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Congruence in Parent–Teacher Communication: Implications for the Efficacy of CBC for Students With Behavioral Concerns

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Abstract. The present study examined parent–teacher congruent communication within conjoint behavioral consultation (CBC). Specifically, the study purpose was to determine the extent to which congruence in parent–teacher communication (i.e., the degree to which parents and teachers view their communication in a similar fashion) moderated CBC's effects on children's social skills. Drawn from a large randomized trial investigating the efficacy of CBC, the participants were 166 children and their parents and 74 teachers. The findings suggested that CBC's effects on teacher-reported children's social skills depend on congruent parent–teacher communication. Specifically, for students whose parents and teachers have these communication conditions, social skills are expected to increase only in the context of the CBC intervention. Implications for CBC research and school-based consultation are discussed.

More than 1 in 10 school-aged children have a diagnosable mental health disorder (Merikangas et al., 2010), and many do not receive services (Kataoko, Zhang, & Wells, 2002). Emotional and behavioral problems are among the most common and chronic con-

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cerns during childhood (Pastor, Rueben, & Duran, 2012). Children with behavioral concerns frequently have difficulties across settings (e.g., home and school; Achenbach, McConaughy, & Howell, 1987) and are susceptible to a variety of problems later in life (Bradshaw, Schaeffer, Petras, & Ialongo, 2010) including school dropout (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006), delinquent activity (Fergusson, Horwood, & Ridder, 2005), and internalizing and externalizing problems as adults (Reef, Diamantopoulou, van Meurs, Verhulst, & van der Ende, 2011).

Given the negative prognosis associated with early behavioral concerns, effective interventions that establish social competence and set young children on a positive developmental trajectory are necessary. Social competence represents an important set of social skills, including cooperation, empathy, and responsibility (Gresham & Elliott, 2008). Whereas lower social competence is associated with negative outcomes (Bornstein, Hahn, & Haynes, 2010), social and behavioral skills are associated with various positive outcomes (DiPrete & Jennings, 2012). In fact, socially competent children are more likely to form positive peer relationships than children with negative behavior styles (Ladd, Birch, & Buhs, 1999). Children who are socially preferred by peers, in turn, are less likely to exhibit aggressive behavior over time than children who are not socially preferred (Palmen, Vermande, Deković, & van Aken, 2011). Moreover, in adolescence, social competence is negatively related to delinquent peer affiliation and positively related to educational success (Stepp, Pardini, Loeber, & Morris, 2011). Thus, identifying interventions to promote social competence is an important step toward positively affecting the social and academic lives of children and adolescents.

Theoretical models (Bronfenbrenner, 1977) and empirical findings have suggested the importance of targeting the home environment and parent educational involvement to promote children's social competence (Sheridan, Kratochwill, & Elliott, 1990), social behavior (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004), and academic success (Christenson, Rounds, & Gorney, 1992; Fan & Chen, 2001; Jeynes, 2007). In particular, family-centered interventions that build family resources (Dishion et al., 2008; Stormshak, Fosco, & Dishion, 2010) and promote family management practices (e.g., developing goals for improving children's peer relationships; Dishion, Stormshak, & Kavanagh, 2012) are promising. In fact, family management practices can improve adolescents' reports of their use of socially skillful behaviors (Mounts, 2011).

Because social–behavioral challenges generally manifest across settings (Achenbach et al., 1987), interventions that target the home–school interface improve child and adolescent social and emotional learning skills and competencies (Garbacz, Swanger-Gagné, & Sheridan, 2015). Interventions grounded in ecological systems theory (Bronfenbrenner, 1977) focus on supporting children within homes (i.e., microsystems) and across the home–school interface (i.e., mesosystem). Interventions that capitalize on the interface or connections across systems promote positive outcomes for students. A recent meta-analysis of the parent involvement literature (Jeynes, 2012) found that programs targeting parent–teacher collaboration demonstrated the second highest effect size of all parent involvement programs examined. In particular, such interventions consistently increase the quality of the home–school relationship and youth prosocial behavior (Power et al., 2012; Sheridan et al., 2012) and decrease problem behavior (Dishion et al., 2008; Sheridan, Ryoo, Garbacz, Kunz, & Chumney, 2013).

CONJOINT BEHAVIORAL CONSULTATION

One ecological intervention that aims to establish constructive and intentional connections between home and school via collaborative interactions is conjoint behavioral consultation (CBC; Sheridan, Kratochwill, & Bergan, 1996; Sheridan & Kratochwill, 2008). CBC is a partnership-centered (Garbacz et al., 2008) indirect intervention for students with social–behavioral challenges or academic delays. Consistent with ecological systems the-

ory (Bronfenbrenner, 1977), CBC emphasizes the relationships and interactions between systems supporting students (e.g., families and schools) as foundational for their learning and development. Thus, CBC's dual goals are to improve outcomes for students across academic and social–behavioral domains and to establish and enhance positive family–school relations. Structured and constructive interactions within CBC focus on promoting (a) collaborative data-based problem solving among parents and teachers and (b) consistent and coordinated implementation of evidence-based interventions across home and school settings.

The operational procedures defining the implementation of CBC occur in the context of interpersonal exchanges among consultants, parents, and teachers as they work together to jointly and collaboratively address concerns they share about students' learning or behavior. Specifically, CBC uses a four-stage collaborative problem-solving format composed of conjoint problem identification, problem analysis, plan implementation, and plan evaluation (Sheridan & Kratochwill, 2008). These four consultation meetings are initiated by school-based consultants who work with parents and teachers as partners to progress through a cycle characterized by collaborative problem solving and shared responsibility. This process has consistently yielded positive effects for students as evidenced in both single-case experimental studies (Colton & Sheridan, 1998; Sheridan et al., 1990) and randomized controlled trials (RCTs; Sheridan et al., 2012; Sheridan, Ryoo et al., 2013), particularly for developing children's social competencies (Colton & Sheridan, 1998; Sheridan et al., 1990, 2012). Despite these positive findings, questions remain about for whom and under what conditions CBC is most effective (Sheridan et al., 2012).

RELATIONSHIPS, CONGRUENCE, AND COMMUNICATION IN CBC

Inherent in CBC's cross-systems focus is an emphasis on congruence among the environments and individuals comprising its ecological context. Historically, congruence has received considerable attention in the consultation literature (Erchul, Hughes, Meyers, Hickman, & Braden, 1992; Pryzwansky, 1986; Sheridan et al., 2004). Congruence has been examined across settings (i.e., the degree to which environments such as home and school are similar and consistent, as is the case with environmental congruence; Crosnoe, Leventhal, Wirth, Pierce, & Pianta, 2010; Hansen, 1986; Pianta & Walsh, 1996) and across individuals (i.e., the degree to which individuals view events, activities, behaviors, or relationships in a similar or dissimilar fashion, also known as *relational congruence*; Sheridan et al., 2004).

Promoting relational congruence is one of the primary aims of CBC. Relational congruence has been discussed for years in school-based consultation literature (Erchul et al., 1992; Pryzwansky, 1986). Typically, definitions of relational congruence in consultation research have focused on the extent to which a consultant and consultee agree about consultation processes (e.g., Pryzwansky, 1986). Erchul et al. (1992) were the first investigators to operationalize and examine congruence in consultation in a manner similar to relational congruence and found that when consultants and consultees agree on consultation roles, processes, and goals, consultees rate consultation outcomes and consultant effectiveness more positively.

Two studies of relational congruence have particular relevance for examining the construct in CBC. Sheridan et al. (2004) investigated congruence among teachers and parents (defined as "a multidimensional relationship concerned with the degree of similarity and shared perceptions among participants," p. 125) and its relation with case outcomes and found that as differences in views of the helpfulness of CBC increased, its acceptability and efficacy decreased. Minke, Sheridan, Kim, Ryoo, and Koziol (2014) investigated the role of congruence in perceptions of the parent–teacher relationship (defined as similarity in parent and teacher ratings of their interpersonal connections) and found that teachers' views of children's social skills and behavioral problems were more favorable

in the presence of a shared, positive view of the relationship. Both studies defined congruence globally, without attempting to identify the role of specific elements (e.g., communication) of congruence and their role in predicting CBC's effectiveness.

Communication as a specific aspect of the parent–teacher relationship is considered a main process feature of CBC (Sheridan & Kratochwill, 2008), with previous research having examined the role of parent–teacher communication within CBC interactions. In a study that sought to explain the relational communication patterns that occur within CBC interviews, Erchul et al. (1999) found that communication patterns between participants tend to be bidirectional and reciprocal. Similarly, Sheridan, Meegan, and Eagle (2002) examined the nature of the social context in CBC as characterized through verbal exchanges and found that speech acts among participants were highly collaborative. When participants were not making collaborative statements, they were obliging others in the partnership, rather than controlling or withdrawing from them. In addition, effect sizes derived from student outcome data were found to be meaningful and positive (Sheridan et al., 2002). It should be noted that the studies examining communication within CBC (e.g., Erchul et al., 1999; Sheridan et al., 2002) investigated communication patterns within the context of structured consultation interviews. This procedure is appropriate given the many ways consultants and consultees interact during interviews. However, several parent–teacher interactions and exchanges occur outside of the context of CBC meetings, and microlevel analyses of communications occurring within meetings may not tap parents' and teachers' perceptions of their communications and relationship more fully. It is important to capture communication within CBC using both microlevel analyses and more global assessments to capture the quality and nature of communication that parents and teachers share within CBC.

Recent discussions within intervention implementation science (e.g., Forman et al., 2013) have called for efforts to discern precise elements that contribute to positive intervention effects. Within CBC, research disentangling specific relational components is necessary to identify for whom and under what conditions CBC is effective (Sheridan et al., 2012). Sheridan et al. (2012) found significant effects on social and adaptive skills and identified the parent–teacher relationship as one possible causal explanation for CBC's significant effects on child behavior. An examination of congruence in the parent–teacher relationship could uncover aspects of the parent–teacher relationship that are important to CBC's effects and could begin to explore for whom CBC is particularly beneficial. This study seeks to extend research examining relational congruence in CBC by specifically exploring congruence in communication (hereafter referred to as *congruent communication*) across parents and teachers. We define *congruent communication* as a special form of relational congruence; it is the degree to which parents and teachers view their communication in a similar fashion. Congruent communication is a specific focus of CBC given its emphasis on building a shared understanding among parents and teachers about a student's behavior and goals through conjoint interactions (Sheridan & Kratochwill, 2008; Sheridan, Rispoli, & Holmes, 2013). Despite the assumed importance of congruent communication to CBC, there has been no research exploring its role in CBC's effects. Understanding whether congruent communication influences the effects of CBC will provide a nuanced understanding of its role in shaping children's outcomes and will begin to uncover for whom CBC may be particularly useful.

The purpose of this study was to determine whether CBC's effects on children's social skills depend on (are moderated by) congruence in parent–teacher communication. On the basis of prior CBC and family-centered intervention research suggesting that effects are magnified for families with more risk (Sheridan, Ryoo et al., 2013; Stormshak, Connell, & Dishion, 2009), we hypothesized that CBC's effects on children's social skills as rated by both parents and teachers will be

amplified for parents and teachers who experience low congruence.

METHOD

Participants in this study were drawn from a larger RCT investigating the efficacy of CBC for families and teachers of children with disruptive behaviors (Sheridan et al., 2012). Informed consent was obtained from the teachers and parents or guardians of all children.

Participants and Setting

The study was conducted in 21 schools in a moderately sized Midwestern city and surrounding communities. The criteria for student participation in the larger RCT were described in the study by Sheridan et al. (2012); to be included in the present study, it was required that (a) there was consistency in the source of parent respondent (mother or father) at both time points and (b) there were data available for each variable for at least one time point. These additional inclusion criteria limited the student sample in this study from 206 (as reported in previous research) to 166.

Students

The student participants in this study were 166 kindergarten through third-grade children (74% boys and 26% girls). Of the children, 26% were in kindergarten, 34% were in the first grade, 27% were in the second grade, and 13% were in the third grade. The average age of participating children was 6.5 years (SD = 1.1 years). The children's ethnic composition was 73% White/non-Hispanic, 9% Black, and 18% other (i.e., Latino, American Indian, Asian, or biracial). Forty-eight percent of children were eligible for free or reduced-price school meals. Four percent of children came from families who did not speak English as their primary language.

Parents

Of the 166 parent participants in this study, 91% were women, with an average age of 34.4 years (SD = 7.4 years). Parents' ethnic composition was 87% White/non-Hispanic, 4% Black, 2% Latino, and 7% other. Parent self-reports indicated that 49% earned a high school diploma as their highest degree, 48% earned a college or advanced degree, and 3% did not have a high school diploma or equivalent.

Teachers

The participating children's general-education teachers (N = 74) were included. Ninety-five percent of the teachers were women, and 99% self-reported as White/non-Hispanic. According to teacher self-reports, the average number of years they were in their current position was 9.8 years (SD = 9.6 years), with a range of 1 to 35 years.

Consultants

The consultants were eight master's level individuals enrolled in a school or counseling psychology graduate training program. All consultants were women and reported as White/non-Hispanic, with an average age of 25.38 years (SD = 2.07 years); they completed an average of 2.63 years (SD = 2.07 years) of graduate education. Consultants completed a 64-hr criterion-based training program that included didactic instruction on the theory and practice of CBC, readings on CBC and evidence-based interventions, video demonstrations, role-playing exercises, and individual supervision.

Measures and Study Variables

Data for the study were collected with two formal measures, and demographic information was obtained. The measures used in the study are described below.

Communication-to-Other Subscale of Parent–Teacher Relationship Scale II

Parents and teachers reported on their perception of communication within the parent–teacher relationship by completing the Communication-to-Other subscale of the Parent–Teacher Relationship Scale II (PTRS-II; Vickers & Minke, 1995). The Communication-to-Other subscale of the PTRS-II is composed of five items rated on a 5-point Likert scale (1 = *almost never*; 5 = *almost always*).

Parallel items comprise the scales for parent and teacher measures. Items include the following: "I tell this teacher (parent) when I am pleased," "I tell this teacher (parent) when I am concerned," "I tell this teacher (parent) when I am worried," "I ask this teacher's (parent's) opinion about my child's progress," and "I ask this teacher (parent) for suggestions." Sufficient internal consistency evidence was present for both parents ($\alpha = .92$) and teachers ($\alpha = .87$).

Parent–Teacher Congruence

Parent–teacher congruent communication scores were calculated for each dyad using a distance formula (Cronbach & Gleser, 1953; Kenny, Kashy, & Cook, 2006; Osgood & Suci, 1952) specified as the square root of the sum of squared differences between the parent's and teacher's responses to the five PTRS-II Communication-to-Other items:

$$Distance_d = \sqrt{\sum_{i=1}^{5} (Parent_{di} - Teacher_{di})^2}.$$

On the basis of this formula, higher scores indicate less parent–teacher congruence.

Distance (Cronbach & Gleser, 1953; Osgood & Suci, 1952) is one type of dyadic index. Other examples of dyadic indices include discrepancy (e.g., Erchul et al., 1992; Murstein & Beck, 1972) and d^2 measures (also measures of dissimilarity), as well as correlation (e.g., Deal, Halverson, & Wampler, 1999; Harvey, 2000), covariance, and intraclass correlation measures (i.e., measures of similarity; Kenny et al., 2006). We chose the distance measure over the other dyadic indices for the following reasons: First, dissimilarity measures are preferred over similarity measures when it is important to consider multiple aspects of agreement (i.e., agreement in the average level, shape or pattern, and spread of the item responses). The correlation and covariance indices are not sensitive to differences in level, and furthermore, the correlation index is not sensitive to differences in spread. Second, dissimilarity measures can be calculated regardless of whether dyad members exhibit variability in their responses across items, which is not the case for similarity measures. Third, although the three dissimilarity measures provide comparable information and, thus, comparable results, distance is generally preferred because of its greater interpretability (Kenny et al., 2006).

Social Skills Rating System

Parents and teachers completed the Social Skills Rating System (Gresham & Elliott, 1990) to evaluate children's social skills. Respondents rated, on a 3-point scale (*never*, *sometimes*, *often*), the frequency with which children displayed skillful behaviors in the areas of cooperation, assertion, and self-control. The Social Skills Rating System is a norm-referenced measure that reports a composite social skills standard score ($M = 100$, $SD = 15$). The internal consistency was 0.87 for the parent-reported composite score and 0.94 for the teacher-reported composite score (Gresham & Elliott, 1990).

Covariates

Several covariates were evaluated in this study, including child age in years, teacher report of preintervention behavior severity (rated on a Likert-type scale from 1 = *very mild* to 9 = *very severe*), cumulative risk, and disability status. All covariates were measured at Time 1 (i.e., pretest). Cumulative risk was calculated as the sum of four risk indicators: (a) there are fewer than two adults in the home, (b) the primary language is not English, (c) the maternal education level is less than a high school degree, and (d) the child is eligible for free or reduced-price school meals. A child was considered to have a disability if he or she had a clinical diagnosis as reported by the parent or received special education services as reported by the teacher (or both).

Procedures

The procedures for this study aligned with those from the larger RCT, and all methods were conducted in compliance with the appropriate institutional review board. After we obtained informed consent, children were assigned to the control condition or the CBC condition described below.

Control Condition

Children in the control condition received services that were consistent with supports provided by school personnel (e.g., office referrals, special education services) or services outside of the school as reported by parents (e.g., outpatient therapy, family counseling). Parents in the control group participated in typical school-offered meetings generally available when concerns about student behavior were raised. These services were low in frequency, with approximately 2% reporting that they participated in student assistance team meetings and 4% reporting that they participated in school multidisciplinary team meetings during which student qualification for special education eligibility was reviewed.

CBC Condition

CBC was implemented by consultants who followed procedures for collaborative problem solving as detailed by Sheridan and Kratochwill (2008). An average of four formal structured consultation meetings were held with consultants, two to three parents, and one teacher over a period of approximately eight weeks. All meetings were between 45 and 60 min in length. During each meeting, consultants used strategies to support both parent–teacher relationships and positive behavior change for students. Open-ended questions directed to both parents and teachers, invitations for information sharing, clarifications and summarizations of contributions by both parties, and modeling of effective listening and perspective taking were used to strengthen parent–teacher communication. In addition, regular informal supports to parents and teachers were provided in the form of home visits (on average, one per student participant) and classroom visits (on average, once per week per classroom). Finally, many opportunities outside of the problem-solving meetings and visits were structured to allow ongoing bidirectional parent–teacher communication, including the use of daily home–school notes and informal exchanges (e.g., via e-mail or phone calls).

Structurally, the first problem-solving meeting (Conjoint Needs [Problem] Identification Interview) involved parents and teachers working collaboratively to pinpoint and define specific concerns about student behaviors. Complementary, practical procedures for collecting baseline data on identified target behaviors were developed for use across settings. During the Conjoint Needs (Problem) Analysis Interview, the consultation team discussed baseline data, established a behavioral goal, and developed plans to be implemented across home and school. For each student, plans were derived collaboratively by the consultation team involving at least one of four research-based components: (a) positive reinforcement (e.g., attention, rewards); (b) antecedent control (e.g., structured prompts, precision requests, rules); (c) skills training (e.g., social skills training, behavioral rehearsal); and (d) reductive techniques (e.g., removing privileges, response cost). In addition, all of the interventions contained a home–school communication component such as home–school notes (McCain & Kelley, 1994). Tactics by which parents and teachers delivered the intervention strategies were specified in a collaborative fashion to accommodate individual differences and preferences of parent–teacher teams. Progress toward goals was monitored and evaluated through Conjoint Plan Evaluation Interviews.

Treatment Integrity

On the basis of the larger RCT (Sheridan et al., 2012), CBC procedural integrity was assessed for 45% of all CBC interviews by trained coders. Consultants met 99% of objectives during Conjoint Needs (Problem) Identification Interviews, 98% of objectives during Conjoint Needs (Problem) Analysis Interviews, and 98% of objectives during Conjoint Plan Evaluation Interviews. Treatment-plan implementation was evaluated via parent and teacher self-reports of adherence, permanent-product reports across home and school, and direct classroom observations by consultants. Moderate to high implementation adherence was found across methods and sources. Parents reported adhering to an average of 81.64% of plan steps, and teachers reported

adhering to an average of 92.54% of plan steps. Reviews of permanent products suggested that an average of 89.06% of objectives were met at home and 98.49% of objectives were met at school. Direct observations at schools indicated that, on average, 87.46% of objectives were implemented. (See Sheridan et al., 2012, for a complete review of treatment integrity procedures.)

Data Analysis Plan

Analyses were performed using the GLIMMIX procedure in SAS Version 9.3 (SAS Institute, 2011). In preference to listwise deletion, GLIMMIX allows all available data to be analyzed such that the dyads that met the inclusion criteria (see Participants and Setting) were included in the analyses if they had data for each study variable for at least one time point. A comparison of all study variables at each time point indicated no significant differences between the analysis sample and omitted sample, suggesting that missing data were not a threat to the validity of the results. We estimated a set of three-level (Level 1, time point; Level 2, dyad; Level 3, classroom) random-intercept linear regression models, and we tested the statistical significance of the three-way interaction effect of Time (before versus after intervention) × Group (CBC versus control) × Parent–teacher congruence. This test provides an evaluation of whether congruence in parent–teacher communication moderates the CBC effect, where the CBC effect is statistically defined as the Time × Group effect. Separate models were evaluated for the two child outcomes (i.e., parent- and teacher-reported social skills). Parent–teacher congruence was measured at both time points, so group-mean centering (Singer & Willett, 2003) was used to decompose congruence into its time-varying (i.e., within-dyad effect; the effect of having higher or lower congruence at a particular time point relative to one's average level of congruence) and average (i.e., between-dyad effect; the effect of having higher or lower congruence on average relative to the overall sample mean) sources of variability. Thus, each model contained two three-way interactions: (a) Time × Group × Time-varying parent–teacher congruence and (b) Time × Group × Average parent–teacher congruence. Child age, behavior severity, number of risk factors, and disability status were included in the models as covariates. Age, behavior severity, and risk were mean centered, and time, group, and disability status were dummy coded (reference groups were pre-intervention, control group, and no disability).

The omnibus tests of the interaction effects described above indicate only whether or not congruence in parent–teacher communication moderates CBC effects on child outcomes. To interpret the interaction effects, it was necessary to plot and perform follow-up tests of the corresponding simple effects (c.f. Aiken & West, 1991; Whisman & McClelland, 2005). Given a significant three-way interaction effect, model-implied simple effects were explored via the pick-a-point procedure (Rogosa, 1980), in which CBC effects (i.e., Time × Group effects) were examined at specific points, or levels, of parent–teacher congruence. The pick-a-point procedure is used when the moderator variable is continuous because it is nearly impossible to evaluate simple effects at all possible points of a continuous variable. Following the recommendations of Cohen and Cohen (1983), we examined the simple effects at three points along the congruence continuum: at 1 *SD* below the sample distance mean (corresponding to high congruence), at the sample mean (corresponding to average congruence), and at 1 *SD* above the sample distance mean (corresponding to low congruence). All simple effects were calculated using ESTIMATE statements in PROC GLIMMIX.

Simple effects were evaluated at multiple (three) points along the parent–teacher congruence continuum, so it was necessary to adjust the resulting p values to control the family-wise error rate. The Bonferroni-Holm procedure (Holm, 1979) was used to obtain the adjusted p values as follows: For each set of related tests (Set 1, three simple two-way interactions; Set 2, three simple CBC slopes; Set 3, three simple control slopes), p values were ordered sequentially from smallest to

largest—$p_{(1)}$, $p_{(2)}$, and $p_{(3)}$. Then, adjusted p values (p_{BH}) were calculated as $3 \times p_{(1)}$, $2 \times p_{(2)}$, and $1 \times p_{(3)}$ and sequentially compared with a critical value of $\alpha = 0.05$. Comparisons proceeded up until the first nonsignificant result was identified (e.g., if $3 \times p_{(1)}$ was $>$ .05, then all remaining tests were deemed nonsignificant).

For all analyses, standard errors and denominator degrees of freedom were computed using the correction of Kenward and Roger (1997), and variance components were estimated using residual maximum likelihood. Statistical significance was determined using $\alpha = 0.05$. To interpret the clinical meaningfulness of the simple effects conditional on congruence, effect sizes were calculated using an independent-groups pretest–posttest design formula (c.f. Morris & DeShon, 2002) specified as the estimated simple effect divided by the pooled standard deviation of difference scores. This effect size, denoted *d*, can be interpreted as the standardized (i.e., standard deviation) difference in average improvement across time between the CBC and control groups at a particular point along the congruence continuum.

RESULTS

Table 1 provides descriptive statistics for the study variables, and Table 2 provides the zero-order correlations. Table 3 shows the model-estimated fixed effects and variance components.

Average parent–teacher congruent communication significantly moderated the CBC effect on teacher-reported children's social skills ($\hat{\beta} = 3.18$, $SE = 1.34$, $p = .019$), whereas time-varying congruent communication did not moderate the CBC effect ($\hat{\beta} = -2.92$, $SE = 4.84$, $p = .548$). Congruent communication did not moderate the CBC effect on parent-reported children's social skills ($\hat{\beta} = 3.40$, $SE = 8.52$, $p = .690$ for time-varying congruence; $\hat{\beta} = -1.25$, $SE = 1.66$, $p = .456$ for average congruence). These results indicate that the CBC effect on parent-reported children's social skills does not depend on the degree of parent–teacher congruent communication. In contrast, the CBC effect on teacher-reported children's social skills does depend on the degree of congruent communication.

Simple effects were evaluated to interpret the significant three-way interaction effect on teacher-reported children's social skills. Figure 1 illustrates the predicted CBC effects at three different levels of average parent–teacher congruent communication. For high congruent communication, there was no significant CBC effect ($\hat{\beta} = -0.14$, $SE = 2.46$, $p = .954$, $p_{BH} = .954$, $d = 0.01$). Teacher-reported children's social skills significantly increased across time for both the CBC group ($\hat{\beta} = 4.27$, $SE = 1.68$, $p = .012$, $p_{BH} = .012$) and control group ($\hat{\beta} = 4.41$, $SE = 1.80$, $p = .016$, $p_{BH} = .048$). For average congruent communication, there was a significant CBC effect ($\hat{\beta} = 4.00$, $SE = 1.71$, $p = .021$, $p_{BH} = .042$, $d = 0.40$), such that teacher-reported children's social skills significantly increased across time for the CBC group ($\hat{\beta} = 5.27$, $SE = 1.16$, $p < .001$, $p_{BH} < .001$) but not for the control group ($\hat{\beta} = 1.27$, $SE = 1.26$, $p = .316$, $p_{BH} = .316$). Likewise, for low congruent communication, there was a significant CBC effect ($\hat{\beta} = 8.14$, $SE = 2.43$, $p = .001$, $p_{BH} = .003$, $d = 0.82$). Teacher-reported children's social skills significantly increased across time for the CBC group ($\hat{\beta} = 6.27$, $SE = 1.70$, $p < .001$, $p_{BH} = .001$) but not for the control group ($\hat{\beta} = -1.87$, $SE = 1.74$, $p = .285$, $p_{BH} = .570$). Overall, the simple effects indicate that the benefit of CBC is greater for parent–teacher dyads with average or low levels of congruent communication. For students whose parents and teachers have these communication conditions, social skills are expected to increase only in the context of the CBC intervention.

DISCUSSION

The present study examined whether parent–teacher congruent communication moderates CBC's effects on children's social skills. Although some research has investigated communication patterns within school-based consultation (e.g., Erchul et al., 1992,

Table 1. Descriptive Statistics for Study Variables

	Total (N = 166)		CBC (n = 90)		Control (n = 76)	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Child outcomes						
Social skills rated by parent	89.77 (16.62)	92.45 (16.98)	89.55 (17.32)	93.73 (17.29)	90.01 (15.96)	90.80 (16.58)
Social skills rated by teacher	85.21 (11.29)	88.84 (11.81)	84.71 (12.43)	90.08 (13.27)	85.82 (9.78)	87.33 (9.65)
Parent–teacher congruence[a]	2.54 (1.51)	2.51 (1.43)	2.58 (1.67)	2.44 (1.38)	2.50 (1.35)	2.60 (1.52)
Child covariates						
Age, years	6.52 (1.14)	—	6.46 (1.10)	—	6.61 (1.19)	—
Behavior severity	6.72 (1.33)	—	6.81 (1.31)	—	6.61 (1.35)	—
Number of risk factors[b]	0.82 (0.81)	—	0.91 (0.82)	—	0.71 (0.78)	—
Presence of disability[c]	55%	—	60%	—	50%	—

Note. Descriptive statistics represent mean (standard deviation) or percentage. CBC = conjoint behavioral consultation.
[a]Congruence was calculated using a distance measure, so lower scores indicate greater congruence.
[b]The risk factors are as follows: (a) there are fewer than two adults in the home, (b) the primary language is not English, (c) the maternal education level is less than a high school degree, and (d) the child is eligible for free or reduced-price school meals.
[c]The child had a clinical diagnosis as reported by the parent or received special education services as reported by the teacher (or both).

Table 2. Zero-Order Correlations Among Study Variables for CBC and Control Groups

	Social Skills Rated by Parent		Social Skills Rated by Teacher		Parent–Teacher Congruence				
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Age	Behavior Severity	Number of Risk Factors
Social skills rated by parent									
Total	—	—							
CBC	—	—							
Control	—	—							
Social skills rated by teacher									
Total	.03	.09	—	—					
CBC	–.09	.10	—	—					
Control	.22	.04	—	—					
Parent–teacher congruence									
Total	.02	.05	.18*	–.11	—	—			
CBC	–.06	–.06	.12	–.06	—	—			
Control	.12	.18	.27*	–.17	—	—			
Age									
Total	.10	.03	–.04	.02	–.01	.00	—		
CBC	.06	.06	–.02	.02	.04	.07	—		
Control	.13	.01	–.07	.02	–.06	–.09	—		
Behavior severity									
Total	–.02	.00	–.40*	–.22*	.01	.03	.07	—	
CBC	.09	.02	–.38*	–.16	.02	.12	.00	—	
Control	–.14	–.05	–.41*	–.35*	–.01	–.06	.16	—	
Number of risk factors									
Total	–.02	–.02	–.06	–.12	.11	.02	–.03	.13	—
CBC	.04	.06	–.08	–.19	.12	–.08	.01	.16	—
Control	–.10	–.14	.00	–.05	.10	.17	–.05	.08	—
Presence of disability									
Total	–.33*	–.26*	–.11	–.10	–.16	–.13	.00	.14	.03
CBC	–.26*	–.27*	–.06	–.09	–.17	–.05	–.07	.02	.08
Control	–.41*	–.29*	–.19	–.15	–.14	–.22	.09	.26*	–.07

Note. CBC = conjoint behavioral consultation.
*$p < .05$.

2007) and CBC (Sheridan et al., 2002), this study examined congruent communication in a manner that considers perceptions of communication as experienced globally across the consultation process rather than within and across specific consultation interviews. Sheridan et al. (2012) identified the parent–teacher relationship but not congruent communication per se as an important element in understanding CBC's positive effects. Minke et al. (2014) investigated congruence in the parent–teacher relationship globally but did not uncover specific relationship dynamics (e.g., congruent communication). This study extends school-based consultation research, CBC research, and parent–teacher relationship research by

Table 3. Model-Estimated Fixed Effects and Variance Components

	Social Skills Rated by Parent				Social Skills Rated by Teacher			
	$\hat{\beta}$	*SE*	*df*	*p*	$\hat{\beta}$	*SE*	*df*	*p*
Fixed effects								
Intercept	95.35	2.37	86.88	<.001	86.04	1.73	132.4	<.001
Time	1.44	1.54	111.7	.353	1.27	1.26	123.5	.316
Group	0.59	2.73	84.42	.828	0.17	2.06	115.2	.935
TV congruence	–1.73	3.82	175.6	.651	0.06	2.30	183.1	.978
Average congruence	1.56	1.55	183.3	.317	0.86	0.98	209.1	.383
Time × Group	2.80	2.11	112	.189	4.00	1.71	124.6	.021
Time × TV congruence	1.32	7.20	139.3	.855	–2.89	3.99	114.1	.470
Time × Average congruence	–0.15	1.15	110.5	.900	–2.41	0.95	123.1	.013
Group × TV Congruence	–2.00	4.52	177	.659	3.78	2.77	192.1	.175
Group × Average congruence	–1.38	2.17	193.3	.525	–1.49	1.33	215.2	.264
Time × Group × TV congruence	3.40	8.52	139.8	.690	–2.92	4.84	122.1	.548
Time × Group × Average congruence	–1.25	1.66	113.9	.456	3.18	1.34	128.2	.019
Age	0.84	1.10	90.28	.444	0.40	0.77	125.9	.608
Severity	0.27	1.01	142.8	.792	–2.25	0.58	137.9	<.001
Risk[a]	–0.50	1.66	145.2	.764	–0.92	0.97	147.5	.341
Disability[b]	–10.13	2.65	142.2	<.001	–1.55	1.54	141.7	.315
Variance components								
Classroom intercept variance	–4.61[c]	32.23	—	—	44.60	12.93	—	—
Dyad intercept variance	214.85	43.62	—	—	28.25	9.89	—	—
Residual variance	62.04	8.68	—	—	43.76	5.94	—	—

Note. Congruence was group mean centered. Age, severity, and risk were mean centered. Reference groups were Time 1, control, and no disability. TV = time-varying.

[a]The risk factors are as follows: (a) there are fewer than two adults in the home, (b) the primary language is not English, (c) the maternal education level is less than a high school degree, and (d) the child is eligible for free or reduced-price school meals.

[b]The child had a clinical diagnosis as reported by the parent or received special education services as reported by the teacher (or both).

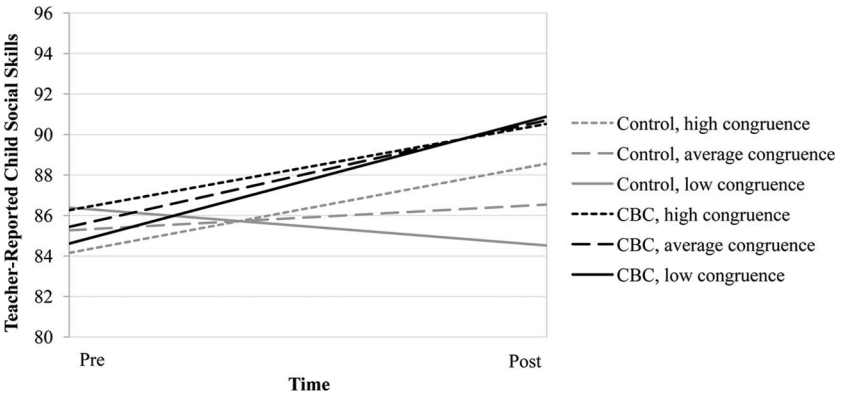
[c]Rather than constraining the variance at zero, we used the GLIMMIX "nobound" option to allow the estimated variance to be negative to ensure appropriate estimation of degrees of freedom for the fixed effects.

attending to one specific element of the parent–teacher relationship (i.e., congruent communication) to determine its role in CBC for parents and teachers of children with behavioral concerns.

Main Findings

Positive, congruent communication has been emphasized in CBC procedures (Sheridan & Kratochwill, 2008) but not studied as a moderator of CBC's effects. This study is the first to demonstrate that CBC's effects on teacher-reported children's social skills depend on parent–teacher congruent communication. This finding identifies a specific component that can increase the strength of effects in a family–school intervention to build children's social competencies (Bornstein et al., 2010; DiPrete & Jennings, 2012). It is noteworthy that parent report of children's social skills did not depend on parent–teacher congruent communication. This finding was contrary to our hypothesis, but finding statistically significant effects based on one reporter but

Figure 1. Model-Predicted Child Social Skills



Note. Model-predicted teacher-reported children's social skills are shown by time point, group, and level of parent–teacher congruence averaged across time. Congruence is a continuous variable, but simple effects were evaluated at three discrete levels: high congruence (i.e., 1 *SD* below sample distance mean); average congruence (i.e., at sample distance mean); and low congruence (i.e., 1 *SD* above sample distance mean). Estimates were computed holding all other variables in the model constant at their average values. CBC = conjoint behavioral consultation.

not another is not inconsistent with other CBC research (Sheridan et al., 2012) or school-based family-centered intervention research (e.g., Bierman et al., 2008). In this study, teachers rated children approximately 1 *SD* below the mean at Time 1, whereas parent ratings of children's social skills at Time 1 were within the average range. Thus, on the basis of teacher report, children's social skills at Time 1 within the school setting were more in need of intervention than were children's social skills as rated by parents in the home setting.

Follow-up analyses indicated that CBC's effects on teacher-reported children's social skills are greater for parent–teacher dyads with lower congruent communication. That is, CBC is particularly beneficial when parents' and teachers' communications with one another are less congruent relative to when parents' and teachers' communications are highly congruent. This study adds to the CBC and family-centered intervention research that has investigated for whom these interventions may be particularly beneficial (Sheridan, Ryoo et al., 2013; Stormshak et al., 2009). The findings highlight the importance of efforts to improve parent–teacher communication congruence for children with challenging behaviors, the relevance of CBC for parents and teachers with strained communication, and CBC's utility at promoting children's functioning under such unique relationship conditions.

Taken together, the findings of this study extend work by Sheridan et al. (2012) and Minke et al. (2014), who highlighted the importance of the parent–teacher relationship. In this study, congruent parent–teacher communication (i.e., a specific aspect of the parent–teacher relationship) was found to play an important role in understanding CBC's effects, particularly for dyads whose perceptions of communications may not be aligned.

Contributions of This Study

This study represents an extension of previous research examining communication in consultation. It adds breadth and depth to the manner in which communication is explored in consultation because it is the first study to define and explore the construct of congruent communication in school consultation, and it considers the joint experiences of parent and teacher consultees within the entire consultation process. Previous school consultation and CBC research has examined rela-

tional processes among consultants and school personnel (Erchul et al., 1992, 2007; Martens, Erchul, & Witt, 1992) and among consultants, parents, and teachers (Erchul et al., 1999; Grissom, Erchul, & Sheridan, 2003; Sheridan et al., 2002) using a microanalytic approach to assess speech acts and verbal exchanges. However, the CBC intervention is composed of many ongoing interactions, exchanges, and mutual practices among parents and teachers over time. This study considers the meaning aligned with acts and exchanges by participants themselves more globally over the course of consultation. Furthermore, the distance procedure for examining congruent communication in this study demonstrates its utility in CBC research. The assessment of parent and teacher perceptions of congruent communication in this study adds to the literature examining communication in consultation. Assessment of congruent perceptions of communication across the stages of consultation allows us to capture exchanges, experiences, and attitudes that occur within the context of CBC relationships. Microlevel approaches to examining communication in consultation and the more global assessment used in this study are complementary approaches that each has unique utility within consultation research.

The present study augments research examining parent–teacher congruence in CBC. Specifically, prior research examining parent–teacher congruence within CBC has focused on ratings of consultant helpfulness (Sheridan et al., 2004). However, that investigation was based on absolute differences between parent and teacher perspectives about the helpful nature of CBC consultants. This study examined parent–teacher congruent communication within CBC (not congruence in ratings of consultant helpfulness).

An important finding of this study was that CBC's effects are more pronounced as parent–teacher congruent communication decreases, suggesting the importance of CBC—a relationally based, structured problem-solving process—under conditions when parents and teachers do not view their communications with one another in a similar manner. There are myriad barriers to building and maintaining strong parent–teacher communication patterns, including cultural differences, prior negative interactions, and communication only during crises (Christenson, 2004). CBC appears to be particularly beneficial for children when parent and teacher perceptions of their communication are not aligned.

Limitations and Future Research Directions

Some limitations are important to consider when one is interpreting the present findings. First, the definition of congruent communication used in this study was based on relational congruence and communication applied by other researchers in the consultation literature (Bergan & Tombari, 1976; Erchul et al., 1992; Pryzwansky, 1986; Sheridan et al., 2004). Applying relational congruence to parent–teacher communication is somewhat novel. In addition, measurement of congruent communication relied on only one measure for which full psychometric properties have not been established. Additional research is needed to establish the construct validity of congruent communication and the reliability of its measurement. Moreover, there may be alternative ways of conceptualizing and measuring congruent communication. Future research is needed to ascertain the most appropriate manner for operationalizing and measuring this novel construct in the literature on family–school partnerships and relationships.

Second, our measure of congruent communication was based on the congruence of self-reports by parents and teachers. Given that personal perceptions are the construct of interest, this was appropriate; however, it is noteworthy that other direct, objective measures of communication and related processes (e.g., joint participation in problem solving; quality of interactions) were not included. It may be useful for future research to consider whether other assessment strategies may be able to capture congruence in parent–teacher communications (e.g., home–school notes).

Third, the sample used in this study included parents and teachers of children with

behavioral concerns. Thus, the findings are not generalizable to students for whom social–behavioral concerns are not present. Perceptions of congruent communication may operate differently for different target concerns (e.g., academic behaviors) or for a general-education sample. Future research investigating the effects of congruent communication for various samples is needed. Similarly, participants in this study were not particularly diverse, especially the consultants and teachers. Communication patterns may operate differently among parents and teachers who differ from one another. Communication styles and interaction patterns have been specifically noted as important for consultants to consider when working with diverse families (Ingraham, 2000; Li & Vazquez-Nuttall, 2009; Ramirez, Lepage, Kratochwill, & Duffy, 1998). Future research should examine the role of congruent communication with a diverse sample of children, parents, teachers, and consultants.

Fourth, this study builds on prior parent–teacher relationship research (Minke et al., 2014; Sheridan et al., 2002) and relational communication research within consultation (Erchul et al., 1992; Sheridan et al., 2004) by examining parent–teacher congruent communication as a moderator of CBC's effects on children's social skills. There have been recent calls to uncover unique and operative elements (i.e., "active ingredients"; Forman et al., 2013; Sheridan, Rispoli et al., 2013) to identify intervention features responsible for desirable treatment effects. Future research should examine congruent communication as a mediator of CBC's effects on child behavior. When examining congruent communication as a mediator, researchers will also find it useful to explore CBC consultant use of relationship-building strategies that may promote congruence in parent–teacher communication.

Finally, the study from which these data were derived did not set out to investigate congruent communication. Thus, the independent variable was not manipulated, and the range for some of our variables was limited. Research that is established with the intent of identifying the effects of congruent communication as it occurs across a full continuum is necessary. Such research could ideally build on a trajectory of extant work on communication in school-based consultation (Erchul, Grissom, Getty, & Bennett, 2014) and CBC (Sheridan, Clarke, & Ransom, 2014) by adopting available operational definitions and measurement paradigms.

CONCLUSION

The purpose of this study was to examine whether relational congruence in parent–teacher communication moderates CBC's effects on children's social skills. The findings indicated that CBC's effects on teacher-reported children's social skills were dependent on relational congruence in parent–teacher communication, in which CBC's effects were particularly pronounced for dyads with lower communication congruence. This study adds to the literature examining relational congruence in consultation by (a) targeting parent–teacher communication and (b) demonstrating the utility of a distance procedure for examining relational congruence. Future research should thoroughly examine relational congruence in consultation more fully (i.e., beyond communication), particularly with children, families, teachers, and consultants of diverse backgrounds, and test parent–teacher congruent communication as a potential mediator of CBC's effects.

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