1: Low – 2-3: Moderate-Low – 4-5: Moderate-High – 6+: High • Static-2002 <ul style="list-style-type: none"> – 0-2: Low – 3-4: Moderate-Low – 5-6: Moderate – 7-8: Moderate-High – 9+: High | 
 | <ul style="list-style-type: none"> • Static-99R <ul style="list-style-type: none"> – -3 to 1: Low – 2-3: Moderate-Low – 4-5: Moderate-High – 6+: High • Static-2002R <ul style="list-style-type: none"> – -3 to 2: Low – 3-4: Moderate-Low – 5-6: Moderate – 7-8: Moderate-High – 9+: High |
|---|--|---|

Distribution of Sex Offenders by Risk Category





- ### Relative risk categories: Summary
- Static-99
 - Proportions virtually identical for mod-high and high risk
 - Meaningful chunk of mod-lows become low
 - Recidivism rates per category pretty similar
 - Static-2002
 - Slightly higher proportions at extreme ends (low and high risk)
 - Recidivism rates per category pretty similar
 - Slight differences in mod-high category (lower recidivism in Static-2002R)

- ### Routine Correctional Samples
- Research ideal
 - Large, unselected samples of sex offenders
 - Representative of general population of adjudicated sex offenders
 - Does not describe most research studies
 - May not describe the offender sitting in front of you
 - Possible he was sent to you because he is NOT representative of typical offenders
 - How does this routine/non-routine distinction affect the data?
 - And what do I do with it?

- ### Non-Routine Samples
- Preselected in some way
 - From a particular treatment setting
 - Referred to a particular setting for assessment/treatment
 - e.g. psych assessment
 - From a particular institution
 - e.g., max security
 - By some kind of condition
 - e.g., indefinite sentence, detained until warrant expiry, other special measures
 - Do offenders preselected in some way vary in their recidivism rates from random, unselected samples (e.g., routine)?

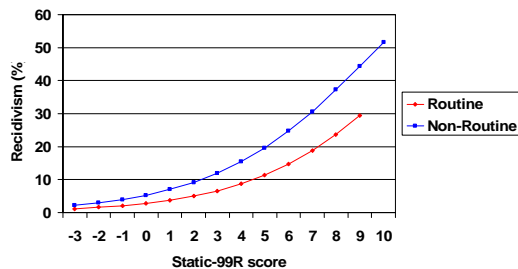
Preselection

- Preselection processes
 - Likely consider factors already included in Static-99
 - Possibly consider factors unrelated to risk (e.g., offence severity, treatment availability, publicity for a case)
 - Likely consider risk factors external to Static-99 (e.g., treatment need, institutional behaviour)
- Do offenders preselected in some way vary in their recidivism rates from random, unselected samples (e.g., routine)?

Routine samples vs all others (5 years)

	$B_{0(2)}$	95% C.I.	Q	k	n
All	7.4%	5.3 – 10.2	154.82***	23	5,760
Routine	5.0%	3.2 – 7.8	19.57**	8	2,406
Non-Routine	9.1%	6.3 – 13.0	92.04***	15	3,354
Q due to Routine variable			43.21***		

5 year sexual recidivism: Static-99R



Can we do better than this?

Categorizing the non-routine samples

2 Categories of Preselection

- 1) Preselected based on treatment need
 - Through some formal or informal process, offenders judged as having treatment needs in need of intervention

2 Categories of Preselection

- 2) Preselected as high risk/need
 - Offenders considered for rare (infrequent) measure/intervention/sanction reserved for highest risk cases
 - Detention until Warrant Expiry (in Canada)
 - Indefinite detention (civil commitment, Dangerous Offender, indefinite treatment order)
 - High-intensity treatment (if given to small subset and assigned for high risk/need
 - Civil commitment (U.S.), Regional Treatment Centres (Canada)
 - Does not include typical, moderate intensity treatment programs (or one-size-fits-all programs)
 - Offenders sent for specialized psychiatric services
 - E.g., Penetanguishene

Non-Routine Samples

- Treatment Need
 - Allan et al. (2007)
 - Brouillette-Alarie & Proulx (2008)
 - Harkins & Beech (2007)
 - Johansen (2007)
 - Swinburne Romine et al. (2008)
 - Ternowski (2004)
- High Risk/Need
 - Bengtson (2008)
 - Bonta & Yessine (2005)
 - Haag (2005)
 - Knight & Thornton (2007)
 - Nicholaichuk (2001)
 - Wilson et al. (2007a,b)

What samples are gone?

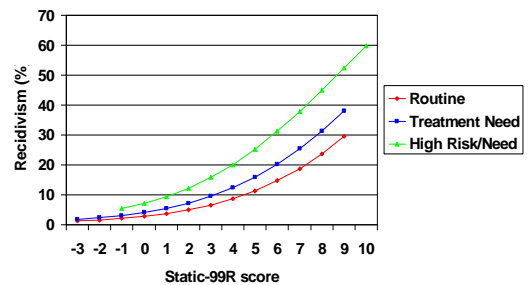
- Don't fit the 2 preselected groups
 - Cortoni & Nunes (2007)
 - Hill et al. (2008)
 - Saum (2007)
- No age info for Static-99R scores
 - Craig et al. (2006)
 - De Vogel et al. (2004)
 - Endrass et al. (2008)
 - Langton (2003)
 - Milton (2003)

Sample Type (5 years)

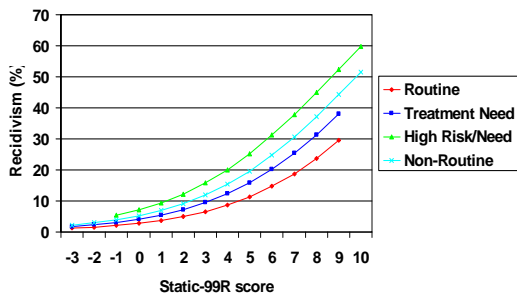
	$B_{0(2)}$	95% C.I.	Q	k	n
All	7.4%	6.6 – 8.3	62.83***	20	5,501
Routine	5.0%	3.2 – 7.8	19.57**	8	2,406
Treatment Need	7.2%	6.0 – 8.8	4.47	6	1,782
High Risk/Need	12.2%	9.9 – 15.0	4.01	6	1,313

Q due to Routine variable **34.78*****

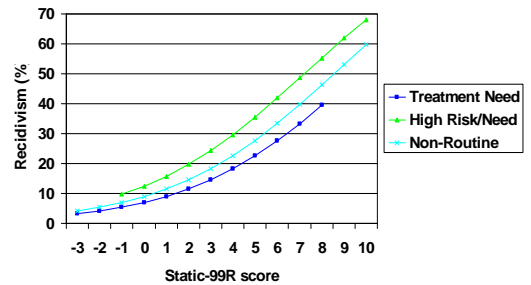
5 year sexual recidivism: Static-99R



5 year sexual recidivism: Static-99R



10 year sexual recidivism: Static-99R

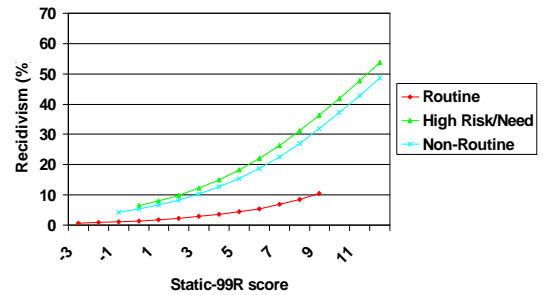


Static-2002 Recidivism Estimates

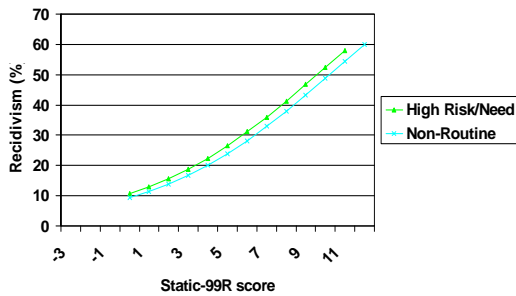
	5 years	10 years
Routine	k = 3, n = 526	
High Risk/Need	k = 3, n = 931	K = 2, n = 642
Non-Routine	K = 4, n = 1,121	K = 3, n = 766

Notes. Only 1 treatment need sample (insufficient for separate estimates)
 Non-Routine group includes all cases in high risk/need group, plus the 1 treatment need sample

5 year sexual recidivism: Static-2002R



10 year sexual recidivism: Static-2002R



Summary

- Static-99 and Static-2002 provide consistent measures of relative risk
- Incremental effect of age
 - Static-99R; Static-2002R
- Variability in Base Rates
 - Routine/Non-Routine
 - Treatment Needs
 - High Risk/Need

What's an evaluator to do?

- Focus on relative risk
 - Percentiles
 - Risk Ratios
- Any statements about absolute risk requires justification

Option #1: Ideal, but not often possible

- Use local norms
 - Recidivism studies
 - These can be estimated from the distribution of Static-99 or Static-2002 and overall recidivism rate (assuming B1 and distribution to be constant)

Option #2: Routine norms

- The estimates from routine samples are the default position
- Representative of general population of adjudicated sex offenders
- This option is sufficient in most circumstances

Option #3: Justify that routine norms do not apply

- Possible justifications
 - Sufficient criminogenic needs to recommend treatment: use treatment need norms
 - Member of small minority selected on risk/need factors external to Static-99R/Static-2002R: use high risk/need norms
 - Sufficient evidence that offender is non-routine, but insufficient information to differentiate between treatment need or high risk/need: use non-routine norms