

# **Fourth Generation Risk Assessment and Prisoner Reentry**

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# Ohio Risk Assessment System (ORAS)

Phase	Initial Contact with Criminal Justice System	Probation/Community Control and Parole/Post-Release Supervision	In Prison		
Tool	Pretrial Tool (ORAS – PAT)	Community Supervision Risk Assessment Tool (ORAS – CST)	Prison Intake Tool (ORAS – PIT)	Reentry Tool (ORAS – RT)	Supplemental Reentry Tool (ORAS – SRT)
<b>Domains</b>	<ul style="list-style-type: none"> <li>• Criminal History (3 items)</li> <li>• Employment (1 item)</li> <li>• Substance Abuse (2 items)</li> <li>• Residential Stability (1 item)</li> </ul>	<ul style="list-style-type: none"> <li>• Criminal History (6 items)</li> <li>• Education, Employment, &amp; Financial Situations (6 items)</li> <li>• Family &amp; Social Support (5 items)</li> <li>• Neighborhood Problems (2 items)</li> <li>• Substance Use (5 items)</li> <li>• Peer Associations (4 items)</li> <li>• Criminal Attitudes &amp; Behavioral Patterns (7 items)</li> </ul>	<ul style="list-style-type: none"> <li>• Criminal History (7 items)</li> <li>• Education, Employment, &amp; Financial Situations (6 items)</li> <li>• Family &amp; Social Support (5 items)</li> <li>• Substance Abuse &amp; Mental Health (5 items)</li> <li>• Criminal Attitudes &amp; Behavioral Patterns (7 items)</li> </ul>	<ul style="list-style-type: none"> <li>• Criminal History (8 items)</li> <li>• Education, Employment, &amp; Financial Situations (4 items)</li> <li>• Criminal Attitudes &amp; Behavioral Patterns (7 items)</li> </ul>	<ul style="list-style-type: none"> <li>• Criminal History (8 items)</li> <li>• Education, Employment, &amp; Social Support (7 items)</li> <li>• Substance Abuse &amp; Mental Health (4 items)</li> <li>• Criminal Attitudes &amp; Behavioral Problems (12 items)</li> </ul>
<b>Number of Variables</b>	<b>N= 7</b>	<b>N= 35</b>	<b>N= 31</b>	<b>N= 20</b> <i>(Administered only to those subject to Parole or Post-Release Supervision).</i>	<b>N= 32</b> <i>(Administered only to those subject to Parole or Post-Release Supervision).</i>
<b>Outcomes Predicted</b>	<ul style="list-style-type: none"> <li>• Failure to Appear</li> <li>• Reoffend</li> </ul>	<ul style="list-style-type: none"> <li>• Technical Violations</li> <li>• Reoffend</li> </ul>	<ul style="list-style-type: none"> <li>• Reoffend</li> </ul>	<ul style="list-style-type: none"> <li>• Reoffend</li> </ul>	<ul style="list-style-type: none"> <li>• Reoffend</li> </ul>

Table 1. ORAS Assessments by Tool, Risk Level, and Gender, 2015.

[illegible]

# Pros and Cons of 4th Generation Assessments

## Pros

- \*Multi-stage assessment system
- \*Emphasizes responsivity and case planning
- \*Highly predictive global risk scores

## Cons

- \*Inter-rater reliability problems
- \*Requires lengthy structured interview
- \*Questions surrounding incremental validity
- \*Fails to consider behavioral experiences in prison

# ORAS Quality Assurance and Reliability Study

A large-scale quality assurance study examining the interview and assessment process for a host of ORAS instruments was undertaken across four months in early 2013.

The primary goals of the broader study are to (1) assess the **interview skills** of staff members conducting the assessment process, and (2) to establish the **reliability** of each individual item and final risk level on each of the ORAS tools.

# ORAS Quality Assurance and Reliability Study

Some examples of the **interview skill items** on the observational tool are listed below (5 of 12 items):

## Interview Assessment

Please assess interview skills using the following scale:

1 = Needs improvement

2 = Meets requirements

3 = Exceeds requirements

NA = Not applicable

Please circle one choice for each item:

Avoided jumping to conclusions <i>Comments:</i>	1	2	3	NA
Avoided barriers to listening <i>Comments:</i>	1	2	3	NA
Used open ended questions effectively <i>Comments:</i>	1	2	3	NA
Avoided biased or leading questions <i>Comments:</i>	1	2	3	NA
Appropriate note taking which did not hinder the conversation <i>Comments:</i>	1	2	3	NA

# Reliability Analysis

When we speak of **reliability** in the context of this analysis, we are specifically talking about inter-rater reliability which measures the **consistency** among staff members in scoring particular assessment items.

# Reliability Analysis

Reliability is operationalized by the percent agreement for each scoreable item and the final risk level.

Prior literature on objective prison classification generally considers items to be reliable if at least **80 percent** of the cases are in agreement (see Austin and Hardyman, 2004). We use this threshold to establish a **minimum level** of reliability.

**Table 2. ORAS-RT Interrater Reliability Analysis of Scoreable Items. \***

<b>Items</b>	<b>Percent Agreement #</b>
<b>Age</b>	
Age at Time of Assessment	98.7
<b>Criminal History</b>	
1.1 Most Serious Arrest Under Age 18	83.8
1.2 Age at First Arrest or Charge	90.9
1.3 Prior Commitment as a Juvenile to Department of Youth Services	91.6
1.4 Current Offense Drug Related	89.6
1.5 Number of Prior Adult Felony Convictions	81.2
1.6 Number of Prior Commitments to Prison	90.3
1.7 Ever Received Official Infraction for Violence While Incarcerated as Adult	91.6
1.8 Ever Absconded from Community Supervision as an Adult	90.3
<b>Education, Employment, and Financial Situations</b>	
2.1 Ever Suspended or Expelled from School	92.2
2.2 Employed at the Time of Arrest	81.2
2.3 Ever Quit a Job Prior to Having Another One	86.4
2.4 Marital Status	89.0
<b>Criminal Attitudes and Behavioral Patterns</b>	
3.1 Criminal Attitudes	<b>50.0</b>
3.2 Believes that it is Possible to Overcome Past	88.3
3.3 Uses Anger to Intimidate Others	<b>65.6</b>
3.4 Walks Away from a Fight	<b>69.5</b>
3.5 Problem Solving Ability	<b>66.9</b>
3.6 Expresses Concern About Others	<b>67.5</b>
3.7 Believes in "Do Unto Others Before They Do Unto You"	90.9
<b>Final Risk Level ^</b>	<b>78.6</b>

\* ORAS Reliability and Quality Assurance Study (n = 154).

# Unreliable items that fall under the 80% threshold are indicated in bold.

^ The final risk level is before potential override decisions.

# Reliability Analysis

Most of the items on the RT are found to be reliable by conventional Standards (which is 80% or higher staff agreement).

However, the Criminal Attitudes and Behavioral Patterns domain is very problematic (with 5 out of 7 items found to be unreliable).

As a consequence, these unreliable items are negatively impacting the reliability of the final risk level of the reentry tool.

## Reliability Analysis

The tool overall performs just below minimally acceptable levels of reliability (78.6% before potential override decisions).

However, according to the interview assessment results (not presented), staff members overwhelmingly meet or exceeded requirements across all interviewer skill areas during the study.

These results have obvious training implications for ORAS trainers and line staff, however, the worsening levels of agreement in the Criminal Attitudes and Behavioral Patterns domain suggest that these items may have some inherent limitations.

# Research Questions

What is the predictive validity of each of domain subscale score used on the RT and SRT tools?

What is the relative strength of the ORAS subscales compared against a static risk assessment administered at intake?

What is the role of prison misconduct and prison programming in predicting reoffending, controlling for assessed ORAS risk and an inmate's static risk score?

Does the predictive importance of prison incarceration experiences vary across reentry tools?

# Data and Sample

Data consists of a Post-Release Control (PRC) release sample in 2012 that served at least one year in prison.

Recidivism looked at a 2-year follow-up (both overall reincarceration and reincarceration for a new crime).

The 2012 release cohort was chosen because these offenders would likely have a previous RAP score at the time of RT or SRT implementation.

**Table 3. Descriptive Statistics for Outcome Measures and Predictor Variables, SRT Sample. \***

<b>Outcome Measures</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Overall Reincarceration (2 yr follow-up)	.226	.418	0	1
Reincarceration for New Crime (2 yr follow-up)	.162	.369	0	1
<b>Predictor Variables</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Age at Release	34.655	10.422	18	82
Gender (male=1) #	.931	.253	0	1
Race (nonwhite=1) #	.547	.498	0	1
Threat-Related Conviction Offense #	.440	.496	0	1
<i>Time Served</i>				
More than 3 years	.393	.488	0	1
2 to 3 years	.276	.447	0	1
1 to 2 years (reference category)	.331	.470	0	1
RAP Static (at admission) <sup>1</sup>	2.276	2.264	-1	8
<i>ORAS Domains</i> <sup>1</sup>				
Education, employment, & social support	4.908	1.964	0	9
Substance abuse & mental health	.766	.871	0	4
Criminal attitudes & behavioral patterns	4.604	3.386	0	19
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #	.205	.404	0	1
Threat-related rule violations #	.132	.339	0	1
<i>Program Completion</i>				
In-prison GED attainment #	.137	.344	0	1
Recovery services program completion #	.077	.266	0	1

\* N = 3,890.

# Dummy coded variables.

<sup>1</sup> Raw risk scores.

**Table 4. Descriptive Statistics for Outcome Measures and Predictor Variables, RT Sample. \***

<b>Outcome Measures</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Overall Reincarceration (2 yr follow-up)	.178	.383	0	1
Reincarceration for New Crime (2 yr follow-up)	.118	.322	0	1
<b>Predictor Variables</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Age at Release	37.415	10.986	19	81
Gender (male=1) #	.965	.184	0	1
Race (nonwhite=1) #	.555	.497	0	1
Threat-Related Conviction Offense #	.476	.500	0	1
<i>Time Served</i>				
More than 8 years	.175	.380	0	1
6 to 8 years	.162	.368	0	1
4 to 6 years	.430	.495	0	1
Less than 4 years (reference category)	.233	.423	0	1
Mental Health Caseload at Release #	.179	.383	0	1
RAP Static (at admission) <sup>1</sup>	2.225	2.199	-1	8
<i>ORAS Domains</i> <sup>1</sup>				
Education, employment, & financial situations	2.518	1.005	0	4
Criminal attitudes & behavioral patterns	3.565	2.104	0	11
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #	.166	.372	0	1
Threat-related rule violations #	.111	.314	0	1
<i>Program Completion</i>				
In-prison GED attainment #	.206	.405	0	1
Recovery services program completion #	.065	.247	0	1

\* N = 995.

# Dummy coded variables.

<sup>1</sup> Raw risk scores.

Table 5. Bivariate Relationships Among ORAS Domain Scores, RAP Static Scores, and Recidivism.

Risk/Need Domain #	SRT	RT
	<i>tau-c</i>	<i>tau-c</i>
Education, Employment, Social Support, & Financial Situations	.12 ***	.04 *
Substance Abuse & Mental health	.04 **	n/a
Criminal Attitudes & Behavioral Patterns	.12 ***	.12 ***
Criminal History	.17 ***	.15 ***
RAP Static (at admission)	.14 ***	.13 ***

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$  (two-tailed). Recidivism is operationalized as overall reincarceration (2 year follow-up).

# Raw risk scores.

# Threat-Related Offenses of Conviction

- (290112) Robbery-Unarmed (ORC1)
- (290113) Armed Robbery (ORC1)
- (290311) Felonious Assault
- (290312) Aggravated Assault
- (290313) Assault
- (290321) Menacing
- (290511) Extortion
- (290923) Making Terroristic Threats
- (291101) Aggravated Robbery
- (291102) Robbery
- (291701) Inciting to Riot
- (291702) Aggravated Riot
- (291721) Phone Harassment
- (291925) Domestic Violence
- (291927) Violating Protection Order
- (292103) Intimidation
- (292104) Intimidation of Attorney, Victim, or Witness
- (292105) Retaliation
- (292138) Harassment by Inmate
- (292342) Participating in Criminal Gang
- (292712) Ethnic Intimidation

# Threat-Related Rules of Conduct

- (1) Causing, or attempting to cause, the death of another.
- (3) Causing, or attempting to cause, serious physical harm to another.
- (4) Causing, or attempting to cause, physical harm to another.
- (5) Causing, or attempting to cause, physical harm to another with a weapon.
- (8) Threatening bodily harm to another (with or without a weapon.)
- (9) Threatening harm to the property of another, including state property.
- (10) Extortion by threat of violence or other means.
- (11) Non-consensual sexual conduct with another . . . (a)-(d).
- (12) Non-consensual sexual contact with another, whether compelled . . . (a)-(d).
- (55) Use of telephone or mail to threaten, harass, intimidate, or annoy another.

**Table 6. Cox Proportional Hazards Models Predicting the Risk of Overall Reincarceration, SRT Sample.**

Variables	Model 1	Model 2	Model 3	Model 4
Age at Release	-.039 ***	-.032 ***	-.037 ***	-.038 ***
Gender (male=1) #	.939 ***	.913 ***	.935 ***	.919 ***
Race (nonwhite=1) #	-.090	-.076	-.098	-.094
Threat-Related Conviction Offense #	.012	-.018	-.005	-.001
<i>Time Served</i> <sup>1</sup>				
More than 3 years	-.376 ***	-.390 ***	-.385 ***	-.360 ***
2 to 3 years	-.172 *	-.199 *	-.193 *	-.181 *
RAP Static (at admission) <sup>2</sup>	.193 ***	.184 ***	.189 ***	.187 ***
<i>ORAS Domains</i> <sup>2</sup>				
Education, employment, & social support	.063 ***	.061 **	.064 ***	.065 ***
Substance abuse & mental health	.077	.060	.073	.074
Criminal attitudes & behavioral patterns	.038 ***	.028 **	.032 **	.031 **
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #		.456 ***		
Threat-related rule violations #			.315 ***	.307 ***
<i>Program Completion</i>				
In-prison GED attainment #				-.231 *
Recovery services program completion #				-.096

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$  (two-tailed). N = 3,890.

# Dummy coded variables.

<sup>1</sup> 1 to 2 years (reference category).

<sup>2</sup> Raw risk scores.

**Table 7. Cox Proportional Hazards Models Predicting the Risk of Reincarceration for a New Crime, SRT Sample.**

Variables	Model 1	Model 2	Model 3	Model 4
Age at Release	-.047 ***	-.039 ***	-.044 ***	-.045 ***
Gender (male=1) #	.979 ***	.960 ***	.973 ***	.930 ***
Race (nonwhite=1) #	-.099	-.084	-.107	-.110
Threat-Related Conviction Offense #	-.046	-.077	-.060	-.056
<i>Time Served</i> <sup>1</sup>				
More than 3 years	-.233 *	-.253 **	-.243 *	-.218 *
2 to 3 years	.008	-.026	-.013	.006
RAP Static (at admission) <sup>2</sup>	.223 ***	.215 ***	.219 ***	.218 ***
<i>ORAS Domains</i> <sup>2</sup>				
Education, employment, & social support	.061 **	.060 **	.062 **	.062 **
Substance abuse & mental health	.112 *	.092	.106 *	.109 *
Criminal attitudes & behavioral patterns	.045 ***	.034 **	.039 ***	.038 **
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #		.503 ***		
Threat-related rule violations #			.328 ***	.314 **
<i>Program Completion</i>				
In-prison GED attainment #				-.195
Recovery services program completion #				-.332

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$  (two-tailed). N = 3,890.

# Dummy coded variables.

<sup>1</sup> 1 to 2 years (reference category).

<sup>2</sup> Raw risk scores.

**Table 8. Cox Proportional Hazards Models Predicting the Risk of Overall Reincarceration, RT Sample.**

Variables	Model 1	Model 2	Model 3	Model 4
Age at Release	-.034 ***	-.029 **	-.031 ***	-.033 ***
Gender (male=1) #	-.484	-.441	-.433	-.389
Race (nonwhite=1) #	-.260	-.246	-.278	-.277
Threat-Related Conviction Offense #	.088	.034	.085	.087
<i>Time Served</i> <sup>1</sup>				
More than 8 years	.356	.388	.385	.430
6 to 8 years	.393	.413	.415	.458
4 to 6 years	.041	.003	.059	.072
Mental Health Caseload at Release #	.130	.056	.114	.102
RAP Static (at admission) <sup>2</sup>	.177 ***	.179 ***	.180 ***	.172 ***
<i>ORAS Domains</i> <sup>2</sup>				
Education, employment, & financial situations	.177 *	.157	.182 *	.183 *
Criminal attitudes & behavioral patterns	.143 ***	.124 ***	.129 ***	.124 ***
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #		.616 ***		
Threat-related rule violations #			.478 *	.475 *
<i>Program Completion</i>				
In-prison GED attainment #				-.308
Recovery services program completion #				.081

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$  (two-tailed). N = 995.

# Dummy coded variables.

<sup>1</sup> Less than 4 years (reference category).

<sup>2</sup> Raw risk scores.

**Table 9. Cox Proportional Hazards Models Predicting the Risk of Reincarceration for a New Crime, RT Sample.**

Variables	Model 1	Model 2	Model 3	Model 4
Age at Release	-.036 **	-.031 **	-.034 **	-.035 **
Gender (male=1) #	.310	.330	.342	.382
Race (nonwhite=1) #	-.314	-.309	-.333	-.307
Threat-Related Conviction Offense #	-.012	-.068	-.006	-.070
<i>Time Served</i> <sup>1</sup>				
More than 8 years	.213	.235	.226	.318
6 to 8 years	.469	.487	.483	.572 *
4 to 6 years	.025	-.011	.034	.015
Mental Health Caseload at Release #	.300	.209	.279	.207
RAP Static (at admission) <sup>2</sup>	.181 ***	.182 ***	.183 ***	.168 ***
<i>ORAS Domains</i> <sup>2</sup>				
Education, employment, & financial situations	.181	.157	.185	.159
Criminal attitudes & behavioral patterns	.142 ***	.124 **	.132 **	.121 **
<i>Prior Prison Misconduct (2 years prior)</i>				
5 or more rule violations #		.664 **		.662 **
Threat-related rule violations #			.452	
<i>Program Completion</i>				
In-prison GED attainment #				-.567 *
Recovery services program completion #				.025

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$  (two-tailed). N = 995.

# Dummy coded variables.

<sup>1</sup> Less than 4 years (reference category).

<sup>2</sup> Raw risk scores.

# Additional Analysis

## AUC

Overall Risk Score (ORAS)	.69 (RT sample)
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RAP Static (Admission)	.61 (RT sample)
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## AUC

Overall Risk Score (ORAS)	.66 (SRT sample)
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RAP Static (Admission)	.61 (SRT sample)
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## Summary and Implications

Parsimonious use of dynamic domains in a reentry context is generally supported, compared against broader assessments like the LSI-R.

Results raise questions about how longer periods of incarceration may erode the predictive validity of some constructs.

Results are consistent with earlier work demonstrating that dynamic domains, while generally predictive across most MV models, don't add much incrementally over standard static assessments.

Findings are helpful for informing revision to the PRC assessment process, which could potentially be modified to consider recidivism risk posed by prison misconduct.