

# Self-perceived Coparenting of Nonresident Fathers: Scale Development and Validation

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*This study reports on the development and validation of the Fatherhood Research and Practice Network coparenting perceptions scale for nonresident fathers. Although other measures of coparenting have been developed, this is the first measure developed specifically for low-income, nonresident fathers. Focus groups were conducted to determine various aspects of coparenting. Based on this, a scale was created and administered to 542 nonresident fathers. Participants also responded to items used to examine convergent and predictive validity (i.e., parental responsibility, contact with the mother, father self-efficacy and satisfaction, child behavior problems, and contact and engagement with the child). Factor analyses and reliability tests revealed three distinct and reliable perceived coparenting factors: undermining, alliance, and gatekeeping. Validity tests suggest substantial overlap between the undermining and alliance factors, though undermining was uniquely related to child behavior problems. The alliance and gatekeeping factors showed strong convergent validity and evidence for predictive validity. Taken together, results suggest this relatively short measure (11 items) taps into three coparenting dimensions significantly predictive of aspects of individual and family life.*

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The rising rates of nonmarital childbearing among low-income individuals over the past few decades (Cherlin, 2010) have been associated with large numbers of fathers not residing in the same household as their children and the mothers of their children (Amato, 2005). Despite not living together, many of these fathers share parenting responsibilities (i.e., coparent) with the mother (Cabrera, Ryan, Mitchell, Shannon, & Tamis-LeMonda, 2008). Still, coparenting relationships in nonresident father families are often complex with a substantial number of fathers struggling to be involved in the family system, including the coparenting relationship.

Coparenting is typically defined as “shared activity undertaken by those adults responsible for the care and upbringing of children” (McHale & Irace, 2011, p. 16) involving triadic exchanges in that they are at the nexus of the mother–father–child system (McHale &

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Coates, 2014). Researchers, practitioners, and policymakers have become increasingly interested in the coparenting of low-income nonresident parents, largely because coparenting relationships tend to deteriorate over time. This is unfortunate given the importance of healthy coparenting for the children and overall family system (see Mangelsdorf, Laxman, & Jesse, 2011).

Indeed, studies have shown that nonresident fathers are less likely to be involved with their children when the coparenting relationship is weak (Carlson, McLanahan, & Brooks-Gunn, 2008; Futris & Schoppe-Sullivan, 2007). From a clinical perspective, Ahrons (2007) notes that, for divorced parents: "It is sobering . . . to hear how their behavior—not the divorce per se, but the quality of their coparenting—continues to echo throughout the family system" (p. 63).

One significant hindrance to research in this area is the lack of quantitative coparenting measures developed and validated for low-income, nonresident parents. With the exception of one measure focused on divorced families (e.g., Ahrons, 1981), most available coparenting measures have been developed for co-residing parents (Feinberg, Brown, & Kan, 2012; Hock & Mooradian, 2012; McHale & Fivaz-Depeursinge, 2010). Further, recent research has stressed the need to examine multiple dimensions of coparenting for nonresident fathers (Fagan & Kaufman, 2015). Indeed, a monolithic approach to coparenting likely misses crucial aspects of the coparenting relationship, each with unique family antecedents and outcomes.

This paper describes the development and validation of a new, multidimensional measure of low-income, nonresident fathers' perceptions of their coparenting with their child's biological mother. This will enable researchers and practitioners to extend primary research on these fathers as well as to better assess program impacts (though still with the caveats of self-reported data; e.g., Dyer, Day, & Harper, 2014).

## THEORETICAL CONSIDERATIONS

McHale (2007) notes that although children are almost ubiquitously raised in "multi-person relationship systems" (p. 370), the parent-child dyad has remained the foci of research. However, family systems theory has long acknowledged that development is best understood in the context of a whole family system which is made up of interdependent subsystems (Cox, Paley, & Harter, 2001; Minuchin, 1988). Coparenting is a key subsystem and, when functioning well (e.g., high support, coordination, and low conflict), has positive impacts on other subsystems and the individuals within those systems (see above). A number of early coparenting studies focused on parenting coordination of those divorced/separated (Maccoby, Depner, & Mnookin, 1991). This focus was justified given that a poorer functioning marital/partner subsystem is negatively related to the coparenting subsystem (Stroud, Durbin, Wilson, & Mendelsohn, 2011). With a deterioration of coparenting, many nonresident fathers experience a negative spillover to the father-child relationship as their parenting role diminishes (Carlson et al., 2008; Formoso, Gonzales, Barrera, & Dumka, 2007; Martin, Sturge-Apple, Davies, Romero, & Buckholz, 2017; Stroud et al., 2011). In other words, a deteriorating marital/partner system may strain the coparenting system, which, in turn, may strain parent-child systems. Bronfenbrenner's (1999) ecological systems theory can also be used to conceptualize the role of the coparenting subsystem for nonresident parents. This theory proposes that development transpires during proximal processes which occur within the child's immediate environment (i.e., a "microsystem"). The interaction between the child's various microsystems is referred to as the "mesosystem." The better those who are in the child's various microsystems coordinate (i.e., the more efficient the mesosystem), the better the proximal process of each microsystem can be tailored toward positive development. For nonresident

parents, their coparenting relationship may be considered a central component of the mesosystem. When parents are coordinated, allied, and not undermining each other, proximal processes within each parental microsystem can be best organized for the child's benefit. For nonresident fathers, a well-functioning mesosystem may be particularly important as the mother-child and father-child microsystems often have greater separation (i.e., are less likely to occur within the same household). Indeed, with nonresident fathers often less privy to day-to-day information about the child, a well-functioning mesosystem may be critical for fathers to effectively organize the father-child microsystem. Further, when nonresident fathers have fewer financial or educational resources, a poorly functioning coparental subsystem may be especially difficult for them to overcome (Fagan & Palkovitz, 2017).

Finally, the nonresident father's *perception* of the coparenting relationship is also an important feature of well-functioning coparenting. Fathers with negative perceptions of their coparenting relationship may develop unreasonable expectations of themselves and their partner that can further fracture coparenting behaviors (Loper, Phillips, Nichols, & Dallaire, 2014).

Thus, given the salience of coparenting perceptions among low-income nonresident fathers, it is important to have validated measures of this construct. As noted earlier, we are aware of only one validated measure of coparenting perceptions of nonresident fathers and mothers (measuring coparenting frequency, quality, and content), and it was developed for divorced couples (see Ahrons, 1981). However, recent qualitative work on nonresident father coparenting (Fagan & Kaufman, 2015) revealed several conceptually distinct dimensions of coparenting that Ahrons' (1981) measure does not treat in any substantial way (e.g., Ahrons' scale includes only one undermining item and does not substantively treat gatekeeping or alliance).

Identifying multiple dimensions of coparenting is consistent with family systems theory as it embraces a more holistic view of complex family processes (see Kerig, 2016). In nonresidential fathers, four important components of perceived coparenting may include perceived alliance, perceived gatekeeping, perceived conflict, and perceived undermining, and it would be valuable to (1) explore whether these components can be identified, and (2) develop and test an instrument for assessing them.

Cohen and Weissman (1984) defined parenting alliance as the capacity of partners to "acknowledge, respect, and value the parenting roles and tasks of the partner" (p. 35). Futris and Schoppe-Sullivan (2007) suggested that nonresidential fathers who perceive themselves to have a strong alliance with the mother may perceive greater rewards and fewer costs to maintaining a relationship with the child. Many studies have found significant correlations between nonresidential fathers' perceptions of a strong parenting alliance and their parenting behavior (Coates & Phares, 2014; Ryan, Kalil, & Ziol-Guest, 2008). The rewards of fathers perceiving a strong parenting alliance are also likely to be manifested in fathers having greater parenting self-efficacy and satisfaction with parenting (Schoppe-Sullivan, Settle, Lee, & Kamp Dush, 2016).

Gatekeeping is also considered an influential coparenting process among nonresidential parents (Trinder, 2008). Maternal gatekeeping has been defined as "... a set of complex behavioral interactions between parents, where mothers influence father involvement through their use of controlling, facilitative, and restrictive behaviors directed at father's childrearing and interaction with children on a regular and consistent basis" (Puhlman & Pasley, 2013, p. 177). Qualitative research revealed that maternal gatekeeping is a common coparenting theme mentioned by low-income nonresidential fathers (Fagan & Kaufman, 2015). Moreover, studies have shown that nonresidential fathers' perceptions of maternal gatekeeping are more detrimental to the father-child relationship than maternal gatekeeping in co-residential families (Ganong, Coleman, & McCauley, 2012).

Although the gatekeeping component of coparenting may affect aspects of the mother–father subsystem and parenting self-esteem, for nonresident fathers, perceived gatekeeping may primarily relate to father–child contact and engagement with children.

Harper and Fine (2006) suggested that lack of established norms for nonresident father–mother inter-parental relationships can lead to coparental conflict, which then can cause a strained relationship between fathers and children (Dunn, Cheng, O'Connor, & Bridges, 2004). In studies of co-residential families, fathers' perceptions of coparenting conflict were found not only to decrease their involvement with children, but also to decrease maternal sensitivity (Cabrera, Shannon, & La Taillade, 2009) and to be directly and indirectly related to negative child outcomes (Cabrera, Scott, Fagan, Steward-Streng, & Chien, 2012). Coparental conflict may undermine parents' ability to both model and assist children in regulating their emotions (Feinberg, 2003), which might be the reason it has been found to be a stronger predictor than coparenting support of single parent and child adjustment (Jones, Forehand, Dorsey, Foster, & Brody, 2005).

"Undermining" has been defined as "hostile, critical or competitive behaviors between parents" (Altenburger, Lang, Schoppe-Sullivan, Kamp Dush, & Johnson, 2017, p. 229). Studies of young nonresidential fathers reveal high levels of undermining between new parents (U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, 2007). In studies of co-residential parents, undermining has been linked to preschoolers' externalizing behavior (Schoppe, Mangelsdorf, & Frosch, 2001). Fathers have also reported lower parenting self-efficacy when they perceive that mothers are undermining them (Merrifield & Gamble, 2013).

To summarize, the available literature suggests that perceptions of coparenting alliance, gatekeeping, conflict, and undermining are key dimensions of coparenting among nonresidential fathers. Although several of these dimensions have been explored in studies of divorced fathers, validated measures have not been developed for low-income non-residential fathers. The present study addresses this research gap.

## CURRENT STUDY

This study addressed recently identified dimensions of perceived coparenting for low-income nonresident fathers that have not been previously covered. To fill this gap, we developed a quantitative measure of perceptions of coparenting among low-income, non-resident fathers. As noted above, evidence suggests that parents' perceptions are important for understanding family processes (Latham, Mark, & Oliver, 2017). Indeed, as family systems theory has long acknowledged (Broderick, 1993), and as research has confirmed (e.g., Dyer et al., 2014), the perceptions of each family member are independently and uniquely related to various aspects of the family system and are, therefore, important to study in their own right.

To measure fathers' perceptions of coparenting we created a Likert-scale based on focus groups with low-income, nonresident fathers (see Measures below). The Likert-scale was given to 542 low-income, nonresident fathers and dimensions of coparenting were examined with exploratory factor analysis (EFA). Once the dimensions were identified, we examined which items could be dropped from the scale without compromising reliability or content validity. Next, we conducted confirmatory factor analysis (CFA) to confirm EFA findings.

After final scales of these dimensions were determined, we conducted convergent and predictive validity tests. Selection of convergent and predictive validity constructs was based on systems theory (which predicts how the coparenting subsystem influences other subsystems) along with previous work confirming such links. For convergent validity, we selected fathers' contact with the mother as well as a measure of fathers' involvement in

decision-making with mothers. Decision-making responsibility (see Fagan, Dyer, Kaufman, & Pearson, 2016) may be considered a structural aspect of coparenting because it involves the degree to which mothers and fathers share responsibility for making decisions about the child's needs (see McHale, Salman, & Coovert, 2015). Fathers' contact with the mother was included to assess convergent validity because research shows that amount of contact between nonresident parents is associated with their coparenting relationship (Amato & Sobolewski, 2004). It is expected that dimensions of coparenting favorable to positive family functioning (e.g., coparenting alliance) will be positively related to these other father-mother constructs. Dimensions of coparenting typically unfavorable to positive family functioning (e.g., undermining behaviors) are expected to be negatively correlated with these. We assessed predictive validity with attitudinal measures of parenting self-efficacy and parenting satisfaction (essential components of parenting self-esteem; Coleman & Karraker, 2003; Johnston & Mash, 1989). Coparenting constructs are theoretically linked with fathers' attitudes about parenting (e.g., parenting satisfaction, self-efficacy; Schoppe-Sullivan, Altenburger, Lee, Bower, & Dush, 2015). Based on research that higher levels of coparenting support are associated with residential fathers' parenting satisfaction (Schoppe-Sullivan et al., 2016), we expected to find a negative association between negative domains of coparenting (e.g., undermining and gatekeeping) and parenting satisfaction and self-efficacy. Child behavior problems were also used as a predictive validity construct given research showing that coparenting influences child wellbeing (Cabrera et al., 2012; for meta-analysis, see Teubert & Pinquart, 2010). Ecological systems theory would also predict such a link given that poor coparenting (mesosystem) likely negatively impacts proximal processes within father-child and mother-child microsystems. Finally, we included measures of fathers' contact with the child, nights spent with the child, and engagement because studies show longitudinal associations between coparenting and aspects of nonresident fathers' involvement (Frank, Keown, & Sanders, 2015).

## VALIDATION STUDY

Items for the perceived coparenting scale were developed from focus groups. The initial version of the scale contained 28 coparenting behaviors. To validate the scale biological fathers were recruited from six northeastern U.S. cities and one southern U.S. city. Recruitment took place across 14 different fatherhood programs ( $n = 216$ ) and various low-income neighborhood communities ( $n = 432$ ) between January and June 2015. Fathers recruited from the community were approached in various neighborhood locations including grocery stores, barber shops, and churches. Fathers were interviewed on the spot if they agreed to participate and met study criteria. To qualify for participation, fathers were required to (1) be at least 18 years of age, and (2) have at least one nonresidential, biological child between the ages of 1 month and 18 years. Trained graduate and undergraduate students administered the questionnaire in the various fatherhood programs and community-based settings. Each student read the survey forms aloud to the participant and filled in each father's response. The students received at least 3 hours of training on the administration procedures of the study, including obtaining informed consent and answering participants' questions (this study was IRB approved). Researchers observed a portion of interviews to ensure accuracy and consistency of administration. Fathers were paid a small incentive (\$30) for their participation. Some fathers ( $n = 96$ ) reported involvement with children with whom they were resident (they were nonresident with other children). An additional 10 fathers indicated they did not reside with their child but that they spent every night or almost every night with the child. To more accurately represent coparenting among nonresident fathers, we omitted these 106 fathers from the current analyses for a sample size of 542.



Most measures required the father to think about a target child. In order to obtain data about children across the developmental spectrum, we attempted to target equal numbers of fathers of infants (ages 0.1–1), toddlers/preschoolers (ages 1.1–5), children in middle childhood (ages 5.1–12), and adolescents (ages 12.1–18). During the first few months of data collection, fathers were asked to think about their youngest child (target child) and this child’s mother when completing the survey. We subsequently asked fathers about the next oldest child. In the latter part of the study, we only recruited fathers with children in the under-represented age groups.

Sample characteristics are presented in Table 1. Approximately 70% of the sample had a high school degree or less and only 33.8% were working a steady job. Most were African American (73.4%) and never married (77%). The average number of biological children was 2.4 with the average age of the target child being 7.87 years old.

### MEASURES

Whenever constructs had multiple indicators, they were modeled as latent variables and exported for use in validity tests. This allows for a minimization of measurement error as items are weighted according to their relationship with the underlying construct. Raykov’s (2012, 2014) method of calculating maximal reliability for latent variables is reported as reliability.

TABLE 1  
*Participant Characteristics (N = 542)*

	%/M (SD)
Father’s age	38.22 (11.40)
<i>Education</i>	
Less than High school	18.8
High school/GED	51.8
Some college	19.7
College degree (2 year or 4 year)	8.8
Graduate degree	1.3
<i>Marital status</i>	
Single, never married	77.1
Married	7.5
Separated	5.3
Divorced	9.2
Widowed	.5
Missing	.2
<i>Employment<sup>a</sup></i>	
Working in a steady job	32.8
Working in a non-steady job	9.0
Unemployed	41.9
Looking for work	42.4
In school/training program	24.5
<i>Children</i>	
Number of biological children	2.40 (3.55)
Age of target child	7.87 (5.70)
<i>Race</i>	
Black, African American	73.8
White	12.2
Other	7.9
Missing	6.01

<sup>a</sup>Participants could select more than one option.

## Perceived Coparenting

Focus groups were conducted to identify perceptions of coparenting alliance, gatekeeping, undermining, and conflict items. As part of the focus group protocol, facilitators prompted participants to consider their interactions with the mother of their child regarding parenting the child. From responses, a list of 28 coparenting relevant behaviors was created. This was made into a five-point scale asking participants the degree to which they agreed or disagreed that an item applied to their coparenting (1 = *strongly disagree*–5 = *strongly agree*). For instance, fathers were asked how much they agreed with the statement: “The mother of my child contradicts the decisions I make about my [Target] child” (for a list of items, see Supporting Information Table S1; see also Fagan & Kaufman, 2015, for a full description of the focus group research framework and results). See Results below for details on factor structure and reliability.

## Convergent validity

For father responsibility, we used the *Decision Making Responsibility Scale*, which was developed and validated for low-income nonresident fathers (Fagan et al., 2016). This nine-item scale contains a three-point response option format: 1 = *the mother of the child (or another adult) always makes the decision*, 2 = *you and the mother of the child (or another adult) share in making the decision*, and 3 = *you always make this decision*. Sample items include: “Who makes decisions about which doctor the ‘target child’ will see?” and “Who makes decisions about how the ‘target child’ will be disciplined?” The latent variable model fit the data well (RMSEA = .05; CFI = .97) and maximal reliability was .85.

To assess the frequency that fathers had *coparenting contact*, fathers were asked “How often do you and the mother of your target child have contact with regards to raising your child?” Response options ranged from 1 = *always* to 5 = *never*.

## Predictive Validity

*Relationship satisfaction* was measured using the three satisfaction items from the NRI-Relationship Qualities Version (NRI-RQV; Furman & Buhrmester, 1985). This scale measures fathers’ satisfaction in their parenting role. Although items had five-point scale responses, the response option in these scales is different. For instance, the scale responses on one item (“How satisfied are you with your relationship with your child?”) ranged from 1 = *not satisfied* to 5 = *extremely satisfied*, and the second item (“How happy are you with the way things are between you and your child?”) ranged from 1 = *not at all happy* to 5 = *extremely happy*. Furman and Buhrmester (2009) found the psychometric properties of the NRI-RQV satisfaction were good. With three items the data fit the model perfectly with a maximal reliability of .91.

The *Nonresident Fathers’ Parenting Self-Efficacy Scale* served as a measure of how competent fathers feel in their role as a parent. This scale was developed specifically for this project and was derived from the focus groups mentioned above. This measure includes several items not included in other measures of self-efficacy (e.g., “I am good at keeping my promises to my child”). The scale includes seven items in which participants were asked to rate how strongly they agree with statements such as, “I am good at helping my child when he/she is upset or distressed.” Responses were rated on a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*. The latent variable model fit the data well (RMSEA = .04; CFI = .99) with good maximal reliability (.90). Given that no previous validity work has been done on this scale, results regarding this scale should be taken with caution.

The 28-item *Behavior Problem Index* (Peterson & Zill, 1986) was used with fathers of target children older than 3 years of age (Yeung, Linver, & Brooks-Gunn, 2002). These questions ask about specific internalizing and externalizing behaviors that children may have exhibited in the previous 3 months rated on a three-point scale: *often*, *sometimes*, or *never*. Sample items include: “He/she cheats or lies” and “He/she clings to adults.” The latent variable model fit the data well (RMSEA = .045, CFI = .962). This model fit the data best when specifying indicators as ordinal in Mplus. Given that the calculations for maximal reliability are not available for such a specification, we simply report the Cronbach’s alpha which was .89.

In order to assess the frequency of *father–child contact*, participants were asked: “In the past month how often did you have face-to-face, in-person contact with your target child on average?” Response options ranged from: 1 = *every day or nearly every day* to 7 = *not at all*.

Fathers also reported on the *number of nights* they spent in the same home with the child. Fathers were asked to fill out a calendar indicating which specific dates of the 30 days preceding the interview the father had spent the night in the same residence with his target child.

Four separate versions of the *Fatherhood Research and Practice Network Father Engagement Scale* were designed to assess fathers’ engagement with their children at different ages (see Dyer, Kaufman, Fagan, & Cabrera, 2017, for validity information). CFA was used to create scales for each of the groups. The first version (11 items) was designed for use with fathers of children between 1 month old and 1 year old ( $n = 98$ ; maximal reliability = .96); the second version (10 items) was designed for use with fathers of children between 1 year, 1 month old and 6 years ( $n = 143$ ; maximal reliability = .98); the third version (nine items) was designed for use with fathers of children between 6 years, 1 month old and 12 years old ( $n = 121$ ; maximal reliability = .96); the final version (11 item) was designed for use with fathers of children between 12 years, 1 month old and 19 years old ( $n = 182$ ; maximal reliability = .96). Sample items for the infant scale include: “How often have you hugged the child?” and “How often have you sung to the child?” Response options across the four versions ranged from 1 = *never* to 5 = *ever day or almost every day*.

## ANALYSIS PLAN

Exploratory (EFA) and confirmatory (CFA) factor analyses were used to identify and validate factors. To avoid capitalizing on chance, sample-specific characteristics (Brown, 2015), we created two subsamples from the overall sample by randomly dividing the full sample into two relatively equal samples (Subsample 1:  $n = 273$ ; Subsample 2:  $n = 269$ ).

All EFA and CFA models were fit with Mplus 7.4 using FIML to handle missing data. The amount of missing data for the coparenting items was minimal, ranging from 3% to 8%. The EFA was conducted on Subsample 1 to determine the number of factors and to obtain an initial sense of the factor structures. Since responses were somewhat skewed across response categories, we used the MLR estimator given that it is robust to nonnormal data. For EFA, we used the oblique Geomin (OB) rotation (the Mplus default) because it was developed to allow for complex factors and provide an interpretable pattern matrix (Yates, 1987). After determining the number of factors, EFA factor structures were examined for their conceptual meaning. Items that loaded above .40 were considered part of a factor. However, we also examined whether items were conceptually consistent. That is, although an item may have loaded above .40, if it created conceptual ambiguity in the factor, it was not retained.

After items within each factor were determined (items that loaded above .40 and items that were conceptually consistent), we fit a CFA model still using Subsample 1 to



determine if factor structures derived in EFA had good fit. Once good fit was determined for the CFA model, we employed a process of optimal scale shortening. Two criteria determined whether to eliminate an item: (1) its reliability, and (2) whether it addressed an important and unique aspect of the construct (i.e., was vital for content validity). The “maximal reliability” (MR) of the factor and the ratios of squared loadings to error variances (RSLs; an indicator of item reliability) were used to examine the contribution of each item to the scale’s reliability (see Raykov, 2012, 2014; Raykov, Rodenberg, & Narayanan, 2015). For this procedure, a CFA is fit for the scale and the MR examined. Then, RSLs are calculated with their 95% confidence intervals. Items with the lowest RSLs are eliminated first and MR is again examined. Raykov recommends determining a threshold MR for the scale that, in the process of eliminating items, one should not allow the lower bound 95% confidence interval to go below (.80 was determined for this study). Although this statistical criterion is important, an item with a low RSL was not automatically cut. An item was retained if it represented a conceptual aspect of coparenting that would be lost if the item was removed (i.e., compromised content validity). Once a reduced item scale was determined, we fit that model to Subsample 2 to examine whether it fit the data. As a further test, we used the nonreduced scales and conducted the same item reduction procedure on Subsample 2 as we did on Subsample 1.

Model fit was examined in both EFA and CFA analyses indicating how well the factors fit the data. Fit indices included the RMSEA ( $<.06$  for good model fit), the CFI ( $>.95$  for good model fit), and SRMR ( $<.08$  for good model fit; Hu & Bentler, 1999). Little (2013) also provides rules of thumb for the CFI and RMSEA which are somewhat more generous (CFI:  $<.85$  is poor fit,  $.85-.90$  is mediocre,  $>.90$  is acceptable; RMSEA:  $>.10$  is poor,  $.10-.08$  is mediocre,  $<.08$  is acceptable). Due to some skewness in the data, the robust maximum likelihood estimator was used which is robust to nonnormality in the data. For convergent and predictive validity analyses, the full sample was used ( $n = 542$ ). For each of the coparenting domains, a CFA of the final scale was fit and then the factor score was exported to be used in regressions. To determine validity, correlations between coparenting factors and the validity constructs were first examined. Then, to examine the unique relationship of each factor with the convergent and predictive validity constructs, regression models were fit with each of the coparenting constructs included as independent variables along with controls for the father’s race, employment, income, age, and education. We also examined whether the convergent and predictive validity of the coparenting domains varied by the amount of father–child contact. For instance, the relationship between coparenting and the validity measures may be attenuated for fathers who have little to no contact with their children. All regressions were conducted in Stata 14 using multiple imputation (50 imputations) to handle missing data (the ICE command; Royston, 2005).

## RESULTS

### Perceived Coparenting EFA Results

In EFA analyses, six factors had eigenvalues above 1.00. Viewing the scree plot, there is a distinct bend at three factors. In reviewing the factor solutions, the five- and six-factor solutions produced some factors with only one or two items loading above .40, indicating these solutions produced factors with little reliability. The three- and four-factor solutions were then compared. The additional factor in the four-factor solution (compared to the three-factor solution) represented substantial hostility in the coparenting relationship including items such as “saying mean things” and becoming “physically violent” to each other. In the three-factor solution, these items were included in the factor that had other,

though less hostile, forms of undermining. We, therefore, determined to keep the more hostile form of coparenting conflict as a separate construct, and made the four-factor solution our final model. This model had acceptable to good fit (RMSEA = .068; CFI = .901; SRMR = .04;  $\chi^2(df) = 778.81(347)$ ). See Table S1 in “Supporting Information” for item loadings (those above .40).

The first factor was labeled “undermining.” This contained behaviors such as the mother contradicting the father, undermining the father, or making negative comments about the father. This factor also contained two items about mother and father having differing beliefs about parenting. The items regarding beliefs were removed to create a factor focusing on coparenting *behaviors* (see the discussion for additional rationale). An item regarding physical violence was also removed (loading of .48) since, compared to the other behaviors in the factor, it represents a conceptually different kind of undermining behavior (i.e., violence). Further, this item loaded more highly on another factor.

The second factor was labeled “alliance.” This contained behaviors such as the father and mother discussing how to meet the child’s needs, them sharing information about the child with each other, and the mother eliciting the father’s opinions. Again, we chose for this factor to focus on parental actions rather than attitudes and removed two items regarding parents having similar goals and expectations (loadings of .66 and .63 for those items).

The third factor was labeled “gatekeeping.” This factor represents specific actions the mother takes to restrict the father’s access to the child. These include making it difficult to talk to or see the child, and directing the child about what he/she is allowed to say to the father. One item regarding conflict was eliminated since it appeared to represent something conceptually different from these specific maternal actions.

The fourth factor represented high conflict. This included four items: two regarding the father and mother saying mean things to each other, and two regarding the father and mother becoming physically violent with each other.

## Scale Modification

After eliminating items for conceptual reasons (see above), factors outlined in Table S1 were fit as CFA models with RSLs calculated to determine which items may be eliminated. These initial CFAs were conducted using Sample 1 (the sample also used for EFA). The CFA of undermining had good model fit (RMSEA = .043, CFI = 1.00, SRMR = .011) and good maximal reliability (MR = .96). Of the four items, the mother liking to do the easy parts of parenting had the lowest RSL and was also less conceptually consonant with the other items which focus on specific things the mother does to undermine the father. After eliminating this item, the lower bound of maximal reliability was .81, within the predetermined threshold. The three-item factor was accepted as the final model and, with no degrees of freedom, the model fit the data perfectly.

Confirmatory factor analysis of the initial 11 items in the alliance factor found mediocre to acceptable model fit (RMSEA = .079, CFI = .95, SRMR = .033) with good MR (.96). Within this CFA, six items had relatively low RSLs. In examining these six items, they did not appear to cover a conceptually unique area not already covered by the other five items (e.g., one item involved the parents eliciting each other’s opinions; however, items with greater RSLs covered the parents sharing information). In removing the six items, the MR remained quite high (.94 with a lower bound of .92). We, therefore, removed these items for a final measure with five items. The CFI and SRMR of the final CFA model indicated a good model fit (CFI = .97, SRMR = .023), however, the RMSEA indicated a less than ideal fit (RMSEA = .094). In examining the items, it was determined to correlate the errors of two related items (items relating to “understanding” and “respecting” each other). The

correlation was significant and the RMSEA was reduced to .000. We examine this further in CFA analyses with Sample 2 (see below).

Since the gatekeeping CFA contained three items, all items were retained. With only three items, the model fit the data perfectly with a good maximum reliability (.97).

Confirmatory factor analysis of the conflict factor revealed some problematic aspects. First, it had lower than acceptable lower bound reliability (.79) and the RMSEA indicated a poor model fit (.108). One item, father's physical violence toward the mother, loaded at .355. This item also had the lowest RSL. Eliminating this item dropped reliability further. In addition, concerns about men reporting their own violence arose when it was observed that while 203 men reported that the *mother* became physically violent, only 14 reported *they* became violent. This reporting of one-sided violence suggests what other researchers have found: Men typically underreport their own aggression (Stets & Straus, 1989; Straus & Sweet, 1992). Thus, it is not surprising that questions regarding high degrees of conflict (including physical) in the coparenting relationship are less reliable. Given the low reliability and probable bias in this construct, we determined this construct should not be used and do not include it in our convergent and predictive validity tests.

The item reduction procedure was carried out on Sample 2 with substantively identical results (i.e., items of the final model were identical to those obtained in Sample 1). Table 2 contains the final factor loadings for each scale across both samples along with model fit. Regarding loadings, the largest difference between Sample 1 and 2 is for item 1 of the conflict factor. Though, again, this factor is not recommended. In the alliance factor for Sample 1 we found optimal fit when correlating the "understand" and "respect" items, however, for Sample 2, the correlation between the two was nonsignificant and the model fit extremely well without correlating these items (CFI = 1.00; RMSEA = .000). For conceptual reasons, these items should be correlated, though when non-significant, for parsimony's sake, they may be uncorrelated.

A model including all factors (undermining, alliance, and gatekeeping) was also fit. Latent variables were allowed to correlate but errors of the indicators were not allowed to correlate. For both Sample 1 and 2, data fit the model well (Sample 1: CFI = .97, RMSEA = .060; Sample 2: CFI = .97, RMSEA = .063).

It was also examined whether the model fit better with a single versus multiple factors (given that results were substantively the same when using Sample 1 or Sample 2, we simply report analyses using the full sample). We, therefore, fit a model with undermining, alliance, and gatekeeping as separate factors with no correlations between error terms but correlating latent variables. This model fit the data well (CFI = .975; RMSEA = .055). A model was fit with all items loading on the same factor resulting in very poor model fit (CFI = .736; RMSEA = .172) with a significant decrease in  $\chi^2$  ( $\Delta\chi^2(df) = 384.709(3)$ ,  $p < .001$ ). Another model was fit combining the items of the two factors with the highest correlations—gatekeeping and undermining. It also resulted in a much poorer fit (CFI = .900; RMSEA = .107) and a significant drop in  $\chi^2$  ( $\Delta\chi^2(df) = 340.550(2)$ ,  $p < .001$ ). This provides evidence for a three-factor model.

## Correlations

Table 3 contains correlations between perceived coparenting factors (see EFA and CFA results), validity constructs, and demographics. Coparenting factors were not related to father background characteristics except unemployment. Alliance was negatively correlated with unemployment and undermining and gatekeeping were positively correlated with unemployment. See below for a description of correlations between coparenting factors and validity constructs.

TABLE 2  
*Final Reduced Scales*

Construct and items	Sample 1 Standardized loadings	Sample 2 Standardized loadings
<i>Undermining</i>		
MOC contradicts the decisions I make about my youngest child.	.771	.756
MOC makes negative comments, jokes, or sarcastic comments about the way I am.	.829	.806
MOC undermines me as a father.	.834	.830
<i>Reliability and Model Fit: Mean Maximal Reliability/CFI/RMSEA</i>	.86/1.00/.000	.84/1.00/.000
<i>Alliance</i>		
MOC and I discuss the best way to meet our youngest child's needs.	.918	.930
MOC and I share information about the youngest child with each other.	.864	.892
MOC and I make joint decisions about our youngest child.	.903	.844
MOC and I try to understand where each other is coming from.	.802	.820
MOC and I respect each other's decisions made about our youngest child.	.844	.777
<i>Reliability and Model Fit: Mean Maximal Reliability / CFI / RMSEA</i>	.94 / .97 / .094	.94 / 1.00 / .000
<i>Gatekeeping</i>		
MOC makes it hard for me to talk with my youngest child.	.985	.993
MOC makes it hard for me to spend time with my youngest child.	.900	.848
MOC tells my youngest child what he/she is allowed and not allowed to say to me.	.629	.611
<i>Reliability and Model Fit: Mean Maximal Reliability / CFI / RMSEA</i>	.97 / 1.00 / .000	.99 / 1.00 / .000
<i>Conflict</i>		
I say mean things to the MOC when we can't get along in our roles as parents.	.807	.639
MOC says mean things to me when we can't get along in our roles as parents.	.622	.529
MOC gets physically violent to me when we can't get along in our roles as parents.	.782	.850
MOC and I argue about who should make decisions about our youngest child.	.716	.705
<i>Reliability and Model Fit: Mean Maximal Reliability / CFI / RMSEA</i>	.84 / .99 / .057	.82 / .983 / .072
<i>Full Model with Undermining, Alliance, and Gatekeeping</i>		
CFI / RMSEA	.97 / .060	.97 / .063

*Note.* MOC = Mother of child.

**Convergent and predictive validity**

At the correlation level (see Table 4), perceived undermining, alliance, and gatekeeping demonstrated validity with virtually all convergent and predictive constructs except for engagement with children ages 1–5 and 6–12. We also examined validity with the three coparenting domains included in the same regression model. That is, it was important to

TABLE 3  
Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Undermining	1																		
2. Alliance	-.58*	1																	
3. Gatekeeping	.64*	-.62*	1																
4. Responsibility	-.25*	.39*	-.31*	1															
5. Contact with Mother	.27*	-.58*	.38*	-.37*	1														
6. Father Self-Efficacy	-.20*	.37*	-.28*	.48*	-.31*	1													
7. Parental Satisfaction	-.30*	.41*	-.40*	.52*	-.42*	.61*	1												
8. BPI	.43*	-.20*	.19*	-.17*	.11*	-.18*	-.16*	1											
9. Father-child contact	-.17*	.28*	-.33*	.42*	-.35*	.34*	.51*	-.11*	1										
10. Nights spent with child	-.14*	.21*	-.26*	.33*	-.21*	.30*	.36*	-.11*	.58*	1									
11. Engagement, Infants	-.18*	.48*	-.35*	.36*	-.38*	.39*	.54*	-.12*	.85*	.54*	1								
12. Engagement, ages 1–5	-.02	.14*	-.24*	.37*	-.06	.18*	.34*	-.13*	.67*	.65*	.50*	1							
13. Engagement, ages 5–12	-.18*	.30*	-.25*	.43*	-.38*	.27*	.42*	-.05	.81*	.70*	.72*	.64*	1						
14. Engagement, ages 13–18	-.19*	.28*	-.31*	.49*	-.37*	.35*	.53*	-.10*	.80*	.66*	.69*	.44*	.78*	1					
15. Father income	-.00	.07	-.02	.11*	-.03	.15*	.12*	-.02	.09*	.15*	.16*	.14*	.02	.08	1				
16. Father unemployed	.12*	-.09*	.12*	-.10*	.04	-.13*	-.13*	.21*	-.10*	-.12*	-.00	-.12*	-.15*	-.05	-.31*	1			
17. Father Black	.00	.04	-.07	.09*	-.10*	.06	.12*	.02	.18*	.11*	.19*	.08	.13*	.11*	-.03	-.02	1		
18. Father education	-.01	-.02	.05	-.02	-.02	.02	.00	.09*	-.01	.13*	.04	.07	-.02	.02	.39*	-.12*	.04	1	
19. Father age	-.06	-.08	.03	-.17*	.10*	-.09*	-.14	-.05	-.25*	-.24*	-.24*	-.24*	-.32*	.05	-.03	-.12*	-.06	.15*	1
Mean	.00	.00	.00	.00	2.23	.00	.00	.03	2.09	2.25	.00	.00	.00	.00	2.91	.57	.78	2.28	38.09
Standard Deviation	.93	.97	.99	.39	1.26	.64	1.14	.60	.84	1.72	1.12	.97	.97	.99	2.22	.50	.41	1.04	11.17

Note. \* $p < .05$ .



TABLE 4  
*Perceptions of Coparenting: Convergent and Predictive Validity Results*

Validity items	Undermining <i>b</i> ( <i>SE</i> ) $\beta$	Alliance <i>b</i> ( <i>SE</i> ) $\beta$	Gatekeeping <i>b</i> ( <i>SE</i> ) $\beta$
<i>Convergent</i>			
Decision making responsibility	-.01 (.02) -.02	.11 (.02)*** .28	-.04 (.02) -.10
Contact w/ Mother	.15(.07)* .11	.74 (.07)*** .57	-.15 (.07)* -.12
<i>Predictive</i>			
Self-efficacy	-.02 (.08) -.02	.21 (.04)*** .32	-.07 (.04) -.11
Satisfaction w/ Paternal role	-.01 (.06) -.01	.31 (.06)*** .26	-.23 (.06)*** -.20
Child behavior problems (BPI)	.20 (.06)** .33	-.05 (.06) -.07	-.06 (.06) -.11
Contact w/ Child	.08 (.05) .09	.11 (.04)* .12	-.23 (.05)*** -.27
Nights spent w/ Child	.09 (.10) .05	.12 (.09) .07	-.39 (.10)*** -.23
Engagement w/ Infants ( <i>n</i> = 98)	.21 (.14) .18	.53 (.14)*** .40	-.44 (.13)*** -.37
Engagement w/ Children 1–5 years ( <i>n</i> = 143)	.15 (.12) .14	.08 (.11) .07	-.28 (.12)* -.27
Engagement w/ Children 6–12 years ( <i>n</i> = 121)	.07 (.14) .07	.08 (.15) .07	-.16 (.15) -.16
Engagement w/ Children 13–18 years ( <i>n</i> = 182)	.03 (.10) .03	.16 (.09) .17	-.16 (.09) -.17

*Notes.* Controlling for father income, employment, race, education, and age.  
Results for undermining, alliance, and gatekeeping reflect a single regression including all of these.  
Unless otherwise indicated, *N* = 452.  
\**p* < .05, \*\**p* < .01, \*\*\**p* < .001.

determine whether the individual domains predicted any variance above and beyond what the other domains predicted (while also controlling for background factors).

Each convergent validity construct was related to at least one of the coparenting constructs (undermining, alliance, or gatekeeping). Alliance demonstrated unique relationships with both convergent validity constructs (decision-making and contact with the mother) with gatekeeping only related to contact with the mother. Each of these relationships was in the expected direction. Undermining was only related to contact with the mother, though it was in the unexpected direction (the greater the undermining the greater the contact). It may be that the variance in contact related to the quality of the coparenting relationship is already accounted for by coparental alliance. What is “left over” for undermining to predict is simply due to the fact that the more contact the father and mother have, the more opportunities there are for undermining, independent of relationship quality (i.e., controlling for alliance). This was examined in two follow-up regressions. In the first regression, mother–father contact was regressed on undermining resulting in a negative relationship between the two. In the second regression, alliance was added and the relationship between contact and undermining flipped to become positive (variance of inflation factors did not indicate any multicollinearity).

For predictive validity, alliance was related to four of the nine constructs (parental satisfaction, self-efficacy, contact with the child, and engagement with infants) and gatekeeping was related to five of them (satisfaction, contact with the child, nights spent with the child, and engagement with infants and children ages 1–5). Undermining was only related to one of the nine constructs, the BPI. All of these relationships were in the hypothesized direction. Except for father engagement with children ages 6–12 and 13–18, all other predictive validity constructs were related to at least one of the coparenting scales. Taken together, only two of the 11 convergent and predictive validity constructs were not related to at least one of the three domains measured by the 11-item scale.

*Interactions with amount of contact*

In all validity analyses, we examined whether the amount of father–child contact moderated the relationship between the coparenting domain and the validity construct.

Amount of contact did not moderate the relationship between undermining or gatekeeping and validity constructs, but did moderate the relationship between alliance and adolescent engagement ( $b(SE) = .16(.07)$ ,  $p < .05$ ), contact with mother ( $b(SE) = .21(.08)$ ,  $p < .01$ ), father self-efficacy ( $b(SE) = -.24(.07)$ ,  $p < .001$ ), and father satisfaction ( $b(SE) = -.15(.04)$ ,  $p < .001$ ). Standardized values of all significant interactions are graphed in Figures S1–S4.

## DISCUSSION

The purpose of this paper was to develop a measure of low-income, nonresident fathers' perceptions of coparenting that covered coparenting dimensions lacking in current measures. Based on EFA of items derived from focus groups, four domains emerged: perceived undermining, perceived alliance, perceived gatekeeping, and perceived conflict. Although the conflict domain was problematic (statistically unreliable and likely influenced by reporter bias), the other three domains had good reliability and conceptual distinction.

Convergent validity results reinforce research findings predicted by family systems theory that coparenting and individual and parenting constructs are interrelated (see Mangelsdorf et al., 2011). This was particularly true for alliance, which was connected to both convergent validity constructs. Even though its exact role in decision-making and contact with mother are not examined in the current analyses, these significant relationships are evidence that the new alliance scale has the theorized interconnections with these constructs. Further, undermining and gatekeeping had significant associations with one convergent validity construct over and above alliance. This provides support for the notion that coparenting is not a monolithic concept, but rather has various dimensions independently related to aspects of the nonresident mother–father system. Further, the overall coparenting scale showed excellent predictive validity as at least one of the coparenting domains was related to each predictive validity construct except for engagement with older children (see below for discussion).

For predictive validity, alliance and gatekeeping were related to a substantial number of constructs, and the direction of these effects was as we predicted. Undermining was uniquely related to child behavior problems. This indicates that undermining is likely tapping into certain more conflictual parenting behaviors that may influence the child's well-being. Indeed, parental conflict has long been associated with negative child outcomes (Cummings & Davies, 2011). It may be argued that because it was only related to one convergent and one predictive validity construct, undermining overlaps with alliance and gatekeeping to such a degree that its inclusion is not warranted. This may be the case when examining father–mother and father–child relationships. However, coparenting researchers and practitioners are often interested in how coparenting affects the child. Although alliance and gatekeeping are plausibly related to child outcomes indirectly through other aspects of the father–mother and father–child systems, as was found here, undermining may have a direct effect. Thus, for questions of child outcomes, undermining is likely an important dimension to capture.

It is interesting that no coparenting domain was related to engagement with older children and adolescents. This may be explained by a central principle of family systems theory: Families are open and ongoing (Broderick, 1993). The differential relationship between coparenting and engagement may reflect a change in the father–child subsystem such that the influence of coparenting and the father–mother subsystem is altered as children age. The changing relationship between coparenting and engagement also connects with Bronfenbrenner's (1999) assertion that the developmental stage of the child can moderate the relationship between proximal processes and development. Indeed, coparenting a younger child is a different context from coparenting an older child who can assert their

independence to a greater extent. This may also reflect that some nonresident fathers' connection with their children wanes across time (though Cheadle, Amato, and King [2010] found only 23% of nonresident fathers declined in contact). Although we do not know how long participants had not resided with their children (this was an aspect not captured in the data) it would be expected that, on average, the older the children are, the more time the father would have spent not residing with the child. Taken together, this has important implications for coparenting research. That is, one must pay attention to the child's developmental stage when examining the father-child subsystem. Examining only the coparenting subsystem will likely miss important variation in coparenting's effects.

Moderation analyses helped clarify this further. When an aspect of the father-child subsystem was taken into account (i.e., amount of contact), it was found that at higher levels of contact, alliance was significantly related to engagement with adolescents. As children enter adolescence, the amount of contact fathers have with them may become more dependent on what the *child* wants. At earlier ages, contact is likely arranged by the mother and father (less input from the child) and thus the coparenting relationship is primary in father engagement. However, as the child ages and they may begin to select to have more or less contact with the father, coparenting has less of an influence. Thus, although the effects of coparenting during adolescence have been explored (see McHale & Irace, 2011), the moderating role of the changing father-child relationship on the influence of coparenting has not been examined.

The several significant interactions illustrate family systems and ecological systems perspectives in that it is important to understand the overall context in which coparenting is happening. In the graphs and calculations of the simple slopes (see Figures S1–S4), the interactions did not seem to be substantial for father satisfaction and contact with mother. In contrast, for father self-efficacy, when father-child contact was one standard deviation below the mean, the relationship between alliance and self-efficacy became significant while it was not significant at one standard deviation above the mean. Alliance not being related to self-efficacy when father contact is higher may be due to a ceiling effect. As seen in Figure S2, fathers who have high contact with the child already feel substantial efficacy in their relationship and therefore have nowhere to “grow” when alliance is higher. However, for fathers with low contact, alliance with the mother may be critical to the father feeling validated in his role.

Finally, it may be of some importance that father employment was related to coparenting. For unemployed fathers, levels of alliance are lower and undermining and gatekeeping were higher. For some mothers, employment (and likely providing financially) may be an important prerequisite for them working cooperatively with the father. Another possibility is that employment is acting as a proxy for fathers who are more stable. Fathers who display stability may encourage mothers to have more positive coparenting relationships with them. Additional research with nonresident populations should further explore this link.

## Limitations

One aspect of coparenting that deserves further attention is the father's relationship history. Fathers who have been married multiple times, have multi-partner fertility, and/or who have multiple cohabitations are likely to have more difficulties connecting with the mother of the child as well as the child (Carlson & Furstenberg, 2006). These patterns likely influence levels of coparenting and may also serve as moderators of the effect of coparenting on outcomes.

Another limitation is that this measure was created specifically for fathers. Had the same study been conducted with mothers of children whose father was nonresident, it is

possible that other domains and behaviors would have emerged. Additional reliability and validation work will be needed to determine this measure's applicability to mothers. Moreover, our measure focuses on nonresident fathers' perception of coparenting. Future research should examine the extent to which perceptions of coparenting and observer ratings of coparenting are correlated.

It is important that alliance was, in several instances, moderated by the amount of contact the father had with the child. Indeed, its validity may be tied to the amount of contact. Although this is not necessarily a limitation (likely due to the nature of nonresident coparenting), using alliance may necessitate the extra step of examining the possible moderating effect of the amount of contact.

## CONCLUSION

The coparenting relationship is a key factor in the degree to which fathers are able to engage with and have a positive impact on their children. This is particularly the case when fathers do not reside with their children. However, to this point, there have been no measures of coparenting designed specifically for this group. Taken as a whole, this 11-item measure of nonresident fathers' perceptions of coparenting was related to a substantial number of validity constructs (both convergent and predictive), and has three conceptually distinct domains: undermining, alliance, and gatekeeping. Validity tests support the family systems perspective in that the three coparenting domains were, in total, related to all but one of the convergent and predictive validity measures which included father attributes as well as other family subsystems (this is particularly the case when including an index of the father-child subsystem; i.e., contact). This measure provides an important first step in enabling scholars and programs to better understand the coparenting relationships of nonresident fathers and assist in developing theories and methods to help father-child relationships flourish.

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## SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

**Table S1.** Four Factor Exploratory Factor Solution with Loadings

**Figure S1.** Interaction between Perceived Alliance and Father Contact Predicting Engagement with Adolescents (Standardized Values). P-values Refer to Simple Slopes

**Figure S2.** Interaction between Perceived Alliance and Father Contact Predicting Father Self-efficacy. P-values Refer to Simple Slopes

**Figure S3.** Interaction between Perceived Alliance and Father Contact Predicting Father Satisfaction. P-values Refer to Simple Slopes

**Figure S4.** Interaction between Perceived Alliance and Father Contact with Child Predicting Father-Mother Contact. P-values Refer to Simple Slopes

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