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MENTORING TO IMPROVE A CHILD'S SELF-CONCEPT: LONGITUDINAL EFFECTS OF SOCIAL INTERVENTION ON IDENTITY AND NEGATIVE OUTCOMES

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ABSTRACT

Using panel data gathered from 173 children in the Big Brothers Big Sisters mentoring program the major developmental assumptions of Identity Theory were tested. A child's self-reported categorization of their mentee identity was used to predict involvement in delinquent behavior, feelings of sadness, and low self-efficacy. Across three waves of panel data, this study found that social intervention improves a child's self-concept. However, results also find that improvements in self-concept are not simply positive for all groups of children receiving mentoring services. Exogenous variables such as age, race, and sex impact the amount of influence mentoring has on a child's self-concept; varied influence impacts the efficacy of social intervention to mitigate the outcomes measured.

INTRODUCTION

The social intervention program, Big Brothers Big Sisters (BBBS), has routinely argued that one-on-one community based mentoring improves a child's self-concept (Turner and Scherman 1996). However, studies testing this claim have not found "…statistically significant improvements in self-concept…" as a result of a child's involvement with BBBS (Grossman and Tierney 1998; Tierney, Grossman and Resch 2000:3).

Over the last decade, BBBS has shifted measurement strategies. The program currently emphasizes positive changes in a child's "confidence" or "socio-emotional competency." This change in emphases is noteworthy because it reflects an implicit deficit in the programs ability to measure changes in self-concept with the measurement strategies that had been utilized (cf. BBBSA 2012; Valentino and Wheeler 2013). Despite this fact, BBBS continues to report positive program impact expressed as improved self-concept (BBBS uses the term "Little" to describe the name of the mentee role, i.e., Little Sister or Little Brother and the term "Big" to name the mentor role):

> *Our impact on a child's **self-confidence and emotional well-being** is felt long after Littles graduate from high school. In 2009, Harris Interactive conducted an online survey of alumni Littles from across the nation. Among those former Littles: 90% agreed their*

*Big made them **feel better about themselves**." (BBBS.org Website emphasis in original, BBBSA 2013)*

Positive changes related to elements of a child's self-concept continue to be emphasized because an "improved" self-concept has the potential to influence a child beyond social intervention. The hope is that mentoring provides a child with a sense of self defined by pro-social attitudes and behaviors, reducing the likelihood for anti-social outcomes after social intervention ends and across the life-course. However, empirical evidence supporting a causal linkage between mentoring, a child's self-concept, and measurable outcomes is lacking (Grossman 2009:4).

A Theory of the Self-Concept

What is the self-concept? The sociological ideas forming the Symbolic Interaction (SI) framework argue that the self emerges through interaction with the socially defined world. The social world precedes mind and self and largely determines who people become and how they behave (see Mead 1934:253-260).

Shared symbolic meaning creates a collective understanding of norms, values, and expectations, forming social structures. Social structures arise from symbolic inter*action* within networks of roles; roles and role-positions have meaning based on shared symbolic understanding. Social structures can change at the macro level; just as people are subject to change at the micro self-concept level, but the size of social structures and shared symbolic understanding dictates that change moves slowly across societies and persons (see Klimstra et al. 2010; Specht, Egloff and Schmukle 2011 for more on this point). It also follows that the aggregate structure of meanings leads people "…to be with the same or only slowly changing casts of others who do essentially the same things on a repetitive basis in groups or [role] networks" (Stryker 2007:1084).

In sum, social structure is comprised of two things 1) symbolic understanding and 2) a network of people occupying roles organized by symbolic understanding. People are not randomly distributed across the life-course but rather are, "channeled through the social structures that underlie social life" (Stryker 2007:1086) and this "channeling" influences the human condition down to the micro individual level shaping the emergence of self with its influence on individual behaviors (for more see Ashmore and Jussim 1997; Phoenix and Rattansi 2005).

Identity Theory

Identity Theory (Stryker 1980) focuses on the linkage between social structures and the self, and how this linkage acts as a mechanism for behavior (Burke and Stets 2009). Identities grow out of the idiosyncratic qualities of the person as well as interactions between the person and the symbolically understood world. *Identities are organized internalized meanings persons have of themselves, developed through symbolic interaction, which serves to locate the person in the socially structured world.*

Identity Theory has been operationalized around four main processes (Stets and Burke 2014). First, role identity commitment. Role-positions represent the smallest conceivable unit of macro social structures. As people take on different roles they become more or less committed to the identities that arise from the role-position (Burke and Reitzes 1981). Second, identity salience. Identities get ranked in a hierarchy. Identities at or near the top of the hierarchal structure are more likely to be enacted in a given situation (Callero 1985). Third, identity importance (McCall

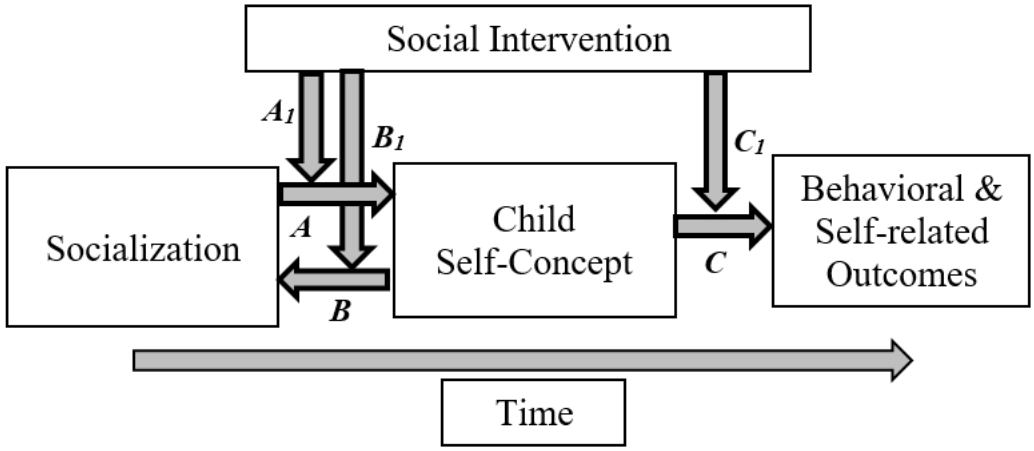
and Simmons 1966), also called psychological centrality (Brenner, Serpe and Stryker 2013; Morris 2013), which is "the significance of a particular component [identity and] its location in the self-concept structure—whether it is central or peripheral, cardinal or secondary, a major or minor part of the self" (Rosenberg 1979:18). Fourth, is behavior relating to the identity (Merolla et al. 2012). Figure 1 visualizes the elements of Identity Theory examined in this study.

Figure 1. The Processes of Identity Theory

The ability of BBBS to successfully help a child rests on the Little role-identity becoming a defining part of the child's self-concept; and because identities get shaped by social structures that are often in competition, the influence of the Little identity is relative to the level of commitment, importance, and salience of the Little identity within the self-concept (Gecas, Thomas and Weigert 1973; Thoits 1995) [1]. For example, if parents and/or peers engage in techniques of neutralization to minimize deviant behavior arguing that deviance "isn't that big-a-deal" (see Sykes and Matza 1957) and if the family/friend identity is more important and salient it is unlikely that the Little role-identity will mitigate deviant behaviors.

Figure 2 is a conceptual diagram of the hypothesized social psychological relationships. There is a dynamic relationship going on between a child's self-concept and socialization processes sustained by their position within the immediate social structure, represented by paths A and B.

Figure 2. Hypothesized Model of Social Intervention



Social intervention introduces a novel source of pro-social meanings and expectations through a vetted mentor, paths A_1 and B_1. The assumption is that as the influence of the Little identity increases, negative outcomes will decrease. Based on the structure of the current research project, a child's self-concept was measured by taking measures prior to treatment, after 6-months of social intervention, and at a child's 1-year anniversary of mentoring. The question under investigation asks if the influence of the Little identity, path C_1, impacts self-reported negative outcomes, path C?

DATA AND METHODS

Data analyzed are primary data gathered from 173 children in the BBBS mentoring program in Central Indiana. Panel data were collected in three waves (i.e., T1 = Baseline collected prior to treatment, T2 = 6-months of social intervention, and T3 = 1-year of social intervention).

Three variables were modeled as outcomes. First, based on the BBBS mandate to serve children at-risk for involvement with the criminal justice system (see BBBSA 2011), a four item scale of criminal behavior was analyzed. The first item asked the frequency children had stolen things (confirmatory factor analysis CFA loading .744), done things against the law (CFA .796), been stopped and questioned by the police (CFA .816), and been arrested (CFA .909). All items were coded 1-8 with 1 = Never and 8 = Every Day. Component analysis of the deviant behavior items in the BBBS data returned a KMO Bartlett statistic of .763 (p = .001) and a Cronbach's alpha of .876. The deviant behavior items factored very well as a scaled measure for deviant behavior.

Second, based on research demonstrating a linkage between sadness and negative outcomes including increased delinquency (cf. Allwood et al. 2012; Kerig et al. 2012) this study modeled *Sadness* as a dependent variable. The measure for *Sadness* came from a child's response to the following statement: *I sometimes feel very sad and feel like I can't do anything about it*.

Third, research shows that a person's self-efficacy beliefs can shape behavior more than past performance (see Aronson, Blanton and Cooper 1995; Gecas 1989); based on this, a child's perceptions of negative self-efficacy were modeled as a dependent variable. *Negative Self-Efficacy* came from a child's response to the following statement: *I sometimes feel like I am being pushed around in life; like no matter how hard I try I just can't do things I try to do*. Both the *Sadness* and *Negative Self-Efficacy* items were coded as a frequency ranging from 1-8 with 1 = Never and 8 = Every Day. Positive results indicate an increase in the frequency of each dependent variable [2]. Means and standard deviations (SD in parenthesis) for the three dependent variables are presented in Table 1.

Measures of identity came from a scale designed to examine the relative commitment, importance, and salience of five common role-identities children in BBBS occupy. The following instruction was given to each child prior to the questions:

> *"We are going to ask you to RANK different things that you are, like a Little or a Friend. Think about each of the following things that you are (a son/daughter, a friend, a student in school, a Little, daugher/son to your arrested parent__**if you have arrested parent,*** rank 1-4 if not**."*
>
> *1 - Which one is the most important to you?*
>
> *2 - Which of these do you think should deserve most of your time?*
>
> *3 - If you had to stop being these things, which would you give up*

The first question was used as a measure of importance, the second was used as a measure of salience, and the third was used as a measure of commitment. Since the items were scaled in relative terms to the other role-identities, values were treated as continuous. Higher values represent greater role-identity commitment, importance, and salience.

Table 1. Means and Standard Deviations of Imputed Dependent Variables for each Panel

Variable Name	Baseline – Exogenous	6 Months – Endogenous	1 Year – Endogenous
Delinquency	5.07 (1.94)	4.38 (4.05)	4.93 (5.26)
Sadness	3.80 (2.47)	3.39 (2.90)	4.48 (2.63)
Negative Self-Efficacy	3.23 (2.50)	3.17 (2.37)	3.41 (2.64)
N	7680	7680	7680

Control variables were limited to items that had theoretical meaning to the model under investigation in Figure 2. Controls included Age, a continuous variable of actual age, with BBBS ages ranging from 8-17 (Farrington 1986), Sex coded 0 = Male and 1 =Female (Lauritsen, Heimer and Lynch 2009), and Race coded 0 = White, 1 = Black, and 2 = Other/Multi-racial (Western 2006). Each of these variables has been shown to relate to the outcomes measured. See the appendix for additional details.

RESULTS

Table 2 displays the results of the analysis of commitment on delinquency, sadness, and negative self-efficacy. In all models the label *1 Year = 0* indicates a constrained model with the endogenous identity measure at 1-year constrained to have no effect on the exogenous variable at 1-year. The *Commitment & Delinquency* model fit the data very well, with a RMSEA of .032 and a lower boundary of the two-sided 90% confidence interval of .029 and an upper boundary of .036, the *p* value was equal to .001. GFI was .998, IFI was .994, and NFI was .993 with an AIC of 336.224.

Commitment & Delinquency

The model for *Commitment & Delinquency* found that older children reported less deviant behavior (-.090, $p = .001$). At the one-year anniversary the total effect of *Age* on deviant behavior continued to be negative, as *Age* increased delinquency decreased (-.072). The total effect of *Age* on commitment found that as age increased so did commitment to the Little role-identity (.049).

After six months of social intervention girls reported less deviant behavior than boys (-.064, $p = .001$) and were also less committed to the Little role-identity than boys (-.041, $p = .001$). However, at one year of social intervention girls were more committed to the Little role-identity than boys (.017). The total effect of sex after a full year of social intervention found that girls reported less deviant behavior than boys (-.049).

Race was a significant predictor of deviant behavior at 6-months of social intervention. As the categorical value for race increased, deviant behavior increased (.115, $p = .001$). The total effect of race on deviant behavior at 1-year was also positive (.102), minority children reported more deviant behavior than whites.

Table 2. Standardized Parameter Estimates of Fixed Effects for the *Commitment* Structural Equation Model

			Commitment & Delinquency		Commitment & Sadness		Commitment & Negative Self-Efficacy	
			Beta (Std. Error)		Beta (Std. Error)		Beta (Std. Error)	
6 Months								
Outcome 6 Months	←	Age	-.090*** (.017)		.012*(.007)		-.050*** (.007)	
Commitment 6 Months	←	Age	-.025*** (.004)					
Outcome 6 Months	←	Gender	-.064*** (.065)		.161*** (.050)		-.068*** (.045)	
Commitment 6 Months	←	Gender	-.041*** (.017)		.044** (.039)		-.106*** (.030)	
Outcome 6 Months	←	Race	.115*** (.053)		.127*** (.059)		.103*** (.040)	
Commitment 6 Months	←	Race			.117*** (.046)		.105*** (.026)	
Outcome 6 Months	←	Outcome Baseline	-.099*** (.015)		.086*** (.009)		.266*** (.008)	
Commitment 6 Months	←	Commitment Baseline	-.103*** (.007)		-.093*** (.008)		-.089*** (.007)	
Commitment 6 Months	←	Outcome 6 Months	-.364*** (.002)		-1.150*** (.053)		-.513*** (.022)	
1 Year								
Commitment 1 Year	←	Commitment 6 Months	-.794*** (.023)		-.745*** (.079)		-.450*** (.081)	
Outcome 1 Year	←	Commitment 6 Months	-.304*** (.029)		-.308*** (.081)		-.383*** (.081)	
Commitment 1 Year	←	Outcome 6 Months	-.599*** (.003)		-.612*** (.039)		-.411*** (.025)	
Outcome 1 Year	←	Outcome 6 Months	.778*** (.005)		.355*** (.040)		.111*** (.033)	
Outcome 1 Year	←	Commitment 1 Year			-.326*** (.094)		.038*** (.020)	
			Free	1 Year = 0	Free	1 Year = 0	Free	1 Year = 0
		RMSEA (PCLOSE)	.036 (1.00)	**.032 (1.00)**	**.026 (1.00)**	.028 (1.00)	**.030 (1.00)**	.030 (1.00)
		GFI	.998	**.998**	**.999**	.998	**.998**	.998
		IFI	.993	**.994**	**.993**	.991	**.981**	.979
		NFI	.993	**.993**	**.993**	.990	**.980**	.978
		AIC	343.063	**336.224**	**225.966**	265.669	**299.142**	319.954
		Model difference statistically significant	HØ	***p* = .001**	**HØ**	*p* = .001	**HØ**	*p* = .001

Statistical Legend: Beta = Regression Weight | RMSEA = Root Mean Square Error of Approximation | GFI = Goodness-of-fit Index | IFI = Incremental Fit Index | NFI = Normed Fit Index | AIC = Akaike's Information Criteria | HØ = Default Model

MI *N* = 7680 | † *P* ≤ .10 | * *P* ≤ .05 | ** *P* ≤ .01 | *** *P* ≤ .001

At 6-months of social intervention, when a child's involvement in deviant behavior went up by one standard deviation their commitment to the Little identity went down (-.364, $p = .001$). Results also found that a child's self-reported commitment to the Little role-identity at the 1-year anniversary was not a significant predictor of their deviant behavior at 1-year. Despite this, as a child's commitment to the Little role-identity increased at 6-months their involvement in delinquency at 1-year of social intervention decreased (-.304, $p = .001$). In sum, over time, as a child's commitment to the Little identity increased their deviant behaviors decreased.

The autoregressive effects of delinquency reversed from baseline to 6-months (-.099, $p = .001$) and from 6-months to 1-year of social intervention (.778, $p = .001$). From the baseline measurement the lagged effect of delinquency at 6-months is quite small and negative, whereas the effect becomes positive at 6-months. Engaging in deviant behavior at 6-months of social intervention is a strong predictor of delinquency at 1-year.

Commitment & Sadness

At the conclusion of a full year of social intervention older children and girls experienced more sadness but were also more committed to the Little role-identity than boys and younger children. Children from black or other racial groups reported more sadness at the 1-year anniversary and were less committed to the Little role-identity when compared to white children. Finally, at 1-year of social intervention children who were more committed to the Little role-identity experienced less sadness.

Commitment & Negative Self-Efficacy

This model found that at the conclusion of a full year of social intervention younger children and boys felt more pushed around in life and were also less committed to the Little role-identity than girls and older children generally. Children from black or other racial groups had lower self-efficacy beliefs at the 1-year anniversary and were less committed to the Little role-identity when compared to white children. Surprisingly, at 1-year of social intervention children who were more committed to the Little role-identity had a lower sense of self-efficacy.

Importance & Delinquency

Table 3 displays the results of the analysis of importance on delinquency, sadness, and negative self-efficacy. At the conclusion of a full year of social intervention older children and boys considered their Little role-identity more important to their self-concept relative to competing identities when compared to younger children and girls in general. Younger children were also more involved in deviant behavior. The findings for black or other racial groups were consistent with the commitment model findings showing that minority children had more involvement in deviant behavior when compared to white children and also considered the Little identity less important to their self-concept relative to competing identities. Across all panels, the association between the importance of the Little role-identity and deviant behavior was the same: as importance of the Little role-identity increased delinquency decreased.

Importance & Sadness

Model results for *Importance & Sadness* were similar to the results reported for *Commitment & Sadness*, but reflect the difference that boys ranked the importance of the Little as more

Table 3. Standardized Parameter Estimates of Fixed Effects *Importance* Structural Equation Model

			Importance & Delinquency		Importance & Sadness		Importance & Negative Self-Efficacy	
			Beta (Std. Error)		Beta (Std. Error)		Beta (Std. Error)	
6 Months								
Outcome 6 Months	←	Age	-.101*** (.017)				-.085*** (.007)	
Importance 6 Months	←	Age			.094*** (.007)			
Outcome 6 Months	←	Gender	-.063*** (.065)		.205*** (.049)		-.077*** (.032)	
Importance 6 Months	←	Gender	.055*** (.017)		.068*** (.022)		.028*** (.015)	
Outcome 6 Months	←	Race	.132*** (.054)		.190*** (.034)		.116*** (.026)	
Importance 6 Months	←	Race	-.053*** (.014)		-.046*** (.015)		-.018** (.012)	
Outcome 6 Months	←	Outcome Baseline	-.097*** (.015)		.101*** (.008)		.215*** (.006)	
Importance 6 Months	←	Importance Baseline	-.069*** (.007)		-.030*** (.008)		-.021*** (.006)	
Importance 6 Months	←	Outcome 6 Months	-.371*** (.003)		-.258*** (.013)		-.713*** (.006)	
1 Year								
Importance 1 Year	←	Importance 6 Months	-.829*** (.046)		-.201** (.071)		-.832*** (.019)	
Outcome 1 Year	←	Importance 6 Months	-.110*** (.053)		-.245*** (.069)		-.360*** (.024)	
Importance 1 Year	←	Outcome 6 Months	-.371*** (.005)		-.210*** (.016)		-.621*** (.007)	
Outcome 1 Year	←	Outcome 6 Months	.802*** (.007)		.563*** (.017)			
Outcome 1 Year	←	Importance 1 Year	-.065*** (.040)		-.107*** (.025)		-.180*** (.021)	
			Free	1 Year = 0	**Free**	1 Year = 0	**Free**	1 Year = 0
		RMSEA (PCLOSE)	**.028 (1.00)**	.048 (.792)	**.047 (.887)**	.052 (.249)	**.028 (1.00)**	.048 (.752)
		GFI	**.999**	.996	**.996**	.995	**.999**	.996
		IFI	**.997**	.989	**.982**	.975	**.987**	.956
		NFI	**.997**	.989	**.982**	.976	**.986**	.955
		AIC	**216.213**	483.595	**468.180**	597.008	**232.230**	537.942
		Model difference statistically significant	**HØ**	$p = .001$	**HØ**	$p = .001$	**HØ**	$p = .001$

Statistical Legend: Beta = Regression Weight | RMSEA = Root Mean Square Error of Approximation | GFI = Goodness-of-fit Index | IFI = Incremental Fit Index | NFI = Normed Fit Index | AIC = Akaike's Information Criteria | HØ = Default Model

MI $N = 7680$| † $P \leq .10$ | * $P \leq .05$ | ** $P \leq .01$ | *** $P \leq .001$

important to their self-concept compared to girls. Results found that at the conclusion of a full year of social intervention girls experienced more sadness compared to boys. The total effect of *Sex* at 1-year of social intervention also found that boys considered the Little role-identity as more important to their self-concept compared to girls. Children from black or other racial groups also reported more sadness at the 1-year anniversary and less importance of the Little role-identity when compared to white children. Finally, across all panels children who felt that the Little role-identity was more important to their self-concept experienced less sadness.

Importance & Negative Self-Efficacy

Results of this model mirror those found for *Commitment & Negative Self-Efficacy*. At the conclusion of a full year of social intervention younger children and boys felt more pushed around in life. However, the flipped self-concept finding held: boys considered the Little role-identity more important to their sense of self compared to girls; and, older children continued to consider the Little role-identity as more important compared to younger children. Children from black or other racial groups had lower self-efficacy beliefs at the 1-year anniversary and considered the Little role-identity as less important when compared to white children. Children who considered the Little role-identity as more important experienced higher self-efficacy.

Salience & Delinquency

Table 4 displays the direct effect results and model fit statistics of the salience models. After a full year of social intervention younger children and boys experienced their Little role-identity as more salient when compared to older children and girls. At 6-months of social intervention minority racial groups experienced less salience of the Little role-identity compared to white children. However, at 1-year of social intervention these children that their Little identity was more salient compared to white children. Minority children reported more deviant behavior when compared to white children. Past deviant behavior was also a predictor of future delinquency. Finally, as the salience of the Little identity increased delinquency decreased.

Salience & Sadness

At the conclusion of a full year of social intervention girls experienced more sadness compared to boys. The total effect of *Sex* at 1-year of social intervention also found that boys considered the Little role-identity as more salient to their self-concept compared to girls. Again, this is an interesting difference from the *Commitment & Sadness* model. In terms of *Salience*, black or other racial groups reported more sadness and considered the Little role-identity less salient across data panels when compared to white children. Finally, across all data panels children who felt that the Little role-identity was more salient to their self-concept experienced less sadness.

Salience & Negative Self-Efficacy

At the conclusion of a full year of social intervention younger children and boys felt more pushed around in life. Boys also considered the Little role-identity more salient to their sense of self at 1-year of social intervention compared to girls. At 6-months of social intervention as age increased so did the salience of the Little identity, however at 1-year of social intervention as age increased the salience of the Little identity decreased. Children from black or other racial groups had lower self-efficacy beliefs at the 1-year anniversary and were less committed to the Little role-identity when compared to white children. Children who considered the Little role-identity as more important relative to competing identities also experienced higher self-efficacy.

Table 4. Standardized Parameter Estimates of Fixed Effects *Salience* Structural Equation Model

			Salience & Delinquency		Salience & Sadness		Salience & Negative Self-Efficacy	
			Beta (Std. Error)		Beta (Std. Error)		Beta (Std. Error)	
6 Months								
Outcome 6 Months	←	Age	-.101*** (.016)				-.045*** (.009)	
Salience 6 Months	←	Age	.042*** (.004)		.089*** (.004)		.096*** (.004)	
Outcome 6 Months	←	Gender	-.058*** (.060)		.197*** (.038)		-.097*** (.034)	
Salience 6 Months	←	Gender	.070*** (.016)		.084*** (.017)		.089*** (.018)	
Outcome 6 Months	←	Race	.115*** (.052)		.179*** (.031)		.105*** (.027)	
Salience 6 Months	←	Race	-.041*** (.013)		-.017* (.014)		-.053*** (.013)	
Outcome 6 Months	←	Outcome Baseline	-.068*** (.014)		.117*** (.007)		.271*** (.006)	
Salience 6 Months	←	Salience Baseline	.046*** (.007)		.063*** (.007)		.056*** (.007)	
Salience 6 Months	←	Outcome 6 Months	-.479*** (.002)		-.205*** (.003)		-.143*** (.004)	
1 Year								
Salience 1 Year	←	Salience 6 Months	-.353*** (.030)				-.072*** (.021)	
Outcome 1 Year	←	Salience 6 Months			-.271*** (.014)		-.146*** (.026)	
Salience 1 Year	←	Outcome 6 Months	.070*** (.004)		-.210*** (.004)			
Outcome 1 Year	←	Outcome 6 Months	.667*** (.029)		.544*** (.005)		.261*** (.007)	
Outcome 1 Year	←	Salience 1 Year	-.036*** (.025)		-.098*** (.013)		-.371*** (.016)	
			Free	1 Year = 0	**Free**	1 Year = 0	**Free**	1 Year = 0
		RMSEA (PCLOSE)	**.034 (1.00)**	.048 (1.00)	**.034 (1.00)**	.047 (.881)	**.029 (1.00)**	.092 (.000)
		GFI	**.998**	.996	**.998**	.995	**.998**	.982
		IFI	**.995**	.989	**.989**	.977	**.988**	.874
		NFI	**.996**	.989	**.989**	.976	**.988**	.873
		AIC	**291.649**	483.595	**333.075**	613.557	**280.286**	2022.927
		Model difference statistically significant	**HØ**	p = .001	**HØ**	p = .001	**HØ**	p = .001

Statistical Legend: Beta = Regression Weight | RMSEA = Root Mean Square Error of Approximation | GFI = Goodness-of-fit Index | IFI = Incremental Fit Index | NFI = Normed Fit Index | AIC = Akaike's Information Criteria | HØ = Default Model

MI N = 7680| † $P \leq .10$ | * $P \leq .05$ | ** $P \leq .01$ | *** $P \leq .001$

DISCUSSION

The hypothesized relationships under investigation are framed by BBBS program goals assuming that mentoring introduces a child to pro-social meanings and expectations; these experiences are assumed to be a positive influence on a child's emergent self-concept thereby reducing negative outcomes. Findings do show that mentoring impacts a child's self-concept, and that generally speaking, the effects work in the expected direction. However, the results of this study also suggest that things are not as simple as the outcomes related to socio-emotional competencies suggested in recent BBBS publications.

Findings suggest a complex relationship between social intervention, the self-concept, and the negative outcomes measured. For example, girls in this study reported higher role-identity commitment compared to boys, but the boys reported that their Little role-identity deserved more of their time (i.e., salience). This finding supports previous research finding that the processes of commitment, importance, and salience are distinct and have varied influence on individual attitudes and behaviors (Stryker and Serpe 1994).

Further, race influenced the ability of mentoring to impact a child's self-concept. At the 1-year anniversary, children from black and other racial groups were less committed, considered the Little identity as less important, and also less salient to their self-concept compared to white children. This result suggests that for minority children, BBBS is less able to influence a child's internalization of the Little identity. Age, Race, and Sex all had differing and significant effects on how social intervention worked. Findings indicate that blanket statements about improved self-concept as a result of social intervention should be considered with caution. The complexity of the self-processes involved suggests that positive outcomes are possible, but not simple and unidirectional. Does a child's self-concept improve as a result of mentoring and does this impact behavior, yes; but, not in the same way for all groups of children in the program. For lasting impact, the unique needs of different populations of at-risk children should be carefully considered, with programs being adapted to meet those unique needs. In theoretical terms, this study supports the structural tradition of SI, evidenced by the competing influences of various identities the different groups of children occupied. A final thought: given competing influences on a child's development, a "one size fits all" approach to social intervention seems inadvisable.

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ENDNOTES

[1] A fourth element is emotion. Affect is certainly a part of what determines commitment to a role-identity, as well as its importance and salience. However, measuring the emotional component of these processes was beyond the scope of the current study.

[2] This may seem counterintuitive to the normal use of self-efficacy, but the item measuring self-efficacy was worded to capture a child's sense of being pushed around in life. As Bandura and Locke (2003) note, "The removal of a negative is not the same as the attainment of a positive" (for more on negative self-efficacy see Rudy et al. 2013). This scaling strategy also facilitated consistent interpretation of parameter estimates; an increase for any dependent variable represents a negative outcome for a child.

APPENDIX: ADDITIONAL METHODOLOGICAL AND ANALYTIC DETAILS

Data analysis began by addressing study attrition and missing data using multiple imputation (MI) procedures. MI results provide more accurate parameter estimation than post-hoc solutions

(Schafer & Graham, 2002). The number of MI, or *m*, was based on Bodner's (2008) formula for calculating the amount of imputation necessary to achieve efficient and reliable parameter estimates using a model based Monte Carlo Bayesian MI (see also Rubin 1987). Table A shows pre-imputation descriptives; and, Table B provides post-imputation bivariate correlations.

Table A. Means and Standard Deviations of Independent Variables Pre-Imputation

Variable Name	BBBS Children
	$\bar{x}$ (SD)
Time Invariant Variables	
Sex	
Female	.55
Male	.45
Race	
Black	.52
White	.36
Other	.13
Time Variant Variables	
Age (at baseline)	12.41 (2.08)
Commitment Baseline	2.29 (.983)
Commitment 6-months	2.52 (.750)
Commitment 1-year	2.95 (1.071)
Importance Baseline	3.10 (.968)
Importance 6-months	2.81 (.750)
Importance 1-year	3.00 (1.095)
Salience Baseline	2.84 (1.121)
Salience 6-months	2.95 (.669)
Salience 1-year	3.29 (1.007)
N	173

N = 173 baseline, pre-imputation

Both endogenous and exogenous variables were treated as continuous during modeling, and due to scaling and data imputation normality was achieved for all variables. Relationships between measured items were analyzed using simultaneous equations from the structural equation modeling (SEM) framework with child-level fixed effects. To adjust for the nesting of repeated observations within individuals over time a fixed-effects SEM adjusts standard error estimates upward. A cross-lagged fixed-effects model was used to correct for all unmeasured latent time-invariant variables that potentially influence modeled outcomes (Allison 2009; Frees 2004).

The cyclical relationships between the outcome variables of delinquency, sadness, and negative self-efficacy with the identity measures necessitates a more complex model specification than a single-outcome regression model would allow. The fixed-effects SEM (or FEM) proposed by Bollen and Brand (2010) was utilized for analysis based on the longitudinal research design. A FEM makes it possible to address the causal arguments of the research questions and is a superior alternative to more widely used multilevel regression approaches by allowing for simultaneous equations using path analyses with direct and indirect effects as well as omnibus model fit statistics to compare nested models (Allison 2009; Raudenbush and Bryk 2002). For clarity and table readability only direct effects get presented. Indirect and total effects are provided in the manuscript narrative and are also available as output upon request.

Table B. Bivariate Correlations of Imputed Variables

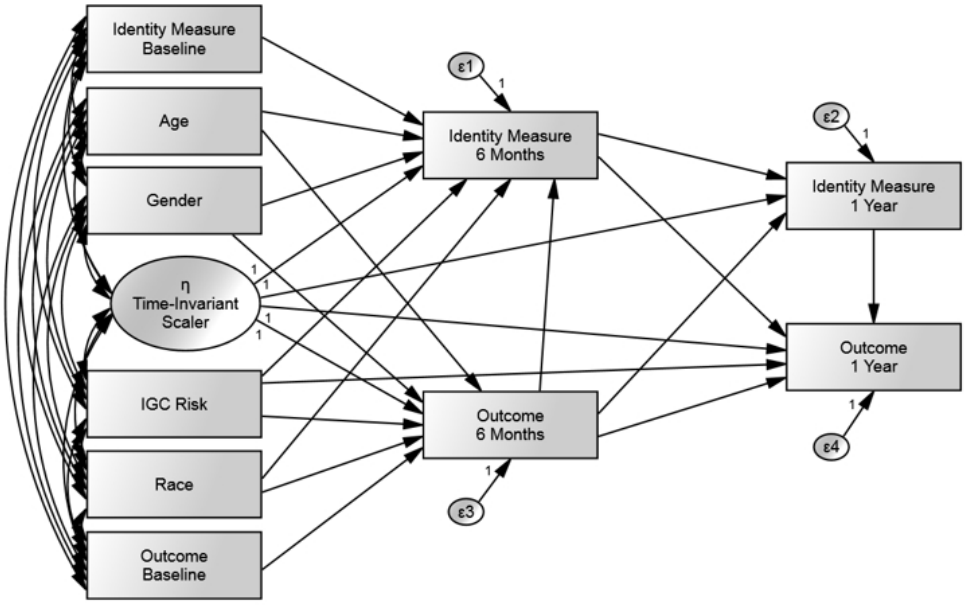
	AGE	SEX	RACE	EFF1	EFF2	EFF3	IMP1	IMP2	IMP3	SAD1	SAD2	SAD3	COM1	COM2	COM3	SAL1	SAL2	SAL3	DEL1	DEL2	DEL3
AGE	1																				
SEX	.063	1																			
RACE	.195	-.214	1																		
EFF1	.186	-.053	.118	1																	
EFF2	-.019	-.265	-.029	.167	1																
EFF3	-.125	.078	-.269	.064	.286	1															
IMP1	.466*	.033	.279	-.248	-.087	-.051	1														
IMP2	.162	.432*	-.118	.407*	.055	-.007	.231	1													
IMP3	.408*	-.031	-.005	-.195	-.090	-.113	.433*	.136	1												
SAD1	-.060	-.112	-.068	.582**	.154	.089	-.413*	.193	-.136	1											
SAD2	-.001	.209	-.153	-.074	.382*	.417*	-.207	.036	.034	-.066	1										
SAD3	-.120	.298	-.373	-.135	.113	.469*	-.328	-.194	-.100	-.110	.634**	1									
COM1	-.292	-.048	.158	.242	.216	-.044	-.382*	.074	-.157	.032	.113	-.112	1								
COM2	-.009	-.298	.159	-.138	.115	-.208	-.094	-.531**	-.301	-.251	-.210	-.081	-.163	1							
COM3	-.126	-.169	.079	.238	-.086	-.074	-.232	-.135	-.353	.024	-.081	-.045	.462*	.130	1						
SAL1	.242	-.018	-.093	-.188	.187	.268	.369	.006	.141	.003	.086	.120	-.486**	-.090	-.422*	1					
SAL2	.203	.384*	-.005	.059	-.216	-.066	.331	.601**	.308	.065	.052	-.012	-.270	-.518**	-.281	.048	1				
SALI3	.126	-.022	.076	-.078	.059	-.115	.209	.083	.477*	-.068	.036	.084	-.383*	-.143	-.437*	-.025	.459*	1			
DEL1	-.083	-.162	-.286	.146	.120	-.229	-.278	.124	.050	.030	.015	.007	.276	.096	.292	-.283	-.265	-.236	1		
DEL2	-.097	-.320	.486**	-.078	.241	-.283	.266	-.095	-.017	-.099	-.073	-.268	-.137	.233	.086	.012	.047	.405*	-.195	1	
DEL3	.036	-.242	.149	.259	.122	.179	.192	.070	.020	.312	-.023	-.114	-.129	-.201	.048	.008	.174	.186	-.188	.354	1

N = 7680 | *. Correlation is significant at the 0.05 level (2-tailed). | **. Correlation is significant at the 0.01 level (2-tailed).

Figure 3 displays the theoretical model tested.

> "The η_i is a scalar of all other latent time-invariant variables that influence y_{it}; and λ_t is the coefficient of the latent time-invariant variable (η_i) at time t; and at least one of these λ t is set to one to provide the units in which the latent variable is measured (e.g., set λ 1 = 1)." (Bollen and Brand 2010:4)

Figure 3. Cross-Lagged Longitudinal Structural Equation Model of Controls, Self-Concept, and Outcome Fixed-Effects*



* For clarity, the model displayed is the most parsimonious theoretical model. Covariances among the endogenous variables' error terms both across waves and for the two measures within waves were also tested.

Separate FEM analyses were run to isolate the independent effects of role-identity commitment, role-identity importance, and role-identity salience on the modeled outcomes. Based on the large imputed sample size Chi-Square was not an appropriate fit statistic (Bollen 1989b; Hox, Maas and Brinkhuis 2010); results focused on the Root Mean Square Error of Approximation (RMSEA), the Goodness-of-Fit Index (Hu, Bentler and Kano 1992) or (GFI), Bollen's (1989a) Incremental Fit Index (IFI), and Bentler and Bonnett's (1980) Normed Fit Index (NFI). A model comparison, Akaike's (1987) Information Criterion (AIC), statistic was also run and is included for comparative purposes.

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