

# An instrument for assessing prosocial reasoning in probation youth

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## Abstract

*Aim/Background: The study describes a developmental measure of prosocial reasoning in adolescents, the Prosocial Reasoning Outcomes (PRO). Relevant research and theory are reviewed. In addition, the characteristics of the instrument are described.*

*Material/Methods: Three samples of youth were used. The first was 14 males at a high level treatment facility for youth who sexually offend, and the second was 30 male youth in a medium level facility. A third sample was 16 males and 14 females from a private high school. Also characteristics were examined regarding the PRO in relation to the JSORRAT-II, the WSCT, the SCL 90-R, the Y-OQ, and the CBCL.*

*Results: The PRO exhibited characteristics consistent with a developmental measure of prosocial reasoning including increasing with age, differentiating high and medium level treatment populations, and a private high school group. It also showed a treatment effect from a time-limited intervention and a residential treatment. The PRO also showed a relationship with the GSI scale of the SCL 90-R and the JSORRAT-II. The PRO had adequate interrater reliability.*

*Conclusions: The PRO has characteristics that would be expected of a developmental measure of prosocial reasoning in probation youth. More research with larger and more diverse samples would be required to further validate the measure.*

*Keywords: Adolescent, prosocial, assessment, developmental, probation*

## Introduction and Literature Review

A central issue in the treatment of juveniles who sexually offend (JSO), and for the general juvenile probation population, is what factors are being treated and if they can be measured. While an important ultimate outcome for a treatment approach would be a reduction in sexual and/or nonsexual recidivism, this does not measure the factors that the treatment model is trying to address which may influence recidivism, whether it is increasing strengths or reducing deficits. One important factor that has been identified in the JSO and general probation treatment literature as a treatment outcome, is moral or prosocial reasoning. The underlying assumption of such models is that youth who violate laws have challenges in their ability to follow rules and laws, that is regarding moral or prosocial reasoning. This view would assume that there is a set of internalized cognitive schemas or rules that generate the person's social behavior particularly with regard to harm to others, property, and following laws and social norms. It is reasonable to assume that regardless of the treatment method, if youth are committing crimes less frequently, this is due to changes in some mediating variable, such as their social reasoning, judgment, and behavior, and a decision at a given time and situation not to behave in a criminal fashion. While probation, parental supervision, or peer group influences are likely to influence behavior, to recidivate a youth has to exercise a choice that had a delinquent outcome. If treatment methods for JSO and probation youth generally are effective, it would be presumed that this would be reflected in changes in moral or prosocial

reasoning, and that it would be important to have reliable and valid measures of such factors. Such measures should also be able to assess changes in prosocial reasoning found in adolescence generally and also be consistent with research regarding models of adolescent cognitive development. The present paper describes preliminary research with this type of instrument.

## Treatment methods

A significant treatment literature exists regarding prosocial reasoning for offender populations which is relevant to understanding measures of prosocial development. Some of this literature is summarized in the chapter, "Social Problem Solving Deficits in Offenders" by Antonowicz and Ross (2005). They note, "Overall, the evidence from a number of empirical studies presented and reviewed in this chapter indicates that there is a link between social problem solving and offending" (p. 98). Antonowicz (2005) notes, "... a search of four decades of research literature on the relation between cognition and crime revealed a considerable body of empirical evidence that many offenders have experienced developmental delays in the acquisition of a number of cognitive skills that are essential to social adaptation" (p. 164). Citing Ross he notes developmental delays in offender populations in the acquisition of cognitive skills important for real life adaptation which include:

- Impulsivity
- Concrete thinking
- Externality
- Conceptual rigidity
- Interpersonal cognitive problem solving skills
- Egocentricity
- Critical reasoning
- Values

This research led to the development of a comprehensive, multifaceted, manualized program for teaching these cognitive skills and values, the Reasoning and Rehabilitation (R&R) Program (Ross & Ross, 1995). R&R combined the best techniques from programs which reduced recidivism, and could teach social cognitive skills. It is a 35 session (70 hour) group program. Major components of R&R are as follows:

- Self-control
- Meta cognition
- Social skills
- Interpersonal cognitive problem solving skills
- Creative thinking
- Critical reasoning
- Social perspective taking
- Values enhancement
- Emotional management
- Helper therapy

Joy and Farrington (2006) reported a 14% reduction in recidivism among prisoners who completed R&R compared with controls.

Aggression Replacement Training (ART) (Goldstein, Glick, & Gibbs, 1998) and Moral Reconation

Therapy (MRT) (Little & Robinson, 1988) are two other treatment models that promote prosocial or moral reasoning and have been used with probation adolescents. Both ART and MRT have a large body of evidence regarding their effectiveness in reducing juvenile recidivism and other outcomes. ART is a 30 session group intervention developed for probation youth. Based on available research it identified that deficits in social skills, moral reasoning, and emotional control are modifiable criminogenic factors which if improved, would be associated with reduced recidivism. The moral reasoning component is based directly on Kohlberg's view of moral development. In this model, lower stages of moral development, at the pre-conventional level, are more likely to be associated with delinquent outcomes. ART has been validated in numerous outcome studies (Goldstein, Nensén, Daleflod, & Kalt, 2005) showing a reduction in recidivism. Related models are the Prepare Curriculum: Teaching Prosocial Competencies (Goldstein, 1999) and Thinking for a Change developed by Bush, Glick, and Taymans (1997). Amendola and Oliver (2010) report ART is a "Model Program" for the United States Office of Juvenile Justice and Delinquency Prevention and the United Kingdom Home Office. They also note it is classified as a "Promising Approach" by the United States Department of Education. MRT also uses Kohlberg's model of moral reasoning, and views delinquent behaviors as related to deficits in moral development. Ferguson and Wormith (2012) reviewed existing literature and conclude that MRT is effective in reducing recidivism across a variety of forensic population and age groups, including juveniles. MRT participants recidivate at one third the rate of a comparison group of offenders. The above summary of treatment methods provides a basis for understanding the importance of measures of prosocial or moral reasoning in offender treatment. A practical measure of prosocial or moral reasoning would be an important tool in understanding the effectiveness of interventions to increase this domain.

## Assessment methods

A number of measures have been used to assess adolescent levels of moral or prosocial reasoning relevant for probation youth. The Defining Issues Test (DIT) (Rest, Narvaez, Thoma, & Bebeau, 2000) is a well-researched instrument for assessing moral reasoning. The authors note that simply asking adolescents if their behavior is moral, in their view, does not produce useful information about moral reasoning. Their approach examines what types of moral schemas are activated when individuals are presented with certain types of problems or dilemmas. The DIT has subjects rate items in terms of moral importance to obtain a measure of moral reasoning. One item, for example, describes a situation where a poor man is deciding if he should rob a rich man. The website for the test (University of Alabama, n.d.) notes that, "... validity for the DIT has been assessed in terms of seven criteria cited in over 400 published articles and references and some publications are provided." The DIT has been used with MRT with juveniles. It has been shown in several studies to increase moral reasoning levels. Burnette, et al. (2003) in a study of 33 teens using MRT in a residential setting, reported, "...desirable changes in sensation seeking and moral reasoning scores over the course of treatment" (p. 2). Burnette, et al. (2004), in a study also using MRT with 23 juveniles in a residential program noted, "Results showed that participants showed significantly lower antisocial characteristics, significantly less problem areas, and significantly lower levels of the lowest stage of moral reasoning as a consequence of program participation" (p. 14).

Another measure of moral reasoning is the How I Think Questionnaire (How I Think Questionnaire, n.d.). The questionnaire has 54 items that can be administered individually or in groups. Responses are rated on a six point Likert type scale (from agree to disagree strongly). It requires a fourth grade reading level. It measures four categories of thinking errors which include Self Centered, Blaming Others, Minimizing/Mislabeling, and Assuming the Worst. It also has four behavioral subscales: Opposition Defiance, Physical Aggression, Lying, and Stealing. Sample questionnaire items would include:

Rules are mostly meant for other people.  
 If I really want to do something, I don't care if it's legal or not.  
 You have to get even with people who don't show you respect.  
 People are always trying to hassle me.

Substantial literature exists regarding the favorable psychometric properties and utility of this instrument which has been translated into several languages including Spanish and French (Barriga, Sullivan-Cosetti, & Gibbs, 2009; Wallinius, Johansson, Lardén, & Dernevik, 2011). It has also been used to show positive outcomes in the EQUIP Program which is designed to promote moral reasoning and decrease cognitive distortions in delinquent youth (Brugman & Bink, 2011).

The Prosocial Moral Reasoning (PROM) is another instrument with a significant research literature regarding its utility that has been used to assess prosocial and moral reasoning in adolescents. It is suitable for males and females, and has been used with Spanish, Turkish, Chinese, and English-speaking youth. Adolescents read stories regarding social dilemmas that set up a conflict between the adolescent's own wishes and needs and those of others. One version used five stories and then asked youth to rate on a scale from one to five each of five reasons characters might have for behavior. These include five types of prosocial reasoning: hedonistic, needs oriented, stereotyped, approval oriented, and internalized. An overall score provides an indicator of the developmental level of the respondent's prosocial reasoning (Carlo, Eisenberg, & Knight, 1992; Siu, Shek, & Lai, 2012).

The Moral Judgment Test (MJT) (Feitosa, et al., 2013; Lind, 2015) assesses moral reasoning by examining how the subject deals with counterarguments to their views on difficult problems. It has a substantial literature regarding its usefulness. The subject is confronted with moral dilemmas and arguments pro and con. It measures the degree to which judgments are determined by a moral point of view rather than nonmoral considerations. For example, it examines whether someone behaves out of their own self-interest, by external compulsions, or out of moral motivation. The English language version has as part of the test reading a short story about how factory workers deal with an injustice. The respondent rates statements regarding the story as acceptable to unacceptable on a nine-point scale.

The above instruments for assessing moral reasoning had youth answer using fixed responses and were based on existing theories of moral reasoning. In contrast, the instruments described below, the Washington Sentence Completion Test (WSCT) and The Roberts 2, used a different approach: recording open ended responses of youth to either pictures or sentence stems. The responses of youth provide a sample of their thinking about everyday situations which in turn was the basis for the developmental theory used by these instruments. They can be objectively scored and have adequate psychometric properties. Both the Roberts 2 and the WSCT are grounded theories, that is developed from examining the responses of youth themselves, rather than a preexisting theory. The term "grounded theory" has also been used in the literature on qualitative research (Glaser & Strauss, 1965), but also similarly in describing the development of Motivational Interviewing (Naar-King & Suarez, 2011). The WSCT uses a sentence completion task to assess the youth's level of ego functioning (Hy & Loevinger, 1996). The instrument has sentence stems such as, "Rules are..." which the youth completes. Respondents can be assigned to one of eight levels of interpersonal maturity. The levels while generated from subjects' responses are also influenced by Erikson (1950) and Sullivan and Grant (1957). There are eight levels and the first is the Impulsive level. The modal stage for younger teens is the next level, the Self Protective, and for older teens, the Conformist level (Westenberg & Gjerde, 1999). Frank and Quilan (1976) compared 25 Black

and Hispanic delinquent adolescent girls with two control groups totaling 50, of nondelinquent girls matched for age, social class, and ethnic background. Many of the girls in both groups were at the Self Protective level. However, 48% of delinquent girls, and 4% of each of the matched samples had girls at the Impulsive level. Mikel (1974) tested 174 inmates at an adult county correctional facility. Those at the Impulsive level were described as easily provoked, undisciplined, and impulsive. Those at the Self Protective stage were seen as gregarious and critical of jail procedures. Those at the Conformists and Self Aware levels were seen as adjusted, and not rebellious or dogmatic. The 13% of individuals at the Postconformist levels were seen as truthful and receptive to counseling.

The Roberts 2 (Roberts, 2005) presents another approach for assessing prosocial reasoning. This is similar to the classic Thematic Apperception Test. The Roberts 2 involves showing pictures and asking the youth to make up a story that has several elements including what was going on before, what are people thinking and feeling now, and what is the outcome. The youth provides open ended answers to these pictures and it is possible to obtain a sample of the youth's prosocial reasoning. Unpublished research was done by the author with the Roberts 2 using probation and normative samples (Ralph, 2007). The samples were matched for age and ethnic group. The indices compared were Problem Identification and Problem Resolution. Probation youth had more responses on Level 1 and fewer responses on Level 4 than nonprobation youth. With normative samples Level 1 is more frequently used by younger adolescents and Level 4 more by older adolescents. The research showed probation youth were on average four years behind the level of social reasoning of nonprobation youth. These levels are described below:

- Problem Identification 1, Recognition (PID1): Simple recognition of feeling or behavior without preceding factors. A problem is not really defined or articulated.
- Resolution 1, Simple closure or easy outcome (RES1): A simple, easy, elliptic resolution of the problem, no intervening steps, e.g., "They lived happily ever after", "Then everything is good", or "Then they were friends."
- Problem Identification 4, Definition (PID4): Conflict or problem described with explanation of reasons for feelings and behavior. Description of the prior circumstances, and the internal process is elaborated.
- Resolution 4, Process described resolution of feelings & situation (RES4): Process is included and described in the constructive resolution of the problem situation. The related feelings are addressed and resolved.

Similar to the developmental theories of Piaget and Kohlberg, successive levels of development in the Roberts 2 are characterized by increasing complexity and differentiation. The Roberts 2 adds an important perspective to understanding moral or prosocial development during the teen years. Youth develop more complex models of social problems, their dynamics, and resolutions. Like the WSCT its theory is grounded in the actual responses of youth, rather than derived from a preexisting theory.

## **The Development of the PRO Model**

The present paper describes a new method for assessing prosocial reasoning in probation adolescents, the Prosocial Reasoning Outcomes (PRO). The instrument may offer an option for assessing prosocial reasoning. The PRO had several influences. The developmental theory of both the WSCT and the Roberts 2 were influential in creating the PRO. These instruments and their theory describe a progression in complexity of thinking that takes place in adolescence. The PRO has five story vignettes and for each vignette six follow up questions. This produces a total of 30

responses to score. The vignettes have the same structure and presents a dilemma where some rewarding opportunity may conflict with social rules, expectations of others, or laws. Responses to questions about vignettes give a sample of prosocial reasoning and are scored based on their complexity. The PRO is designed for males and females ages 12 to 18. It takes approximately 30 minutes to administer and youth write the answers. Below is an example of one of the story vignettes.

### **Juan's Problem**

**Juan is a 16-year-old whose parents left him at home for the weekend. His parents will check in with him by phone regularly. The parents told him he could go out with some male friends the parents knew and trusted, but no one else. Nobody could come in or over to the house. After his parents left for the weekend, a girl Juan likes called him. She heard his parents were gone for the weekend and said she was going to drop by at dinner time, just say "hi" and bring a pizza.**

Below are sample responses from youth, the first a lower and the second form a higher scoring youth. The questions youth are asked are in **bold** and the answers in *italics*.

### **First Example:**

**Why would Juan tell her it's OK to come over?**

*To hang out, probably to do stupid stuff, or have sex.*

**How would he feel if he did this?**

*Guilty.*

**What might happen?**

*He would get in trouble and his parents might not trust him.*

**Why would Juan tell her it's not OK to come over?**

*Because he doesn't want to get in trouble and knows it's the right thing to do.*

**How would he feel then?**

*He would feel proud of himself.*

**What might happen then?**

*I don't know.*

### **Second Example:**

**Why would Juan tell her it's OK to come over?**

*Because it's probably the girl he likes and doesn't want to say no to her.*

**How would he feel if he did this?**

*He'd feel good because he's hanging out with a girl he likes and having pizza with her.*

**What might happen?**

*They might probably kiss.*

**Why would Juan tell her it's not OK to come over?**

*Because his parents gave him a specific rule and he doesn't want to disobey them.*

**How would he feel then?**

*He'd feel good because he didn't disobey his parents.*

**What might happen then?**

*His parents might trust him more and possibility that he might get a few more privileges than he already has.*

## Scoring Levels for the PRO

The PRO was developed without preexisting scoring criteria or a specific model. The instrument was first used as an outcome tool to assess changes in a summer intervention, ART, for youth in a residential program for juveniles who sexually offended. The responses of 14 youth both before and after the intervention were collected. From that total of 28 responses, a scoring system and model was developed. While the categories were informed by the general developmental models described above used in the Roberts 2 and the WSCT, the PRO categories were developed from an examination of the responses themselves, using the constant comparison method developed from grounded theory (Glaser & Strauss, 1965). As used in this study, the process involved developing an ordinal scale after a thorough review of all the responses. This involved going back and forth between the emerging scale, and items, and revising the classification until all items could be assigned to one of the three levels.

The development of the scoring system for the PRO was similar to that described by the author in two other publications. In Ralph (1980) graduate clinical psychology students were interviewed regarding their self-perception of their development in learning psychotherapy. Qualitative research identified four stages in the development of learning psychotherapy which were learning the role of the counselor, a client centered approach, a relationship centered approach, and a counselor centered approach. The methods were also similar to that described in Ralph (1978) regarding stages of faculty development. Five stages of complexity in faculty roles were identified which correlated .87 with the WSCT measure of ego development. These stages were developed from an examination of open ended interviews with faculty members about their view of teaching.

The scoring levels developed for the PRO are described below. Each successive level is seen as more complex and differentiated than the one it preceded, similar to the Roberts 2. Answers that increase in complexity are scored at higher levels.

**Level 1 Concrete:** Simplistic or concrete description of feelings, rules, motives, outcomes, or consequences. Simplistic resolution of problems or feelings (e.g., "He is happy", "OK now"). Gratification of impulses is prominent, and also being overwhelmed, or helpless.

**Level 2 Normative:** Provides some context, contingencies, complexity, or alternatives. Perceiving and acting based on conventional rules, roles, and expectations of general society that are more than peer group values.

**Level 3 Principled:** Clear description of ambivalence, and alternatives, regarding feelings, rules, motives, outcomes, or consequences. Articulates concepts and/or steps regarding prosocial resolutions of problems and/or feelings.

For each youth using the PRO, each of their 30 responses was scored using the criteria for the PRO level system above. Then the average of their 30 responses was used as a summary score. For example, a summary score for the PRO of 2.5 meant that the arithmetic average of their 30

responses on all items was 2.5, and fell between Level 2 and Level 3.

## Materials and Methods

### Samples studied

Characteristics of the instrument were examined by using three samples of youth. The first sample consisted of 14 adolescent males in a residential treatment program. Their average age was 15.5 and 14% were in special education. The Juvenile Risk Assessment Instrument-II (JSORRAT-II) (Epperson, Ralston, Fowers, DeWitt & Gore, 2006) was administered at admission and the average score was 5.0, which falls into the moderate level of juvenile sexual recidivism risk. The moderate risk range is for scores from four to seven. A second sample of adolescent males was from another group home also for the treatment of juveniles who sexually offend, but with youth with less severe challenges and history. Their average age was 17.2 and their average JSORRAT-II score at admission was 3.9. Based on the JSORRAT-II scores, the first residential program was described as the High level program, and the second program as the Medium level program. A third sample were not probation youth, and were a control sample from a private school and their average age was 15.5 years and had 53% males and 47% females, and none were in special education. Various issues regarding the characteristics of this instrument were examined using these samples which are discussed below.

### Interrater Reliability

Data from the first sample was used for assessing reliability. The average score of the 14 responses was used. Two raters who were trained by the author in the scoring, rated the PRO which was given at the beginning of the intervention. Lin's Concordance statistic was used, a measure of interrater reliability, and can be used with ordinal rating scales like the PRO. The Lin's Concordance statistic was .76 (one sided, 95% CI .50 to 0.89) (The National Institute of Water and Atmospheric Research, 2013). The Pearson correlation coefficient is .73 for this sample. This represents an adequate level of agreement. With this sample the differences in rating were discussed between the two raters and all discrepancies were resolved, and agreement was achieved on all responses. This suggested that additional refinement of the scoring system which examined why different ratings were given and then to provide clearer guidelines might lead to a higher levels of interrater reliability.

### Comparison of Samples and Age Effect

The scores of the three samples were compared, that is the high level program, the medium level program, and the private high school population. The PRO score with age as a covariate was used in a general linear model analysis (GLM) (Hintze, 2013). A test for normality was used for the PRO and the hypothesis that the data was normally distributed could not be rejected, and the GLM procedure was deemed appropriate since it assumes normality for the data. The analysis of variance is in Table 1.

**Table 1: GLM Analysis of Age and Samples Type Ordered**

**Analysis of Variance Table**



Source Term	DF	Sum of Squares	Mean Square	F Ratio	Prob Level	Power(Alpha=0.05)
X(Age)	1	0.4319296	0.4319296	4.81	0.031577*	0.580688
A: Samples Ordered	2	8.954385	4.477192	49.88	0.000000*	1.000000
S	70	6.282658	0.0897523			
Total (Adjusted)	73	15.34264				
Total	74					

\* Term significant at alpha = 0.05

A planned analysis with the GLM procedure using a linear trend comparing in rank order the private school, the medium level, and the high level program was done. The three samples were presumed to be different regarding a hypothetical underlying dimension regarding behavioral issues and prosocial reasoning which the PRO might measure. It was assumed that the samples regarding PRO scores would be ordered in the following way; the Private school population would be higher than the Medium level program, which in turn would be higher than the High level program. The comparison had a T Value=9.61 and  $P < 0.001$ . These results support the hypothesis that the three samples are different in an ordered linear fashion. The scores adjusted for age were 2.73 for the private school, 2.22 for the medium level, and 1.81. for the high level program. There was also a significant effect for age in the analysis of variance model shown in Table 1 indicating that older youth had higher scores. It supports the hypothesis for the PRO that older youth score higher than younger youth, controlling for the sample studied. The PRO is designed to be a developmental measure and older youth are hypothesized to score higher than younger youth.

## Treatment Effect

A treatment effect was examined in two ways using the PRO as the outcome measure. The first has been described previously (Ralph, 2015a). The first sample of 14 youth in a high level residential program were studied and the intervention used was ART. The PRO was used as a pretest and posttest. A nonparametric paired T-test, the Wilcoxon Test, was used as the statistical measure. The pretest mean was 1.74 and the posttest mean was 2.04. The z-score was 2.82 with  $p = 0.005$ . These findings allowed rejection of the null hypothesis that the intervention, ART, had no effect on an increase in the PRO. In addition, the WSCT was used and also showed an increase as a result of the ART intervention.

Another approach to examining whether the PRO was able to show a treatment effect was done with the medium level residential treatment program described above. Information from that sample was available regarding how long youth had been in treatment and their age. A robust regression procedure was done with the PRO as the dependent variable, and age and time in program as the covariates (Hintz, 2013). Age was used as a covariate since the PRO score is hypothesized to increase with age. The sample size was  $N = 30$  and the alpha level was .05 with a two-tailed test. The results are in Table 2. The null hypothesis could be rejected that there was no significant effect for time in treatment controlling for age. Youth had higher scores in this analysis the longer they were in treatment. Each year they were in treatment, the PRO score increased 0.065, and separately for each year of age the score increased 0.080. Both a treatment and age effect for the PRO were identified.

**Table 2: Robust Regression with Age and Length of Treatment (LOT)**

Regression Equation Section						
Independent	Regression	Standard	T Value	Prob	Decision	Power
Variable	Coefficient	Error	(H0: B=0)	Level	-5%	-5%
Intercept	14.57981	2.360353	6.177	0.000004	Reject H0	0.999955
Age	0.0815429	1.329201E 02	6.1347	0.000004	Reject H0	0.999947
LOT	3.464474E 04	5.74382E 05	6.0317	0.000006	Reject H0	0.999921
R Squared	0.848013					

\* Term significant at alpha = 0.05

## Gender Effects

The private school sample was analyzed to see if there were differences regarding males and females in PRO scores. The sample was 53% males and 47% females. A Mann-Whitney U test was used to compare PRO scores. The male mean score was 2.71 and the female mean score was 2.64, with a  $P = 0.602$ , and no significant difference. There was not a gender effect for the PRO in this sample.

## Criterion Validity

The relation of the PRO to other measures was assessed. The first sample with 14 youth from a high level residential program were used. The PRO on the pretest for that sample was compared to other measures. The Total Problems scale from the Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2001) and the Total Score from the Youth Outcomes Questionnaire (Y-OQ) (Burlingame, Wells, Cox & Lambert, 2004) were used and completed by residential staff rating the youth's behavior. The WSCT test and the Global Severity Index (GSI) from the Symptom Checklist 90-R (SCL 90-R) were completed by youth. The SCL 90-R which adolescent norms (Derogatis & Savitz, 2000). The JSORRAT-II was completed by program staff at admission based on rating of the patient's chart using past history which is appropriate for this instrument.

A robust regression technique using a two-tailed probability test (Hintze, 2013) was used since it has less restrictive requirements including less bias regarding outliers. Since the PRO is hypothesized to be a developmental measure which would increase by age, age was used as a covariate along with the other measures. The results are shown in Table 3. For each variable both the regression coefficient for the variable, and the coefficient for age were listed. Two measures, the GSI from the SCL 90-R and the JSORRAT-II showed significant findings for the regression coefficients. Youth with higher levels of PRO scores had lower levels of global distress as measured by the GSI and plausibly better coping strategies overall. Youth with higher levels of PRO scores had higher levels of the JSORRAT-II. Interpretation of this latter result is speculative but youth with higher JSORRAT-II scores might have had more severe consequences in the legal system and longer treatment which may have promoted prosocial development. The lack of significant correlation between the PRO and the WSCT may indicate that they measure different aspects of social reasoning and are not redundant.

**Table 3: Robust Regression with the PRO and Other Measures**

Independent Variable	Regression Coefficient b(i)	Standard Error Sb(i)	Standardized Coefficient	T-Statistic to Test H0: $\beta(i)=0$	Prob Level	Reject H0 at 5%?
Age	0.0961048	0.0365019	0.5673	2.633	0.0233	Yes
JSORRAT-II	0.0581457	0.0259023	0.4837	2.245	0.0463	Yes
Age	0.0876979	0.0516736	0.4586	1.697	0.1177	No
Y-OQ Total	0.0005661	0.0019063	0.0802	0.297	0.772	No
Age	0.1608178	0.0441348	0.5841	3.644	0.0039	Yes
SCL 90-R GSI	-0.0357873	0.0091738	-0.6253	-3.901	0.0025	Yes
Age	0.1054794	0.0521526	0.4896	2.023	0.0681	No
CBCL Total	0.0120411	0.0076725	0.3799	1.569	0.1449	No
Age	0.0962786	0.0554566	0.4543	1.736	0.1104	No
WSCT	-0.1027481	0.1449789	-0.1855	-0.709	0.4933	No

## Discussion

The present study describes the relevant research, development, and properties of a measure of prosocial reasoning for adolescents, the PRO. The study also examined the characteristic of the PRO with three adolescent samples. Measures of change in moral or prosocial reasoning have been used in juvenile probation populations as described above (Burnette, et al., 2003; Burnette, et al., 2004; Brugman & Bink, 2011) but a literature search using Google Scholar did not indicate similar studies with youth who sexually offend. The present study may be unique in this regard. The PRO is based on relevant adolescent developmental theory regarding prosocial development, but also is formulated from grounded theory and the actual responses of youth. The PRO also addresses the issue of face and ecological validity in that the instrument obtains samples of every day thinking regarding social dilemmas. Information from the three samples studied showed that the PRO had characteristics that would be expected in a developmental measure of prosocial reasoning. When other factors were controlled, older youth scored higher than younger youth. The PRO measured the positive effects of treatment in two different samples. The PRO also showed rank ordering of scores in the expected direction between a private high school sample, and also a medium, and a high level program for youth who sexually offended. The measure also had adequate interrater reliability. It showed discriminant validity on the GSI from the SCL 90-R, in that higher levels of the PRO are related to lower levels of the GSI score. Males and females didn't show significant differences on the PRO in the private high school sample.

The present study, and research discussed in three companion publications (Ralph, 2012; Ralph, 2015a; Ralph, 2015b) document the utility of the importance of assessing moral and prosocial reasoning, not only for the general probation population, but specifically for youth who sexually offend. The PRO along with the WSCT and Roberts 2 gives practical tools for assessing initial levels of prosocial reasoning and changes as a result of treatment. The PRO appears to have characteristics consistent with ecological validity since it was developed from samples of youth reasoning about everyday dilemmas. It is close to the practical work of doing counseling probation

youth regarding coping in daily life. Using measures of prosocial reasoning like the PRO also helps frame the counseling relationship as promoting higher levels of prosocial coping consistent with theories of adolescent development.

Influential articles such as Worling, Litteljohn, and Bookalam (2010), and Borduin, Schaeffer, and Heiblum (2009), describe the characteristics of effective interventions for reducing recidivism in JSO youth. However, they don't identify what type of personality or similar changes occurred in the youth, such as an increase in prosocial reasoning that would lead to reduced recidivism. A better understanding of the personality changes and mechanisms effecting remediation would help clinicians working with the youth to better understand how the interventions actually work and guide clinical practice. Likewise, a better understanding of the mechanisms of change might plausibly lead to more effective, less expensive, and more easily implemented interventions.

Caldwell (2016) using available data, reports a decline in recidivism in juveniles who sexually offend. He notes in the abstract, "Studies conducted between 2000 and 2015 reported a weighted mean sexual recidivism rate of 2.75%; 73% lower than the rate of 10.30% reported by studies conducted between 1980 and 1995." He notes that this has implications for assessment and treatment. If sexual recidivism is on average 2.75%, in the future can we expect to evaluate program effectiveness based on a reduction from that figure to 1%? Not only nonsexual recidivism, which is significantly higher than sexual recidivism in these youth might be used as outcome measures, but also variables like the PRO, and other measures discussed in this article that measure psychiatric symptoms or ego level.

The present study has several limitations but also strengths. The PRO measure is still in development. The population studied were from small convenience samples. A replication of the findings with larger and more representative populations, including normative groups, as well as youth on probation would be essential to establish the robustness of the findings and utility of this instrument. Also the interrater reliability, while adequate, might benefit from improved methods and training of raters. It should also be noted that other factors in addition to prosocial reasoning play a role in delinquent behavior such as familial and parenting issues, local neighborhood and environmental effects, peer group influences, poverty, ethnicity, and psychiatric, neuropsychological, and violence trauma factors.

The characteristics of the PRO regarding age, treatment effects, its ability to show differences among samples (e.g., high, medium, and private high school), and correlation with other instruments is of note. Also the PRO's model of viewing offending behaviors as in part related to challenges in prosocial reasoning is not widely used at present. Research indicates that it is an effective approach with probation youth generally and also the subset who sexually offend. Having practical measures of prosocial development such as the PRO can be helpful both to the clinician doing counseling with these youth, and also evaluating the effectiveness of prosocial interventions for this population.

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