

An Exploration of the Symmetry between Crime-Causing and Crime-Reducing Factors:
Implications for Delivery of Offender Services

Daryl G. Kroner

Southern Illinois University Carbondale

Devon L. L. Polaschek

The University of Waikato

Ralph C. Serin

Carleton University

Jennifer L. Skeem

University of California Berkley

Author notes

We thank Terri Copher for her assistance with data collection and Julie Hibdon for her comments. Correspondence should be addressed to Daryl G Kroner, Department of Criminology and Criminal Justice, Faner Hall, Mail Code 4504, Southern Illinois University Carbondale, 1000 Faner Drive, Carbondale, IL 62901-4328. e-mail: dkroner@siu.edu

Abstract

Both the Risk-Needs-Responsivity (RNR) and Structured Professional Judgment (SPJ) risk assessment approaches assume that a strong relationship exists between crime-causing and crime reducing factors. Using a probation sample, the present paper examines whether crime-causing and crime-reducing factors correspond. Probationers completed questionnaires where they were asked what factors were crime-causing and what factors were crime-reducing. Overall, the relationship between the crime-causing and crime-reducing factors was very weak—even after ruling out potential measurement and methodological artifacts (i.e., internal consistency, item stability, acquiescent responding). Applied to an individual offender, the results suggest that conducting assessments and recommending interventions need not be bound by assumptions that risk factors for past crime must be targeted to reduce crime. New endeavors to develop causal and idiographic crime-reducing strategies warrant consideration.

Keywords: Risk-Needs-Responsivity, Structured Professional Judgment, offender services, crime reduction, and dynamic risk

An Exploration of the Symmetry between Crime-Causing and Crime-Reducing Factors:
Implications for Delivery of Offender Services

An entire class of risk assessment instruments is built upon the assumption that risk factors for past crime provide direction for risk reduction efforts. For example, several risk-needs instruments for offenders explicitly include “dynamic” risk factors (like substance abuse, antisocial associates, employment problems) as targets for intervention—and changes in such factors have been shown to predict recidivism (Wormith, Hogg, & Guzzo, 2015).

The putative linkage between crime-causing and crime-reducing factors is central to Structured Professional Judgment (SPJ) approaches to risk assessment, where “evaluators develop case management plans based on plausible scenarios of violence, which in turn were based on the presence and relevance of risk factors” (Douglas, Hart, Groscup, & Litwack, 2014, p. 416). More broadly, the putative linkage is relevant to the dominant model of correctional intervention. According to the Risk-Needs-Responsivity (RNR) model, offender programming and correctional policy should “Target the factors actually associated with offending (why target irrelevant factors?)” (Andrews & Bonta, 2010, p. 49). The current paper tests such assumptions of symmetry between crime-causing and crime-reducing factors.

Two Counter Arguments

Is there sufficient support for the assumption of symmetry between crime-causing and crime-reducing factors? According to two different literatures, no. First, there is a competing theoretical framework. According to desistance frameworks and research (Maruna, 2001), crime-reducing factors often differ from, and can be independent of risk factors. The relationship between crime-reducing and crime-causing has been described as “chaotic, complex, relative, and contextual” (Ungar, 2004, p. 341). For example, based on a sample of 300 offenders

assessed prior to release, Polaschek (2016) found that crime-causing factors and desistance factors independently predicted risk or protective scores three months after release. Similarly, crime-causing and desistance factors have *both* predicted general and violent recidivism (Demarais, Nicholls, Wilson, & Brink, 2012).

Second, there is insufficient empirical support for the notion that dynamic risk factors or criminogenic needs are *causal* risk factors. Drawing upon Kraemer's work (Kraemer, 2003), Monahan and Skeem (2014) have highlighted the necessity of explicitly reframing dynamic risk factors and criminogenic needs as causal risk factors, which are the only kind of risk factors directly relevant to risk reduction. Causal risk factors require demonstrations of (a) mutability, and (b) ability to change through intervention and (c) association between change and changes in the associated outcome. Both RNR and SPJ have conflated "causal risk" factors with "variable risk" factors in their assumption of symmetry between crime-causing and crime-reducing factors.

Applied Expectations and Client Perceptions

On the front lines, service providers expect that targeting risk factors will reduce risk. A survey of forensic occupational therapists found that nearly all (98%) reported that occupational therapy contributed to risk reduction (Connell, 2016): "Based on the understanding of what influenced offending in the past...enabled participants to identify occupational needs that may contribute to ongoing risk" (p. 917). Similarly, service providers' perceptions of risk factors for violence featured dynamic- more than static-risk factors (Brown & Rakov, 2015). These results are consistent with Elbogen, Mercado, Scalora, & Tomkin's (2002) finding that service providers perceive clinical items on the HCR-20 as more relevant to violence risk than historical items: "nearly every clinician perceived dynamic, behavioral variables to be *significantly more relevant*" than static variables (p. 43, italics in original).

Offenders' self-perceptions of their risk factors have a central role in the practice of conducting risk assessments. Although a risk assessment typically involves an interview, review of file (i.e., collateral) information, and possibly consultation with others, practice can have a strong reliance on the interview. In a field reliability study, a main finding was that the assessors "do *not* access prior" instrument results when conducting a new assessment for the courts (Sturup et al., 2014, p. 317, italics in original), suggesting a strong reliance on interview procedures. In assessing the value of an interview, Serin (1993) concluded that "When more than 40% of cases received different diagnoses depending on whether or not interview information was used, serious concerns are raised about the clinical use of NPB [National Parole Board] file only PCL-R ratings" (p. 370-371). The interview, which is based on an offender's self-perceptions, and the service provider's evaluation of those perceptions are central to the practice of conducting risk assessments.

Our self-report study assesses the strength of the symmetry of offenders' self-perceptions of what is crime-causing and what is crime reducing. In addition to self-perceptions having a strong utility in routine practice, there is evidence that offenders' perceptions and reports of risk factors are often valid. For example, offenders' self-report and expert ratings are not significantly different in predicting criminal justice outcomes (Walters, 2006). More specific to causality, offenders, as with other groups, have knowledge of their risk (Skeem, Manchak, Lidz, & Mulvey, 2013) and have demonstrated an ability to predict their own outcomes (i.e., "I will have this problem in the next 2 months"; Kroner, 2012).

In summary, the notion that dynamic risk factors should be targeted in risk reduction efforts is essential to the RNR and SPJ models of risk assessment and reduction, and is embedded in professionals' clinical assumptions about recidivism. This may be because dynamic

risk factors intuitively provide an explanatory mechanism for future crime. A given factor that is changeable precedes and increases the likelihood of crime—which suggests that the factor may be a causal one. These crime-causing variable/s are the best estimate of a mechanism for explaining the event. This mechanism has already operated and chances are that it could have similar consequences in the future. The particular relevance of this crime-causing, dynamic variable and its mechanistic role determines what factor *ought* to be addressed to reduce crime. Implicit in this framework is the *sameness* of crime-causing and crime-reducing factors. It is this “oughtness” and “sameness” that produces the expectation of symmetry of crime-causing and crime-reducing factors. This paper tests the basic assumption of the RNR and SPJ approaches of a symmetry between crime-causing and crime-reducing factors. More specifically, we investigate whether offenders’ self-perceptions of crime-causing and crime-reducing factors show the expected symmetry.

Service Delivery Issues

Support for an expected symmetry between crime-causing and crime-reducing factors has implications for how a service provider decides what services should be provided. A prominent decision for the service provider is whether the application of the symmetrical relationship applies to *this* offender. The support for a symmetrical relationship at a system level (i.e., 60% of offenders had offense substance abuse issues, therefore substance abuse interventions occur for 60% of the offender population) does not necessary mean there is support for a symmetrical relationship the individual client (i.e., requiring substance abuse intervention) (see Fagan’s [2003] differentiation between Level 1 and Level 2 service delivery). Unduly requiring participation of an individual in intervention may pose difficulties for the service provider. First, there are usually other competing requirements for offenders’ time, driven by agency, court, and

legislative mandates. Second, the proposed intervention maybe contra indicated (i.e., offense situationally driven). Third, there may be multiple ways of reducing criminal propensity, which may exclude addressing the putative crime-causing factor.

Correctional interventions begin with the offenders' perception of what is crime-reducing. Whether these perceptions are initially optimal for change or not, the understanding of these perceptions by service providers who is core to facilitating therapeutic change. If an offender perceives a factor (i.e., substance abuse) to directly contribute to future failure, then a foundational step toward altering this factor will be in place. This causality - defined through an offender's perception - is meaningful, especially within an intervention context. Without this causal perception, intervention attempts for crime reduction will have greater barriers. Given the predictive validity of a typical offenders self-report¹, this form of causal evidence can also have an important role in understanding causal mechanisms.

Research Question

The aim of this study is to test for the theorized symmetry between crime-causing and crime-reducing factors in a community sample of offenders. Based on the fundamental tenets of the RNR and SPJ approaches, we expect a moderate to strong relationship between crime-causing and crime-reducing factors. However, as noted above, the tenets of desistance theory suggest that this relationship may be weak or nonexistent. To increase the confidence of the demonstrated symmetrical relationship, potential measurement and methodological artifacts of internal consistency, item stability, and acquiescent responding are addressed.

Method

Participants

Participants were 63 Midwest state county-level probationers who volunteered for a research project between 2012 and 2014. The mean age was 27.1 (SD = 8.6) with 13 (21%) women. The mean age of first conviction was 21.0 (SD = 6.5). The mean number of prior convictions was 1.2 (SD = 1.7). Racial composition was 33 (52%) African American, 28 (44%) Caucasian, and 2 (3%) of Hispanic descent. The mean time on probation was 20 months. Convicted offenses were: 4 (6%) sexual offenses, 9 (14%) acquisitive offenses, 6 (10%) weapon and “aggravated” offenses, 30 drug and DWI, and 14 (22%) obstruction/public disorder/minor driving. In 2013, the county rate for Misdemeanor and driving offences was 74%. The current sample rate for Misdemeanor and driving offences was 79%.

Measures

Measures of Criminal and Antisocial Desistance (MCAD; Kroner & Mills, 2015). The MCAD is a self-report scale that assesses one’s reasons for not participating in criminal or antisocial activities. Its instructions are:

The following statements are possible reasons why people do NOT do crime. As you know there are times when people are crime free. The items are positive and it may appear that people could agree with most of the items. But there are many areas covered. So no one could agree with most of the items, even if it would be a good thing to do so. Read each statement and indicate whether the statement is true or not true of you as a reason why you were crime free for a period of time.

The 57 items comprise 7 scales; Internal Resources (7 items, e.g., “I had more self-control over my thoughts”), Behavioral Controls (8 items, e.g., “How I lived was better organized”), Relationship Depth (8 items, e.g., “I knew that I was valued by my friends”), Affective Engagement (8 items, e.g., “Being around positive people was less annoying”),

Integrated into Social Structures (8 items, e.g., “I had a routine with my friends”), Valued Social Place (8 items, e.g., “I was in a daily routine”), and Agency (10 items, e.g., “My story had more meaning”). For the present study, the MCAD¹ was the measure of crime-reducing factors.

The development of the MCAD emphasized psychological and social processes. This process emphasis, which has an implied time component was integrated in the item content. This can be seen by contrasting the following MCAD items to specific events; “There were more settings that I owned up to my wrong behavior” rather than not *having* done wrong behavior, “I was able to renew positive friendships” rather than *had* positive friends, “My social life was more defined” rather than *had* activities, and “My life was moving forward” rather than *had* positive events. In addition, item construction drew upon compensatory risk neutralizing activities, wisdom literature, and protective risk strategies. Not taken into consideration with the MCAD were specific setting characteristics, such as transition housing, beliefs about crime, attributions for positive events, or past treatment participation.

Measures of Increasing Criminal and Antisocial Factors (INCR). The INCR is a research instrument designed to mirror the MCAD². The instructions for the INCR were as follows:

The following statements are possible reasons why people DO crime or may EVENTUALLY result in crime. Read each statement and indicate whether the statement was true or not true of you.

During supervision, what INCREASED your likelihood of involvement in criminal activities or KEPT you involved in criminal activities.

As with the MCAD, the INCR had 57 items. The original MCAD item’s wording was altered only to change the valence for each item. So the mirror of the MCAD example items

listed above were: “I had less control over my thoughts” (Internal Resources), “How I lived was poorly organized” (Behavioral Controls), “I was not valued by my friends” (Relationship Depth), “Being around positive people was more annoying” (Affective Engagement), “I lacked routine with my friends” (Integrated into Social Structures), “I lacked a daily routine” (Valued Social Place), and “My story has less meaning”. For the present study the INCR was the measure of crime-causing factors.

Two-Tiered Violence Risk Estimates Scale (Mills & Kroner, 2005). This scale is a two-tiered standardized risk scale comprising the Actuarial Risk Estimate and the Risk Management Indicators. For the current study, only the Actuarial Risk Estimate data were gathered. Actuarial Risk Estimate scores can range from 0 to 13, comprising 10 items, including the following: childhood antisocial behavior, adolescent antisocial behavior, age of first adult conviction, prior incarcerations, prior convictions for assaultive behavior, community supervision failure, history of alcohol abuse, failure to complete high school, criminal associations, and interpersonal difficulties. Most items are scored as a 0 or 1; however, age of first adult conviction, prior incarcerations, and prior convictions for assaultive behavior are scored 0, 1, or 2. With a 12-year follow-up period, AUCs were found to be .79 and .75 for violent and general recidivism (Mills & Gray, 2013). The Actuarial Risk Estimate is used as a criminal risk indicator to examine its relationship to the pattern of INCR and MCAD responses.

Criminal Attribution Inventory (Kroner & Mills, 2003). This scale is a 60-item (agree/disagree) self-report measure that assesses the endorsement of various causes of crime. The Criminal Attribution Inventory's instructions define crime for the respondent as, "what YOU know the average type of crime to be". The six original scales are: Psychopathology (e.g., "Criminal behavior is often caused by mental illness"), Personal (e.g., "Crimes occur because of

lifelong traits inside the person"), Victim (e.g., "The victim has a part in the beginning of many crimes"), Alcohol (e.g., "Alcohol makes people commit crime"), Society (e.g., "When crime occurs, society should be partially blamed"), and Randomness (e.g., "Unexpected events can result in crime")³. Each scale has one half true-keyed and one half false-keyed items. For the present analyses, the true-keyed (reflecting positive valence) and false-keyed (reflecting negative valence) items were added for each scale. This resulted in 10 scales (Society false-keyed items had very poor reliability, resulting in the Society scale being dropped for the present analyses). Past research has demonstrated the reliability and validity of the scales (Kroner & Mills, 2004). The Criminal Attribution Inventory is used to assess the impact of valence responses (i.e., acquiescence) of the participants.

Procedures

Each participant was invited to take part in the research study after their regular probation meeting. A research assistant approached each probationer for participation. Participants received no compensation. The research data were collected by a research assistant and used solely for research purposes. Confidentiality was assured and no information was forwarded to the probation office. Thus, it can be expected that socially desirable responding would not unduly impact data collection. Participants ($N = 102$) were approached for participation at their first meeting with the probation officer. Due to refusals and incomplete protocols, the final number of participants were 63. For the second administration, there were 48 participants from the 63 first administration (5 refused to participate and 10 were a no-show for the appointment).

Data collection included a brief interview (Actuarial Risk Estimate collected) and subsequently, completion of self-report measures (Criminal Attribution Inventory, INCR, MCAD). During this first research session the participants were informed of subsequent

interviews. After the next regular probationers' meeting, they were again asked to participate in the research project. A shortened interview (e.g., no actuarial information gathered) and the same self-report instruments were administered. The scheduled timeframe between visits of 1 month was met for 80% of the sample. Given that the probationers were under supervision with no interventions it is assumed that a typical level of 1-month item stability would be reflected on the re-test of the self-report instruments.

Data Analytic Plan

A multi-time point design with probationers was chosen for three reasons. First, the time period between the current data collection and the probationers' offense will be relatively short. This will assist with recall issues, as compared to an incarcerated sample. Second, the multi-time point design assists in accounting for methodological artifacts in assessing the symmetry relationship. Third, probationers represent a large portion of adults (69%; Bureau of Justice, 2016) who are criminal justice involved.

Evaluation of the Crime-Causing and Crime-Reducing Symmetrical Relationship.

To evaluate the symmetry between crime-causing and crime-reducing factors, probationers were asked to complete two scales, one measuring crime-causing (INCR) and the other crime-reducing (MCAD) factors. There were three types of analyses to assess this symmetrical relationship. First, zero order correlations between the INCR and MCAD scales were performed. The expected symmetrical relationship would be indicated by a moderate or strong negative correlation.

The second evaluation of the symmetrical relationship used semi-partial correlations. The expected symmetrical relationship would be indicated by similar correlations between the residualized INCR/Actuarial Risk Estimate correlations as compared to the residualized

MCAD/Actuarial Risk Estimate correlations. In other words, the similar independent variances in the INCR and MCAD in relation to a proxy of criminal propensity would be a form of support for a symmetrical relationship. To calculate the unique effects of the INCR and MCAD, two variables were created. First, the INCR scale was regressed onto the MCAD, and second, the MCAD was regressed onto the INCR; the residuals were saved. The residuals represent that part of the MCAD that cannot be predicted from the INCR measure. The residualized INCR represents the part of the INCR that cannot be predicted from the MCAD measure. The residuals are correlated with the Actuarial Risk Estimate instrument, a proxy of criminal propensity.

The third evaluation of the symmetrical relationship used the Similarity Index to assess the relationship pattern between each scale and the Actuarial Risk Estimate. The expected symmetrical relationship would be indicated by moderately positive Similarity Index coefficients. The Similarity Index is based on an intraclass correlation method that accounts for elevation, shape, and scatter in the pattern of correlations (Furr, 2010). This statistic is calculated by entering the correlations twice (a set of correlations placed below the opposite set of correlations). Thus, the shape of two profiles could be identical (zero order $r = 1.00$), but the Similarity Index can produce a low or negative coefficient if one profile has high scores (see Figure 1). As such, the Similarity Index is more conservative than Pearson r , which only captures the shape of the pattern. The Similarity Index provides coefficients that indicate a range of similarity (strongly positive) to dissimilarity (strongly negative) (Hřebíčková & Graf, 2014).

Analytic Strategy Accounting for Measurement and Methodological Artifacts

With the current two-scale design (INCR and MCAD), the lack of a strong or moderate correlation (failing to assert p , not necessarily “not- p ”) could be due to measurement and methodological issues. These methodological artifacts can be of particular concern given that the

research design involved asking probationers (self-report) what caused their crime (a past timeframe) and what has kept them crime free (a *different* past timeframe, and one that is more vaguely defined). The measurement and methodological issues addressed are internal consistency of the measures, lack of item stability in the responses, and the valence reversal of the items (e.g., “I had a routine with my friends” vs. “I lacked a routine with my friends”).

Internal Consistency. An unduly poor relationship between the INCR and MCAD could be due to poor internal consistencies of one or both measures. This possibility was assessed with two methods. First, Cronbach’s alphas were calculated with each instrument and then reviewed according to other offender measures of similar item length. If the INCR and MCAD both have similar reliabilities to that of other measures, then the zero-order relationship between the INCR and MCAD measures would likely not be attributable to internal consistency issues. Second, the correlations between the INCR and MCAD measures will be corrected for unreliability (Cohen & Cohen, 1983, p. 69). Substantial increases in corrected correlations would indicate internal consistency issues.

Item Stability. An unduly poor relationship between the INCR and MCAD could be due to the lack of item stability in the responses. This lack of item stability may be due to item characteristics, influence of recall cues, and measurement issues. A determinant of recall ability is the length of the referenced period, which we hope to minimize by using a probation sample. For the present study, the instruments measuring crime-causing and crime-reducing factors were presented after a brief interview covering criminal history which could serve to prime participant recall due to recency. In addition to the use of a probation sample and gathering of the past information after an interview, item stability in the responses was examined through the construction of a Consistent Responder group. Test-retest time frame was 1-month. Test-retest

coefficients of the INCR and MCAD scales were compared between the total and Consistent Responder (described below) groups. A substantial difference of test-retest coefficients between these two groups would indicate that item stability may have a role in the INCR/MCAD relationship.

Consistent Responder Groups. The purpose of this analysis was to determine which responses were consistent over time. Through the steps outlined below, consistent responder groups (~70% of the test-retest participants) were constructed. If the basic relationship between INCR and MCAD increased substantially and moved close to the item stability coefficients, then an argument could be made that any lack of a symmetrical relationship between crime-causing factors and the corresponding crime-reducing factors may be due to either person or instrument instability.

Seven Consistent Responder groups were constructed: one group for each scale. The construction of these groups excluded the targeted/analyzed scale for the putative group. For example, the analysis that constructed the INCR/MCAD Consistent Responder group for the Internal Resources scale excluded these items from the calculations. To construct each Consistent Responder Group, scaled scores (excluding the targeted scale) for Time 1 and Time 2 were summed and then standardized. An absolute difference measure between the standardized Time 1 and Time 2 was derived. The participants with the lowest difference score constituted the Consistent Responder group. The number of participants in each group varied between 35 and 36. Thus, for each of the seven analyses, the composition of the Consistent Responder Group varied.

Item Valence. An unduly poor relationship between the INCR and MCAD could be due to the valence reversal of the items. Participants may show an acquiescent response set. If so,

then they may be more likely to agree to an item (e.g., endorsement of item - agree to “I am sad” to indicate depression) than to disagree with the other valence (e.g., non- endorsement of item – disagree to “I am happy” to indicate depression). Applied to the present study, the response to a positive valence, “increase my involvement in crime” may preclude response to the opposite valence, “decrease my involvement in crime”. There is a possibility that valence reversal (i.e., INCR measuring a negative valence, MCAD measuring a positive valence) would be responsible for the INCR/MCAD relationship. To address if this valence reversal was due to generally acquiescent responding, a different instrument’s valence scoring was assessed (the Criminal Attribution Inventory). Comparisons of the positive/negative valences between the INCR/MCAD and the Criminal Attribution Inventory were made with the Similarity Index (see below). Other research with offenders comparing one valence with another (for the same content area) has found a correlation of .61, suggesting that this does not have to be a factor in responding (Kroner, Reddon, & Beckett, 1991). To address this directly in the current study, a measure of criminal attributions, not related to the research questions, will be used to examine the impact of valence response patterns.

The Similarity Index was also used to indicate the degree of acquiescent responding to positive valence over negative valence items. The Criminal Attribution Inventory’s positive and negative valence scales were correlated with the Actuarial Risk Estimate. As with the INCR and MCAD/Actuarial Risk Estimate Similarity Index calculation, the Criminal Attribution Inventory/Actuarial Risk Estimate pattern of correlations was evaluated with the Similarity Index. If the coefficients of the Similarity Index are similar between the INCR and MCAD/Actuarial Risk Estimate and Criminal Attribution Inventory /Actuarial Risk Estimate

relationships, then an argument could be made for acquiescent responding contributing to the zero order INCR/MCAD relationship.

Results

Descriptive, Psychometric Properties, Correlations, and Similarity Index⁴

The INCR and MCAD descriptives with 95% confidence intervals are graphically represented in the Figure 1 back-to-back bar graph. These results suggest sufficient variability present for obtaining strong correlations. Cronbach's alphas for the INCR (ranged from .71 [Internal Resources] to .86 [Agency]) and MCAD (ranged from .65 [Valued Social Place] to .80 [Relationship Depth]) scales are similar, except for the Integrated into Social Structures (.67 vs. .79) and Agency (.70 vs. .86) scales, which have noticeably strongly INCR coefficients. For the most part, the Cronbach's alphas are within the adequate range (modest range, $> .70$, Nunnally & Bernstein, 1994), except for the MCAD's integrated into Social Structure (.67) and Valued Social Place (.65). The test-retest coefficients are between .35 and .60 for the INCR scales and between .30 and .52 for the MCAD scales. The range are slightly lower than found in other correctional samples (range .53 to .77, Kroner et al., 1991).

The zero-order correlations between the corresponding INCR and MCAD scales (Table 1) range between -.06 (Internal Resources) and -.25 (Agency). These correlations are relatively low; a correlation of $|.25|$ accounts for just 6.25% of the shared variance. Contrary to our hypothesis, these correlations are not within a moderate or strong range.

To further examine the relationship between the INCR and MCAD, the total zero order correlation matrix was compiled. Two INCR scales showed consistently stronger negative correlations. The INCR Internal Resources scale had correlations within the correlation matrix ranging from -.16 to -.39 ($M = -.28$). The INCR Valued Social Place scale had correlations

within the correlation matrix ranging from $-.15$ to $-.37$ ($M = -.25$). Thus, the present results show limited one-to-one relationships (e.g., MCAD Relationship Depth vs. INCR Relationship Depth), but one person-based INCR scale (Internal Resources) and one Social-based INCR scale (Valued Social Place) demonstrated consistently stronger results with all other MCAD measures.

The zero-order correlations between the INCR and the Actuarial Risk Estimate were positive, but were weak between the MCAD scales and the Actuarial Risk Estimate (Table 2). Of note the current Actuarial Risk Estimate scores ($M = 5.0$) were lower than an incarcerated violent sample ($M = 8.6$, Mills & Gray, 2013), but had similar dispersion ($SD = 2.3$, current vs. 3.1) and range ($1-12$, current vs. $0-13$). Compared to other research correlating a self-report measure with an actuarial measure, the present correlations are weaker ($.25$, Walters, 2008). Other research, though, has had correlations in the similar range as the present study ($.17$, Walters, 2002). The similarity index of the INCR and MCAD relations with the Actuarial Risk Estimate indicated much divergence ($-.62$). The residualized INCR correlations with the Actuarial Risk Estimate were near zero; whereas the residualized MCAD scales (INCR variance removed) correlations with the Actuarial Risk Estimate were all negative: mostly in the low teens. Clearly, the difference in variance accounted for between the individual residualized INCR and MCAD correlations was present, but not as strong as the Similarity Index, which indicated that the two patterns of correlations were dissimilar ($-.37$, Table 2). Thus, the independent INCR and MCAD variances were not similar in terms of their relationship with the Actuarial Risk Estimate.

Potential Methodological Artifacts

Internal Consistency. Correlations corrected for internal consistency (Table 1, second column) had a similar pattern to the original set of zero-order correlations. Thus, the internal consistency of specific scales (or the lack thereof) did not attenuate the zero-order correlations.

The Valued Social Place and Agency scales did demonstrate some change (-.24 vs. -.34; -.25 vs. -.32), but this represents a difference of only 4% of the total variance and is non-significant.

Item Stability and Consistent Responder Groups. Given that the measures of crime-causing factors and crime-reducing factors are each, by definition, from different past timeframes, the overall zero-order correlations could be due to the answers of those who are more consistent in their responses. To test for this, the symmetry correlations are compared to the Consistent Responder Group correlations. Prior to the main item stability analyses, a check was conducted to ensure that the Consistent Responder Group had more stable responses than total group zero-ordered correlations.

The comparison between the set of INCR and MCAD zero-order and Consistent Responder Group correlations (first and third columns of Table 1) showed that the majority of consistent responder correlations were of similar strength or less. The two exceptions were the Relationship Depth and Affective Engagement scales. For these two scales, the strength of the correlations was stronger than the zero-order correlations. This result indicates that the zero-order correlations (-.18 and -.16) could be partially due to the influence of consistent responders. For these two scales, the weak zero-order correlations could be due to a lack of consistent responding, suggesting a truly stronger relationship between the INCR and MCAD measures. But even if these two correlations are due to consistent responders, they still only account for ~3% of the total variance. Overall, the weak zero-order correlations cannot be attributed to poor internal consistency or a lack of item stability in the responses.

What makes these results with the Consistent Responder group of particular importance is that the Consistent Responder group test-retest coefficients were substantially stronger (Table 3, $n = 48$ columns vs. $n = 35/6$ columns). For the INCR/MCAD results the Consistent Responder

Group comparisons had minimal differences with the total group INCR/MCAD correlation results, and this is in the context of the Consistent Responder group's test-retest coefficients being substantially stronger.

To determine if this dissimilarity (-.62, -.37) was due to acquiescent positively-valenced responding, the Criminal Attribution Inventory true-keyed and false-keyed created scales were correlated with the Actuarial Risk Estimate. The Similarity Index was .16, indicating a weak level of similarity. Thus, the comparable -.62 was not solely due to a general tendency to positively-valenced acquiescent responding.

Statistical Power. Given the prominence of null results, a small sample size may have limit the potential of stronger results. Yet post hoc power analysis demonstrated sufficient power (study power = .78, typical = .80) for the zero-ordered correlations ($\alpha=.05$, $n = 63$, $\rho = .3$).

Discussion

According to the RNR and SPJ approaches, there is symmetry between crime-causing and crime-reducing factors. Overall, our results suggest that these two areas are not a mirror of each other as expected. With the benefit of a multi-time assessment, these results persisted after accounting for internal consistency, item stability, valence, and unique variance measurement issues. This asymmetry is consistent with suggestions from the desistance literature that crime-reducing factors often differ from risk factors despite these latter factors often being framed as treatment targets in the RNR and SPJ literature. The finding of asymmetry adds to the literature, given that there are key differences between our approach and the prototypic desistance study.

Often, research examining crime-causing and crime-reducing factors compares views from active criminals and desisting offenders to determine any differences in beliefs about crime and desistance; differences are explained by their relative investment in or reluctance regarding

criminal pursuits. In contrast, we assessed a single group of offenders' concurrent perceptions of both crime-causing and crime-reducing factors while they are still engaged with the criminal justice system; focusing on periods of criminal activity and periods of non-offending.

The current study is different than other desistance studies in three other areas. First, the empirical test for assessing the uniqueness of desistance allowed for a strong relationship between crime-causing and crime-reducing factors. The item content was the same for the INCR and MCAD, with the only difference being item valence. With risk assessment instruments that include protective domains, crime-causing and crime-reducing factors are *a priori* different (START, Webster et al., 2006). These scales, as with much of the desistance literature, tend to emphasize how different processes are associated with crime commission and crime reduction processes. Comparing these two areas using these risk scales, would preclude a stringent test of the relationship between crime-causing and crime-reducing factors. Conceptualizing the relationship between crime-causing and crime-reducing items as a simple reversal can more closely assess for a symmetrical one-to-one relationship. The extent to which these constructs are different may potentially explain the present findings.

Second, the methodological development of many desistance measures has been based on reversing of crime-causing factors (e.g., dysfunctional family indicators become a positive family processes; Polaschek, 2016). In contrast to this past research, the starting point for the measures used in the current study was crime-reducing, as measured by the MCAD. The development of the MCAD emphasized psychological and social processes, initially drawing upon compensatory risk neutralizing activities, wisdom literature, and protective risk strategies. The beginning point for the present study were items measuring the desistance process not criminal propensity per se.

Third, in contrast to other research, both social and person-based factors are measured in the INCR and MCAD (Polaschek, 2016). In the crime-causing literature, dynamic risk factors are typically person-based and can include antisocial cognitions, impulsivity, and negative affect (Douglas & Skeem, 2005). In the desistance literature, either social factors (Laub & Sampson, 1993) or person-based factors (Woldgabreal, Day, & Ward, 2014) can be the focus. Practically, social and person-based factors interact. For example, if life at home is disorganized, contributing to an increase in the expression of impulsivity, then spending time at work or somewhere else might protect from the expression of impulsivity. With little consensus regarding the ranking or relative importance of social vs. personal factors, the particular contribution of each will likely vary across individuals and time.

Implications for Service Administrators

Optimal correctional service delivery needs a two-step process, similar to Fagan's (2002) distinction between Level 1 and Level 2 services. Level 1 focuses on system resources, addressing the issue of what should be done for the total population. The widely-endorsed criminogenic need principle has received much impetus from meta-analyses of controlled treatment studies that examined correlates of programs that worked relatively well in reducing recidivism. There is strong support for the principle that targeting a large number of variable risk factors (relative to the number of non-risk factors targeted) relates strongly to a program's effectiveness in reducing recidivism (Hanson, Bourgon, Helmus, & Hodgson, 2009). The structuring of a system's intervention resources according to the frequencies of crime-causing factors (i.e., 60% of population have substance misuse issues, therefore 60% of programming resources assigned to substance misuse) maybe a loose guideline. As causal crime-reducing factors are better understood, then a specific need areas may become of greater importance,

supervening the frequency criteria for allotting intervention resources. For example, an evaluation of an antisocial attitudes program showed that group comparisons demonstrated the typical reductions in recidivism (Kroner & Yessine, 2013). But the within, causal analysis failed to demonstrate the expected associations with recidivism. If, though, the treatment results affected a social interpersonal dimension, that of antisocial associates, a treatment effect emerged. From an administration perspective, placing greater system resources into the treatment of antisocial associates may have a great impact of reducing recidivism than solely using the frequency of crime-causing factors in a population.

Thus, the frequency of crime-causing factors may currently be a sufficient guideline for treatment resource allocation, but not optimal. The development of causal crime-reducing factors will provide direction for and ordering of crime-reducing factors (Wooditch, Tang, & Taxman, 2014), the development of intervention strategies, and more effect resource allocation policies.

Implications for Service Providers

Level 2 service delivery refers to services that are targeted according to specific need areas, which may or may not be mandated (Fagan, 2002). This level highlights individual differences among offenders. Based on the present study, the role of offender perceptions are central to understanding potential crime-reducing strategies. The importance of these self-perceptions was re-enforced by measurement and methodological issues not mitigating the asymmetry results. Understanding that offender perceptions of crime-reducing factors are valid and can be integrated into risk reduction and management is in contrast to solely using a risk assessment instrument for assessment and intervention planning. This allows the offender to have a meaningful role in their transitioning to a lifestyle of reduced criminal activity.

Accounting for offender crime-reducing perceptions can be helpful in understanding the complexities in how both crime-causing and crime-reducing factors operate. The lack of symmetry found in the present study between crime-causing and the corresponding crime-reducing factors is similar to the differences found in asking offenders if they changed for the worse and if they changed for the better. In a high-risk sample, changed for the worse was predictive of reconvictions, whereas change for the better was considerably less predictive (Polaschek & Yesberg, 2015). When entered into a regression model after controlling for commitment to desistence, endorsement of changed for the worse continued to statistically contribute to the recidivism outcome. It appears that offenders can commit to the crime-reducing process, while at the same time engaging in significant crime-causing processes. The RNR and SPJ models do not provide a framework for addressing this asymmetry. Addressing crime-causing factors and accounting for crime-reducing processes should enhance the transition to a lifestyle of reduced criminal activity.

In addition to accounting for offender perceptions, the results suggest that conducting risk assessments with subsequent intervention recommendations need not be bound by an assumption of symmetry between crime-causing and crime-reducing factors. This symmetry appears to be weak, and possibly is not a necessary condition to make subsequent idiographic recommendations of offender intervention. Thus, at the idiographic level, asymmetry should be allowed by the service provider in conducting risk assessments and informing risk reduction interventions. Contrasting a medical and criminal justice example will highlight this asymmetry. Hypertension can be effectively treated with exercise or with a beta blocker; in both cases the exact same cause/disease is present but either intervention can mitigate symptoms. If relationship conflict was a crime-causing factor, intervention efforts could be targeted to reduce relationship

conflict through teaching communication skills or problem-solving skills. But contrary to the hypertension situation, these do not always lead to less conflict. Given these conflicts involve two individuals, skill enhancement by only one party may not guarantee a satisfactory relationship.

Integration of Crime-Causing and Crime-Reducing Factors

Based on the weak one-to-one correlations between the crime-causing and crime-reducing factor scales and the overall weak level of any combination of correlations (except for INCR Internal Resources and INCR Valued Social Place), the evidence for asymmetry occurred across multiple domains. This suggests a complex web of interactions between crime-causing and crime-reducing perceptions and related behaviors. This weak relationship might suggest a hierarchical relationship between crime-causing and crime-reducing factors in relation to criminal behavior. In a latent class study, offenders characterized by a greater number of dynamic risks and destabilizers were more likely to re-offend, independent of static levels (Taxman & Caudy, 2015). Furthermore, dynamic risks have been distinguished as stable (traditional criminogenic needs) and acute (quickly changing risk factors; Serin et. al., 2016). Although these may be possibilities, it needs to be stated that the integration of these two areas is empirically weak and the literatures covering these two areas are distinct. Further work with person-based models will need to have compelling rationales for how these two areas could relate to each other.

Limitations

There are a number of limitations present in drawing our conclusions. The measurement of item stability in the responses was used as a methodological control to assess for the contribution of potential methodological artifacts to a minimal relationship between crime-

causing and crime-reducing factors. But instability could indicate that real change had occurred. Contrasting two distinct past timeframes (crime-causing vs. crime-reducing) may reflect a general process of change, rather than causal crime attributions. A second area of concern is that risk factors may interact with one another to produce crime. If so, one might not necessarily see a great deal of variable-by-variable symmetry.

Third, the nature of the sample, in terms of being lower risk (probationers), may limit the generalizability of the current results. These results may be generalizable to other probationers, but because of their lower risk, the nature of their offenses and the lower density of offending may be associated with psychologically different events that either cause or reduce offending, compared to higher risk offenders. But it should be noted that, although the TTV mean risk score was lower, the dispersion and range was similar to a violent incarcerated sample, indicating a range of crime-causing factors in the sample. Also related to this point is that we do not know which offences or offence-free periods the offenders are referencing. Brief and non-sustainable periods of being crime-free would permit them to have the ability to recall the MCAD items but may not qualify as participating in a desistance process. Fourth, some efforts were made to account for item stability in the responses, but memory issues were not addressed. Offenders may find it easier to recall periods where they were engaged in crime and what was going on with them versus the “periods of non-crime”.

Conclusion

The weak one-to-one relationships between the crime-causing and crime-reducing scales offer only minimal support for the symmetrical assumption in the RNR and SPJ approaches. Rational arguments for asymmetry have been made (Polaschek, 2016) with minimal supporting evidence (Skeem and Monahan, 2011). The present results suggest there is much asymmetry.

Just as medical decision making has begun to use additional sources for determining intervention (i.e., integrate patient involvement) efforts (Trump, Linkov, Edwards, & Linkov, 2015), we also need to address additional avenues of *causal* crime-reducing services with clients involved in the criminal justice system.

Endnote

¹ The full MCAD can be downloaded from: <https://sites.google.com/...>

² There are high demand situations that may be strong motivation for an offender to alter otherwise normal causal perceptions.

³ The full Criminal Attribution Inventory can be downloaded from: <https://sites.google.com/...>

⁴ The full data set can be downloaded from: <https://sites.google.com/...>

References

Andrews, D. A., & Bonta, J. (2010). Rehabilitating criminal justice policy and practice.

Psychology, Public Policy, and Law, 16, 39–55. <http://doi.org/10.1037/a0018362>

Brown, B., & Rakow, T. (2015). Understanding clinicians' use of cues when assessing the future risk of violence: A clinical judgement analysis in the psychiatric setting. *Clinical*

Psychology & Psychotherapy, 23, 125-141. <https://doi.org/10.1002/cpp.1941>

Bureau of Justice Statistics (BJS) - Correctional Populations in the United States, 2015. (2016).

Retrieved August 1, 2017, from <https://www.bjs.gov/index.cfm?ty=pbdetail&iid=5870>

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, N.J: Psychology Press.

Connell, C. (2016). Forensic occupational therapy to reduce risk of reoffending: A survey of

practice in the United Kingdom. *The Journal of Forensic Psychiatry & Psychology*,

27(6), 907–928. <https://doi.org/10.1080/14789949.2016.1237535>

Douglas, K. S., Hart, S. D., Groscup, J. L., & Litwack, T. R. (2014). Assessing Violence Risk. In

I. B. Weiner & R. K. Otto (Eds.), *The Handbook of Forensic Psychology, 4th Edition* (4th ed., pp. 385–441.). Hoboken, New Jersey: John Wiley & Sons.

- Douglas, K. S., & Skeem, J. L. (2005). Violence risk assessment: Getting specific about being dynamic. *Psychology, Public Policy, and Law*, *11*(3), 347–383.
<http://doi.org/10.1037/1076-8971.11.3.347>
- Elbogen, E. B., Mercado, C. C., Scalora, M. J., & Tomkins, A. J. (2002). Perceived relevance of factors for violence risk assessment: A survey of clinicians. *International Journal of Forensic Mental Health*, *1*(1), 37–47. <https://doi.org/10.1080/14999013.2002.10471159>
- Fagan, T. J. (2003). Mental health in corrections: A model for service delivery. In T. J. Fagan & R. K. Ax (Eds.), *Correctional Mental Health Handbook* (pp. 3–19). Thousand Oaks, CA: Sage.
- Furr, R. M. (2010). The double-entry intraclass correlation as an index of profile similarity: meaning, limitations, and alternatives. *Journal of Personality Assessment*, *92*(1), 1–15.
<http://doi.org/10.1080/00223890903379134>
- Hanson, R. K., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The principles of effective correctional treatment also apply to sexual offenders: A meta-analysis. *Criminal Justice and Behavior*, *36*(9), 865–891. <http://doi.org/10.1177/0093854809338545>
- Hřebíčková, M., & Graf, S. (2014). Accuracy of national stereotypes in central Europe: Outgroups are not better than ingroup in considering personality traits of real people. *European Journal of Personality*, *28*(1), 60–72. <http://doi.org/10.1002/per.1904>
- Kraemer, H. C. (2003). Current concepts of risk in psychiatric disorders. *Current Opinion in Psychiatry*, *16*(4), 421–430. <http://doi.org/10.1097/01.yco.0000079210.36371.52>
- Kroner, D. G. (2012). Service user involvement in risk assessment and management: The Transition Inventory. *Criminal Behaviour and Mental Health*, *22*(2), 136–147.
<http://doi.org/10.1002/cbm.1825>

- Kroner, D. G., & Mills, J. F. (2003). *The CRiminal Attribution Inventory: User guide*. Kingston, Ontario: Authors.
- Kroner, D. G., & Mills, J. F. (2004). The Criminal Attribution Inventory: A measure of offender perceptions. *Journal of Offender Rehabilitation*, 39(4), 15–29.
http://doi.org/10.1300/J076v39n04_02
- Kroner, D. G., & Mills, J. F. (2015). *The Transition Inventory: User guide*. Carbondale, Illinois: Authors.
- Kroner, D. G., Reddon, J. R., & Beckett, N. (1991). Basic Personality Inventory clinical and validity scales: Stability and internal consistency. *Journal of Psychopathology and Behavioral Assessment*, 13(2), 147–154. <http://doi.org/10.1007/BF00961428>
- Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. Washington, DC, US: American Psychological Association.
- Mills, J. F., & Gray, A. L. (2013). Two-tiered violence risk estimates: A validation study of an integrated-actuarial risk assessment instrument. *Psychological Services*, 10(4), 361–371.
<http://doi.org/10.1037/a0032608>
- Mills, J. F., & Kroner, D. G. (2005). *Two-Tiered Violence Risk Estimates*. Kingston, ON: Authors.
- Monahan, J., & Skeem, J. L. (2014). Risk redux: The resurgence of risk assessment in criminal sanctioning. *Federal Sentencing Reporter*, 26(3), 158–166.
<http://doi.org/10.1525/fsr.2014.26.3.158>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

- Polaschek, D. L. L. (2016). Desistance and dynamic risk factors belong together. *Psychology, Crime & Law*, 22(1-2), 171–189. <http://doi.org/10.1080/1068316X.2015.1114114>
- Polaschek, D. L. L., & Yesberg, J. A. (2015). Desistance in high-risk prisoners: Pre-release self-reported desistance commitment and perceptions of change predict 12-month survival. *Practice: The New Zealand Corrections Journal*, 3(1), 24–29.
- Serin, R. C. (1993). Diagnosis of psychopathology with and without an interview. *Journal of Clinical Psychology*, 49(3), 367–372.
- Serin, R. C., Chadwick, N., & Lloyd, C. D. (2016). Dynamic risk and protective factors. *Psychology, Crime & Law*, 22(1-2), 151–170.
<http://doi.org/10.1080/1068316X.2015.1112013>
- Skeem, J. L., Manchak, S. M., Lidz, C. W., & Mulvey, E. P. (2013). The utility of patients' self-perceptions of violence risk: Consider asking the person who may know best. *Psychiatric Services*, 64(5), 410–415. <http://doi.org/10.1176/appi.ps.001312012>
- Skeem, J. L., & Monahan, J. (2011). Current directions in violence risk assessment. *Current Directions in Psychological Science*, 20(1), 38–42.
<http://doi.org/10.1177/0963721410397271>
- Sturup, J., Edens, J. F., Sörman, K., Karlberg, D., Fredriksson, B., & Kristiansson, M. (2014). Field reliability of the Psychopathy Checklist-Revised among life sentenced prisoners in Sweden. *Law and Human Behavior*, 38(4), 315–324. <https://doi.org/10.1037/lhb0000063>
- Taxman, F. S., & Caudy, M. S. (2015). Risk tells us who, but not what or how. *Criminology & Public Policy*, 14(1), 71–103. <http://doi.org/10.1111/1745-9133.12116>
- Trump, B. D., Linkov, F., Edwards, R. P., & Linkov, I. (2015). Not a Humbug: The evolution of patient-centred medical decision-making. *Evidence Based Medicine*, 20(6), 193–197.

- Ungar, M. (2004). A constructionist discourse on resilience: Multiple contexts, multiple realities among at-risk children and youth. *Youth & Society*, 35(3), 341–365.
<http://doi.org/10.1177/0044118X03257030>
- Walters, G. D. (2002). Current and Historical content scales for the Psychological Inventory of Criminal Thinking Styles (PICTS). *Legal & Criminological Psychology*, 7(1), 73.
<http://doi.org/10.1177/1073191102009003007>
- Walters, G. D. (2006). Risk-appraisal versus self-report in the prediction of criminal justice outcomes A meta-analysis. *Criminal Justice and Behavior*, 33(3), 279–304.
<http://doi.org/10.1177/0093854805284409>
- Walters, G. D. (2008). Self-report measures of psychopathy, antisocial personality, and criminal lifestyle testing and validating a two-dimensional model. *Criminal Justice and Behavior*, 35(12), 1459–1483. <http://doi.org/10.1177/0093854808320922>
- Webster, C. D., Nicholls, T. L., Martin, M.-L., Desmarais, S. L., & Brink, J. (2006). Short-Term Assessment of Risk and Treatability (START): The case for a new structured professional judgment scheme. *Behavioral Sciences & the Law*, 24(6), 747–766.
<http://doi.org/10.1002/bsl.737>
- Woldgabreal, Y., Day, A., & Ward, T. (2014). The community-based supervision of offenders from a positive psychology perspective. *Aggression and Violent Behavior*, 19(1), 32–41.
<http://doi.org/10.1016/j.avb.2013.12.001>

Wooditch, A., Tang, L. L., & Taxman, F. S. (2014). Which criminogenic need changes are most important in promoting desistance from crime and substance use? *Criminal Justice and Behavior*, *41*(3), 276–299. <https://doi.org/10.1177/0093854813503543>

Wormith, J. S., Hogg, S. M., & Guzzo, L. (2015). The predictive validity of the LS/CMI with Aboriginal offenders in Canada. *Criminal Justice and Behavior*, *42*(5), 481–508. <https://doi.org/10.1177/0093854814552843>

Table 1

Correlations between the Corresponding scales of the Increasing Criminal and Antisocial Factors (INCR) and the Measures of Criminal and Antisocial Desistance (MCAD).

	Zero Order (<i>n</i> = 63)	Corrected for α (<i>n</i> = 63)	Consistent Responder ^a (<i>n</i> = 35/36)
Internal Resources	-0.06	-0.08	-0.06
Behavioral Controls	-0.10	-0.14	-0.09
Relationship Depth	-0.18	-0.22	-0.34
Affective Engagement	-0.16	-0.21	-0.25
Integrated into Social Structures	-0.15	-0.21	-0.07
Valued Social Place	-0.24	-0.34	-0.29
Agency	-0.25	-0.32	-0.17

Note. ^a Items from the analyzed scale (i.e., INCR/MCAD Internal Resources correlation, *r* = -0.06) were not used on the construction of the Consistent Responder Group.

Table 2

Measures of Increasing Criminal and Antisocial Factors (INCR) and Measures of Criminal and Antisocial Desistance (MCAD) correlations with the Actuarial Risk Estimate.

	INCR	MCAD	INCR-residual	MCAD-residual
Internal Resources	.16	.00	.10	-.03
Behavioral Controls	.07	.10	.02	-.15
Relationship Depth	.13	-.01	-.03	-.13
Affective Engagement	.03	-.04	.00	-.14
Integrated into Social Structures	.14	.03	-.05	-.12
Valued Social Place	.09	-.08	.02	-.08
Agency	-.02	.05	.03	-.15
<i>Similarity Index</i>				
MCAD	-.62			
INCR – residual	.86	-.44		
MCAD – residual	-.57	.99	-.37	

Note. Actuarial Risk Estimate is scored from the Two-Tiered Violence Risk Estimates Scale. The coefficients in the upper table are correlations and below the mid-line are the Similarity Index statistic. Descriptives of the Actuarial Risk Estimate are M= 5.0, SD = 2.4, range 1-12.

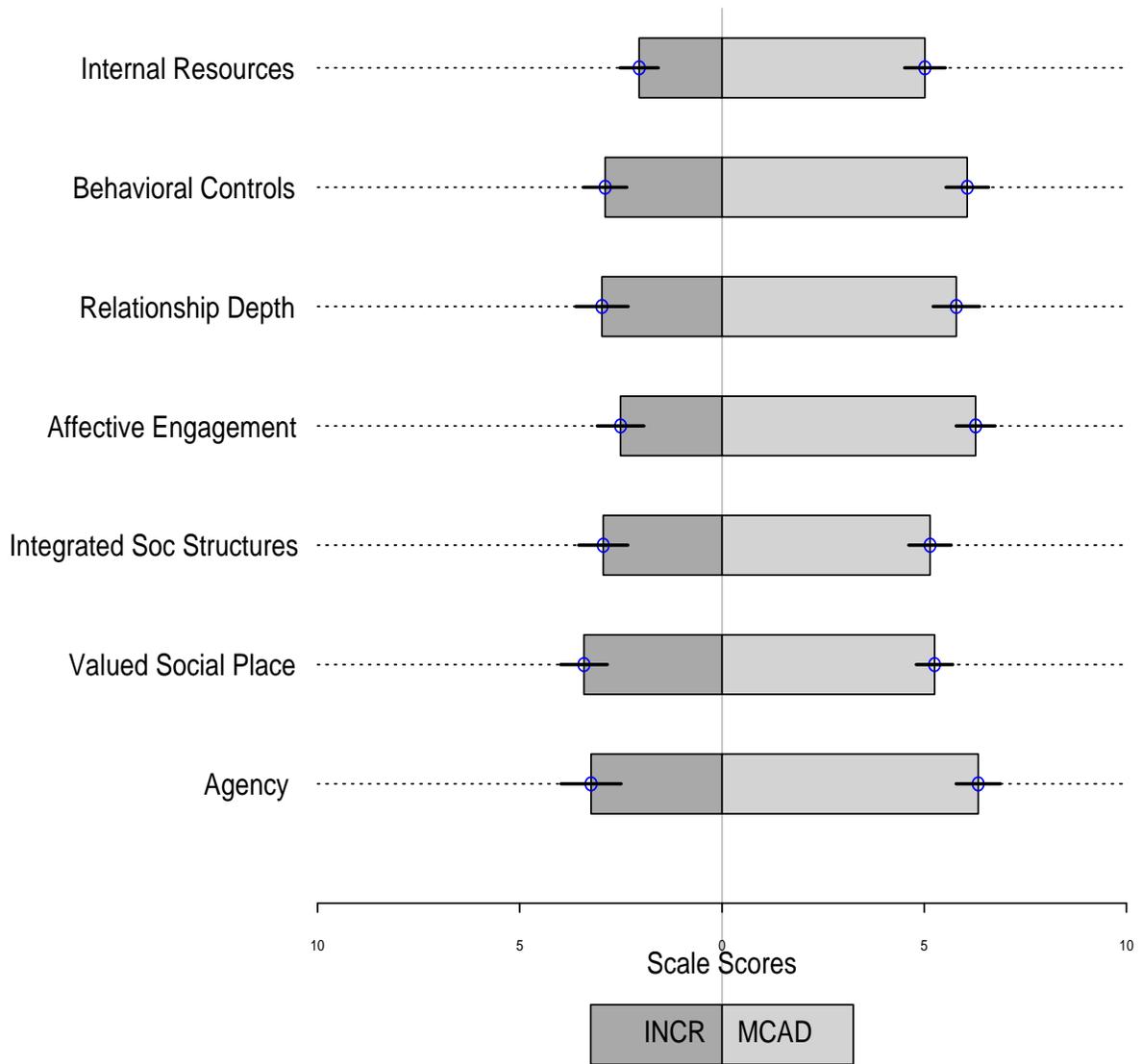
Table 3

Test-Retest Reliabilities for the Measures of Increasing Criminal and Antisocial Factors (INCR) and Measures of Criminal and Antisocial Desistance (MCAD).

	INCR		MCAD	
	(n = 48)	(n = 35/6) ^a	(n = 48)	(n = 35/6) ^a
Internal Resources	.60	.64	.41	.53
Behavioral Controls	.46	.69	.30	.49
Relationship Depth	.35	.43	.41	.75
Affective Engagement	.54	.65	.33	.68
Integrated into Social Structures	.41	.58	.52	.76
Valued Social Place	.43	.34	.41	.67
Agency	.57	.74	.31	.59

Note. ^aTest-retest for the Consistent Responder group. INCR = Measures of Increasing Criminal and Antisocial Factors, MCAD = Measures of Criminal and Antisocial Desistance.

Figure 1



Back-to-back Barplot of INCR and MCAD Mean scores with 95% CI (N = 63)