

How socialization goals and peer social climate predict young children's concern for others: Evidence for a development shift between 2 and 4 years of age

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Abstract

Children's concern for others is shaped through socialization, but current theories make different predictions as to how and when in development this socializing occurs. Here we found that mothers' prosocial socialization goals (SGs) predicted concern for others in 2-year-old ($n = 804$) and 4-year-old ($n = 714$) children. In contrast, preschool teachers' SGs predicted concern for others only for 4-year-old children. In addition, a positive social climate among classroom peers predicted 4-year-olds' prosociality. These results suggest that the nuclear family environment impacts toddlers' concern for others before the broader social environment shapes their prosociality at preschool age.

KEYWORDS

peer effects, preschool, prosocial development, socialization goals

1 | INTRODUCTION

Prosociality pervades early childhood. Young children respond to others' instrumental, emotional, and material needs through means of helping, sharing, and comforting (Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011). The early ontogenetic emergence of prosociality suggests a biological adaptation to seeing others in need. However, how and when in development socialization shapes early prosocial behavior lies at the center of ongoing debates.

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According to the biological altruism account children's prosocial behavior is based on an underlying concern for others that is present during the first two years of life (Warneken & Tomasello, 2009a, 2009b). At ages 3 and 4 years, children's helping behavior increasingly is shaped through socialization. Alternatively, the social constructivism account emphasizes that socialization not only shapes prosocial behavior, it fundamentally gives rise to it (Brownell & Lab, 2016). Accordingly, socialization drives prosociality from birth, and the effects of socialization on children's helping behavior are visible well before the age of three (Brownell & Lab, 2016; Dahl, 2015, 2018; Hammond & Carpendale, 2015). Although the majority of research has focused on family socialization, little empirical work has addressed the role of early childhood educators or preschool peers in the development of children's prosocial behavior. Therefore, the current study seeks to address the unique contributions of mothers, early childhood educators, and preschool peers as three major agents of socialization during the theoretically proposed critical ontogenetic period.

1.1 | The role of socialization during toddlerhood and the early preschool years

Already young children show a characteristic emotional response to seeing others in need of help and this so-called concern for others' well-being is predictive of children's prosocial behavior (Eisenberg, 2000; Hoffman, 1981). In infants as young as 10 months of age this emotional response includes the furrowing of brows and a sad facial expression. This empathic concern is displayed not only toward parents or siblings but extends toward adult strangers (Davidov, Zahn-Waxler, Roth-Hanania, & Knafo, 2013). The greater children's expressed and felt concern, the more likely and faster they are to comfort and console others in need (Eisenberg & Miller, 1987; Miller, Eisenberg, Fabes, & Shell, 1996; Vaish, Carpenter, & Tomasello, 2009). This emotional, empathic concern for others also predicts helping across development (Davidov et al., 2013; Grossmann, Missana, & Krol, 2018; Roth-Hanania, Zahn-Waxler, & Davidov, 2011). Both twin studies and—with smaller heritability estimates—genome wide association studies have documented the early ontogenetic emergence of children's concern for others to be a biological adaptation to seeing others in need (Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008; see Israel, Hasenfratz, & Knafo-Noam, 2015, for a review). Young children thus are motivated intrinsically to see others get the help they need (Hepach, Vaish, & Tomasello, 2012; Warneken & Tomasello, 2008). In addition, young children help others even if the help is not requested (Warneken, 2013) or anonymous (Hepach, Haberl, Lambert, & Tomasello, 2017) and children's instrumental helping toward strangers is not contingent on being praised for helping (Warneken & Tomasello, 2008) or parental encouragement (Warneken & Tomasello, 2013).

Helping behavior both has been documented in very young children as well as in other Great Ape species which raised the question of what unique contribution human culture makes in giving rise to children's prosociality (Warneken & Tomasello, 2009a, 2009b). In fact, children begin to help others right around the same age in various cultures giving further credit to the idea that the emergence of young children's prosocial behavior is not contingent on specific cultural practices (Callaghan & Corbit, 2018; Callaghan et al., 2011; see also Aime, Broesch, Aknin, & Warneken, 2017). Accordingly, culture and socialization exert greater influence on children's prosocial behavior during the third and fourth year, a period in which children undergo the so-called "normative turn" (Tomasello, 2019, p. 317). Children's increasing concerns of and sensitivity to norms and how others may judge their actions begin to influence not so much *whether* children show concern for others but *how* this concern can be best expressed in culture-specific ways. To summarize the biological altruism account, children's prosocial behavior is based on a concern for others that develops during the first two years of life. At ages 3 and 4 years, children's emotional response to others in need and consequently their helping behavior is shaped through socialization.

Alternatively, the social constructivist account of young children's helping behavior emphasizes that socialization not only shapes the behavior, it fundamentally gives rise to it (Brownell & Lab, 2016; Callaghan & Corbit, 2018; Callaghan et al., 2011; Dahl, 2015; Giner Torrens & Kärtner, 2017b; Köster, Cavalcante, Vera Cruz de Carvalho, Dôgo Resende, & Kärtner, 2016). Children's emotional response to others in need notwithstanding,

it is enculturation that determines whether and how children help. In contrast to biological altruism, the social-constructivism account posits that concern for others may be present in the second year of life but it follows from participatory motivations in the first year of life. Through participating in adult (household) tasks without necessarily helpful intent, children's concern for others becomes socialized in the first two years of life. Children's helping thus emerges from socialization practices at home through means of approval, scaffolding, and praise (Brownell & Lab, 2016; Dahl, 2015; Hastings, Utendale, & Sullivan, 2007; Kärtner, 2018; Köster et al., 2016; Rheingold, 1982). Crucially, socialization is a bidirectional process where the child interacts with her social environment (Feldman, 2007). Children's reciprocal exchanges with their caregivers, specifically the synchrony of mental state and affect sharing, are predictive of later socio-emotional development (Feldman, Greenbaum, & Yirmiya, 1999; Levy, Goldstein, & Feldman, 2019; see also Cirelli, 2018). This research documents how child-caregiver interactions shape children's emotions and social cognition as early as infancy thus acting as a precursor to the kinds of prosocial behaviors that become more evident in the second year of life (see Feldman, 2007; Köster & Kärtner, 2019, for reviews).

From the second year of life, children's helping is based on an underlying motivation to interact with others. In support of this claim, parents report that their children engage in many behaviors which are, in fact, unhelpful (Hammond & Brownell, 2018). Parents reward their child's intention to help, and the degree to which parents praise and reward helping predicts how much children help at age 13 to 15 months and 19 to 24 months, though the former may be the more sensitive period for parental scaffolding of children's helping behavior (Dahl et al., 2017). This social-constructivism account places emphasis on the fact that parents, and the child's nuclear family more generally, scaffold and socialize children's helping. Most research regarding the socialization of early prosocial behavior has focused on the role of maternal sensitivity, scaffolding, and talk about the emotional states of others. For example, the degree of maternal scaffolding in a clean-up task explained about 20% of individual differences in 18- to 24-month-old infants' helping toward an experimenter after controlling for children's sociability (Hammond & Carpendale, 2015). For the same age group, parents' elicitation of emotion-related talk was related with toddlers' sharing and helping (Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013; Newton, Thompson, & Goodman, 2016).

Crucially, it has been suggested that parental socialization *practices*, including praising, rewarding, emotion-related talk, and scaffolding may themselves be guided by broader socialization *goals* (Dahl, 2018; Köster & Kärtner, 2019). Socialization goals provide a normative framework of beliefs about what constitutes effective child rearing, thus, giving rise to differences in the manifestation of particular parenting practices (Keller et al., 2006). More specifically, Kärtner, Keller, and Chaudhary (2010) argued that emphasis on particular socialization goals leads parents to adopt parenting strategies that require and encourage prosocial behavior from their children. Cross-cultural evidence suggests that emphasis on different socialization goals in Western and non-Western cultures is associated with early prosocial behavior (Kärtner et al., 2010). One recent study investigated cross-cultural differences in 18-month-olds' helping behavior and the relation between parents' socialization goals and practices and toddlers' helping behavior (Giner Torrens & Kärtner, 2017b). These authors found differences in valuing of hierarchical socialization goals (related to obedience) between mothers from India and Germany, but no cross-cultural differences for autonomous and prosocial socialization goals. Furthermore, punitive parenting practices were associated positively with toddlers' helping in the Indian sample, but associated negatively with helping in the German sample. This suggests that the patterns through which parental socialization goals relate to young children's prosociality may vary across different cultural backgrounds.

Taken together, previous work on adult socialization of children's helping has thus far been focused almost exclusively on socialization of helping in the family context, that is, how specific parenting behaviors or socialization goals systematically relate to children's helping, both at concurrent ages but also predictively across development (Brownell et al., 2013; Dahl, 2015). One of the challenges in interpreting socialization effects of parenting is that the associations of parenting with their children's prosocial behaviors could reflect the effects of genetic tendencies shared by parents and children (Knafo & Plomin, 2006). In addition, there is evidence from middle childhood

for bidirectional relations between children's prosocial behavior and parenting behavior (Newton et al., 2016), giving rise to the possibility that part of the association between parenting and prosocial behavior could reflect the effect of children on parents as well. Furthermore, parents are not the only source of socialization during early childhood. Children in many societies participate in social environments outside the nuclear family. Non-parental childcare and preschools are major sources of social influence on young children. In addition, same-age peers influence children's cooperative and helping behavior (Brownell, Ramani, & Zerwas, 2006; Hay, 2006; Hepach, Kante, & Tomasello, 2017). In comparison to parental socialization, very little empirical work has addressed the relation between children's concern for others and early childhood educators' socialization goals as well as peer social climate at preschool.

1.2 | Socialization of prosocial behavior outside the family context

Research on non-familial socialization effects on children's behavior often focuses on prompted prosocial behavior (compliance with adults' requests to follow rules or to behave fairly) and less often on "spontaneous" prosocial behavior (comforting and helping). Evidence from large-scale longitudinal studies suggests that at 6 years, children who attended preschool before they entered formal schooling are perceived as more compliant and sociable, but as equally prosocial compared to peers without preschool experiences (Pingault et al., 2015; Sammons et al., 2003). As far as the "dosage" of preschool attendance is concerned, earlier research indicated that 2-year-olds who had spent more weekly time in non-parental care were reported by their mothers to be less compliant, but this effect had disappeared by age 3 (National Institute of Child Health and Human Development Early Child Care Research Network, 1998). In an experimental task, Schuhmacher, Collard, and Kärtner (2017) found that toddlers with greater amounts of weekly day care attendance were more likely to show spontaneous comforting behavior in alleviating an experimenter's distress. Although informative, purely quantitative measures of preschool attendance versus non-attendance, "dosage" of weekly hours, or age of preschool entry provide only limited insight into the ways in which agents of socialization within preschool environments shape young children's prosocial behavior.

Preschool and kindergarten teachers generally encourage prosocial behaviors among children. They value children's behaviors directed at helping others in distress to a similarly high degree as do mothers (Döge & Keller, 2014), and they praise and encourage comforting and helping behavior in the classroom more than, for example, sociable behaviors (e.g., inviting others to join in a game, Li, Coplan, Archbell, Bullock, & Chen, 2016). In contrast to work on parental socialization, however, there is no study that has investigated the relations between young children's prosocial behavior and their teachers' socialization goals related to prosociality, obedience, and autonomy. One aspect that has been linked to the development of prosocial behaviors and which constitutes an important part of children's preschool experiences, is the quality of teacher-child relationships. For example, 5-year-old children with conflictual teacher-child relationships were less likely to behave prosocially in first grade than were children with comparable levels of prosocial behavior at age 5 years, but with less conflictual teacher-child relationships (Birch & Ladd, 1998).

Interactions with peers are another source of impact for shaping young children's prosocial behavior (Brownell et al., 2006). Initial work on preschool peer experiences and prosocial behavior found that the number of positive social interactions with peers in the preschool classroom was correlated with the frequency of children's spontaneous prosocial behaviors and prosocial responses to their peers' distress (Eisenberg, Cameron, Tryon, & Dodez, 1981; Farver & Branstetter, 1994). One interpretation of these findings is that prosocial behavior may serve as a way for young children to affiliate with peers. An alternative explanation for the concurrent associations between prosocial behavior and the amount of positive social peer contact might be that the composition of the classroom peer group in terms of "social climate" exerts some influence on children's individual prosocial behavior. In support of this hypothesis, Howes (2000) examined the quality of interactions among 4-year-olds and their classroom

peers and its relation to children's later individual level of cooperativeness and helpfulness toward peers. In this study, the positive social climate of interactive social play among peers in preschool best predicted cooperativeness and helpfulness toward peers in second grade.

Taken together, the degree to which children's helping behavior is socialized during toddlerhood and the early preschool years lies at the center of an ongoing debate on the origins of human prosociality. Large-scale studies on children's early participation in day care and preschool programs provide an opportunity to inform current debates on children's developing prosociality between biological altruism and social constructivism accounts which make different claims about when in ontogeny prosocial behavior is affected by socialization. Accounts holding that socialization operates from birth to drive prosociality have focused mainly on early adult socialization in the family context. They suggest that similar effects are likely to occur early with teacher-related socialization factors in the preschool and day care context (given an early entry into day care/preschool). Accounts which propose a strong biological basis of children's concern for others predict that young children's prosocial responding becomes more sensitive to family and certainly preschool socialization primarily after their third year of life when children increasingly begin to adhere to social norms. Only few studies so far have addressed the role of young children's non-familial social environments in the socialization process. This paucity in empirical work is surprising given that a majority of 3-year-olds are enrolled in formal early childhood education programs across OECD countries (OECD, 2018).

1.3 | The present study

The current study addresses how the socialization goals of parents and preschool teachers as well as peer social climate impact children's concern for others as measured through mother and educator ratings of children's comforting behavior. We draw on two large-scale samples and conduct multi-method and multi-informant data analyses to predict individual differences in children's concern for others during the theoretically proposed critical ontogenetic period for socialization effects between 2 and 4 years of age. In contrast to previous work, our approach uniquely allows for parallel assessment of relevant socialization variables across the family and the preschool context. We tested hypotheses based on different theoretical accounts about the age-dependency of these effects: According to the biological altruism account, socialization effects should be more likely to occur in the sample of 4-year-olds than in the sample of 2-year-olds whereas the social-constructivist account would predict similar effects in both age groups. Moreover, the study adds to previous research by examining the effects of peer social climate on 4-year-olds' propensity for prosocial behavior. In the context of the current theoretical debate an exploratory approach to peer effects is warranted given the small number of empirical studies and the fact that both theoretical accounts allude to peer context effects but did not make specific directional predictions with regard to its impact on children's concern for others.

2 | METHOD

2.1 | Participants

The database analyzed to address the research questions outlined above was the public-use file of the German National Study of Education and Care in Early Childhood (Tietze et al., 2015) conducted in 2010 and 2011. The data included two cross-sectional samples of 804 2-year-old children ($M = 2.7$ years, $SD = 2.0$ months, 50% female) and 714 4-year-old children ($M = 4.5$ years, $SD = 3.7$ months, 51 % female). Parents provided written informed consent. An internal approval of an ethics committee was not obtained for our analyses because we made use of the GESIS Data Archive public use data set.

Maternal highest level of education was classified according to the International Standard Classification of Education (ISCED-97, OECD, 1999). For mothers reporting immigration background, the average ISCED-97 level was 3 (upper secondary education) in both age groups. For mothers reporting non-immigration background, the average ISCED-97 level was 4 (post-secondary non-tertiary education) in both age groups. The average net household income was 46,476 € per year. The average age of entry into extra-familial child care was 16.6 months for 2-year-olds ($SD = 7.0$ months) and 25.7 months for 4-year-olds ($SD = 3.7$ months). Note that in the German early childhood education system children attend preschool ('Kindergarten'), which is not part of the school system, typically from age 2 to 6 years. Transition into formal schooling starts with entry into elementary school at the age of 6 to 7 years.

2.2 | Measures

2.2.1 | Outcome

Concern for others

Children's concern for others at home and at preschool was assessed using mother and preschool teacher ratings from the subscale *Empathy* of the Infant-Toddler Social Emotional Assessment (ITSEA; Carter, Briggs-Gowan, Jones, & Little, 2003) for 2-year-olds and the subscale *Empathy* of the Social Skills Improvement System (SSIS; Gresham & Elliot, 2008) for 4-year-olds. Mothers and preschool teachers of 2-year-olds were given the following instruction: "The following is a list of characteristics that can be used to describe children's behavior. For each characteristic, please answer whether it has been observed in your child/this child now or within the past 2 months." In total, mothers/preschool teachers rated 7 items on a 3-point scale (1 = *rarely*, 3 = *often*, e.g., "Worried or upset when someone is hurt," "Tries to help when someone is hurt, for example, gives a toy," "Tries to make you feel better when you're upset"). Mothers and teachers of 4-year-olds were instructed as follows: "The following is about your child's/this child's social development. Please estimate below how much the statements have applied to your child/ the child's behavior in the past two months." Mothers/preschool teachers rated 6 items on a 4-point scale (1 = *never*, 4 = *almost always*, e.g., "Tries to comfort others," "Shows kindness to others when they are upset," "Is nice to others when they are feeling bad," "Shows concern for others"). A full list of the administered items is presented in Table 1.

TABLE 1 Items measuring concern for others in the samples of 2-year-olds and 4-year-olds

| Item | 2-year-olds | 4-year-olds |
|------|--|--|
| | <i>Empathy</i> subscale (Infant-toddler social and emotional assessment) | <i>Empathy</i> subscale (Social skills improvement system rating scales) |
| 1 | Tries to help when someone is hurt, for example, gives a toy | Tries to comfort others |
| 2 | Tries to make you feel better when you're upset | Forgives others |
| 3 | Worried or upset when someone is hurt | Feels bad when others are sad |
| 4 | Tries to "make-up" for misbehaving | Shows kindness to others when they are upset |
| 5 | Aware of other people's feelings | Is nice to others when they are feeling bad |
| 6 | Jokes or gives you things to make you smile or laugh | Shows concern for others |
| 7 | Talks about other people's feelings, for example, "Mommy mad" | |

2.2.2 | Main predictors

Socialization goals

We included a total of six socialization goals (SG) which we assessed as follows. Goals were assessed with 13 items concerning traits and behaviors that a child is expected to develop during their first years of life as rated by their mothers and preschool teachers using a questionnaire developed by Keller et al. (2006) and adapted by Kärtner et al. (2010). Mothers and preschool teachers rated identical items on a 6-point scale (1 = *I do not agree*, 6 = *I totally agree*). Analyses of the present data indicated that mothers' and teachers' socialization goals grouped into three dimensions referring to the development of the self, to obedience, and to children's prosocial behavior (Döge & Keller, 2014). In line with these results, we used the following socialization goal constructs for both mothers and teachers: prosocial-related SG (5 items, e.g., "learn to help others," "learn to care for others' well-being"), obedience-related SG (4 items, e.g., "learn to obey parents," "learn to respect elder people"), and autonomy-related SG (4 items, e.g., "learn to develop independence," "learn to develop self-esteem").

Social climate of the peer group

Peer social climate is defined both negatively and positively as the group-average level of problem behaviors and interactive social play (Howes, 2000). Two contextual variables were obtained by aggregating scores (teacher ratings) of the subscale *Engagement* of the SSIS (Gresham & Elliot, 2008) and the subscale *Withdrawn* of the Child Behavior Checklist (CBCL for ages 1½–5, Achenbach & Rescorla, 2000). The subscale *Engagement* assesses positive aspects of reciprocal interactions such as initiating conversations, making friends, joining in activities, and inviting others to join in (7 items, 4-point scale: 1 = *never*, 4 = *almost always*). The subscale *Withdrawn* assesses internalizing problem behaviors such as refusing active games, being unresponsive to affection, being withdrawn, or showing little interest and affection (8 items, 3-point scale: 1 = *not true*, 3 = *very true or often true*).

2.2.3 | Control predictors

Teacher-child interaction

Trained observers rated the quality of teacher-child interactions based on the Caregiver Interaction Scale (CIS, Arnett, 1989). The CIS measures different aspects of interaction quality (e.g., sensitivity, harshness, detachment) on a group-level on a 4-point scale and has been demonstrated to correlate substantially with other measures of preschool classroom quality (e.g., Cryer, Tietze, Burchinal, Leal, & Palacios, 1999). The CIS showed good internal consistency in both samples of our data (26 items, $\alpha_{2\text{-year-olds}} = .93$, $\alpha_{4\text{-year-olds}} = .93$). As recommended in a psychometric validation study of the CIS by Colwell, Gordon, Fujimoto, Kaestner, and Korenman (2013), we used a single overall mean score of the CIS in our analyses (2-year-olds: $M = 3.25$, $SD = 0.43$; 4-year-olds: $M = 3.20$, $SD = 0.45$).

Adult-child relationship quality

Qualities of teacher-child and of mother-child relationship were assessed using the short form of the Student-Teacher Relationship Scale (STRS, Pianta, 1992b) and the short form of the Child-Parent Relationship Scale (CPRS, Pianta, 1992a). Teachers and mothers rated items on a 5-point scale (15 items, 1 = *definitely does not apply*, 5 = *definitely applies*) addressing both the closeness as well as the conflict dimension between informant and child.

Descriptive statistics and reliability information of the outcome, socialization goals, social climate, and the respective adult-child relationship quality measures for 2-year-olds and 4-year-olds are summarized in Tables 2 and 3. For all analyses, we included as additional covariates the child's age (in months), gender, preschool entry age, household income, migration background status, and maternal education.

TABLE 2 Descriptive statistics for study variables (2-year-olds)

| | Min | Max | Teacher report | | | Parent report | | |
|-----------------|------|------|----------------|------|----------|---------------|------|----------|
| | | | M | SD | α | M | SD | α |
| Empathy (ITSEA) | 1.00 | 3.00 | 2.31 | 0.49 | .82 | 2.57 | 0.34 | .66 |
| SG prosociality | 1.00 | 6.00 | 4.79 | 0.89 | .81 | 4.80 | 0.87 | .81 |
| SG obedience | 1.00 | 6.00 | 4.00 | 1.17 | .82 | 3.92 | 1.18 | .83 |
| SG autonomy | 1.00 | 6.00 | 5.31 | 0.72 | .75 | 5.31 | 0.69 | .75 |
| Closeness | 1.00 | 5.00 | 4.28 | 0.58 | .79 | 4.53 | 0.36 | .56 |
| Conflict | 1.00 | 5.00 | 1.51 | 0.53 | .78 | 2.19 | 0.63 | .74 |

Abbreviations: ITSEA, infant-toddler social and emotional assessment; SG, socialization goals.

TABLE 3 Descriptive statistics for study variables (4-year-olds)

| | Min | Max | Teacher report | | | Parent report | | |
|-----------------------------|------|------|----------------|------|----------|---------------|------|----------|
| | | | M | SD | α | M | SD | α |
| Empathy (SSIS-RS) | 1.00 | 4.00 | 2.88 | 0.55 | .83 | 3.00 | 0.44 | .76 |
| SG prosociality | 1.00 | 6.00 | 4.98 | 0.84 | .80 | 4.83 | 0.90 | .78 |
| SG obedience | 1.00 | 6.00 | 4.19 | 1.14 | .85 | 4.89 | 1.01 | .84 |
| SG autonomy | 1.00 | 6.00 | 5.43 | 0.65 | .75 | 5.20 | 0.81 | .77 |
| Closeness | 1.00 | 5.00 | 4.17 | 0.63 | .86 | 4.53 | 0.36 | .54 |
| Conflict | 1.00 | 5.00 | 1.52 | 0.55 | .81 | 2.27 | 0.68 | .74 |
| Social climate (withdrawal) | 1.00 | 3.00 | 1.25 | 0.09 | .61 | | | |
| Social climate (engagement) | 1.00 | 4.00 | 3.16 | 0.25 | .82 | | | |

Note: Social climate variables were only assessed by teachers in preschool classrooms.

Abbreviations: SG, socialization goals; SSIS-RS, social skills improvement system rating scales.

2.3 | Statistical analyses

2.3.1 | Socialization goals

Given that more than one informant perspective was used to assess the construct of interest in our study, we analyzed the data using a Correlated Trait-Correlated Uniqueness model (Marsh & Bailey, 1991) to predict children's concern for others for each age group. We included the ratings from both informants (mothers and teachers) into the same structural equation model (SEM). A latent variable *concern for others* was defined using the items of the ITSEA *Empathy* subscale for 2-year-olds and the SSIS *Empathy* subscale for 4-year-olds as indicators of the latent construct for each informant perspective, respectively. Informant effects were captured by correlations among the residuals for variables rated by the same type of informant. The schematic representation of the SEM is given in the Supporting Information (Figure S1; factor loadings Table S2). Robust estimations of standard errors were used to account for the hierarchical dependency of the data (McNeish, Stapleton, & Silverman, 2017). Crucially,

by including measures of both teacher-child and parent-child relationship quality, we also controlled for effects of interpersonal relationships between the informant and the child.

2.3.2 | Social climate of the peer group

Social climate is a group-level construct. Therefore, we used multilevel modeling to examine contextual effects of the peer social climate on a child's concern for others. Contextual effects are obtained by including aggregated scores of a predictor variable at the group level while controlling for the same variable at the individual level (Boyd & Iverson, 1979; Raudenbush & Bryk, 2002). Thus, at level 1, the contextual effects model for *concern for others* included the child's individual level of engagement with others, a child's individual level of social withdrawal, adult relationship quality, maternal socialization goals, and covariates. Coefficients at level 1 were assumed to be fixed across groups except for the intercept, which was allowed to vary across groups. At level 2, the model included the social climate of the peer group, that is, the group average levels of *engagement* and *social withdrawal*, as well as teacher interaction quality and teacher socialization goals. Predictors for *social engagement* and *social withdrawal* at level 1 were grand-mean centered. The multilevel analyses relied on manifest mean scores of the outcome measure and contained all control predictors mentioned above. A detailed description of the contextual model specification is provided in the Supporting Information.

Amount of missing data was low ranging between 0 and 9% for the data of the 2-year-olds and between 0 and 3% for 4-year-olds. For all statistical models we applied full information maximum likelihood (FIML) including covariates to handle missing data, which has been shown to provide unbiased estimates (Allison, 2003). All analyses were performed in *Mplus*, Version 7.4 (Muthén & Muthén, 1998-2012).

2.4 | Preliminary analyses

One important prerequisite question is whether the two measures of children's concern for others, provided by mothers or teachers, reflect different constructs. The respective bivariate correlations between children's concern for others at preschool as rated by teachers and their concern for others at home as rated by mothers were small: $r = .14$ ($SE = 0.047$, $p < .01$) for 2-year-olds and $r = .18$ ($SE = 0.044$, $p < .001$) for 4-year-olds (see Table 4). These discrepancies between teacher and mother ratings may reflect that children's prosocial behavior differs substantially between home and preschool environment, but they also may reflect differences between the informants in noticing and rating children's behavior (Achenbach, 2011).

To model contextual effects of the social climate among peers (a group-level construct), a sufficient number of about 5 observations per group level unit (cluster size) is needed to yield unbiased estimates (McNeish, 2014). To perform contextual analyses, we therefore relied on a subsample of the data by identifying those children who were in the same preschool group (using their group ID) with a minimum cluster size of at least 4 children per group. Importantly, children in the subsample did not differ from those in the full sample with respect to child and family background characteristics (see Supporting Information Table S1). We calculated Intraclass Correlation Coefficients (ICC) for the outcome variables to examine between-group variance in children's outcomes. ICCs for 4-year-olds were .13 for mother ratings and .28 for teacher ratings indicating that ratings of children's concern for others in both home and preschool differed substantially between groups. For the data of 2-year-olds, however, there was no evidence for substantial group-level variance in maternal ratings of children's concern for others ($ICC = .02$). Therefore, we were able to perform contextual analyses for a subsample of the 4-year-olds only ($n = 360$).

TABLE 4 Bivariate correlations for study variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---------------------------------|---------|---------|--------|--------|--------|--------|--------|--------|---------|--------|---------|---------|-------|
| 1. Concern for others (teacher) | | .14* | .03 | -.08 | .06 | .12* | -.04 | .04 | .64*** | -.23** | .09* | -.17*** | .15** |
| 2. Concern for others (parent) | .18* | | .28*** | .07 | .18*** | .06 | -.01 | .04 | .04 | .05 | .49*** | -.13** | .07 |
| 3. SG mother prosocial | .09* | .20* | | .43*** | .49*** | .07* | .06 | .06 | .01 | -.03 | .09* | -.01 | -.01 |
| 4. SG mother obedience | -.02 | .01 | .57*** | | .15* | .09* | .10* | .05 | -.08* | .05 | -.02 | .16* | -.07 |
| 5. SG mother autonomy | .06 | .05 | .61*** | .31*** | | -.00 | -.03 | .01 | -.01 | -.08* | .09* | -.02 | -.06 |
| 6. SG teacher prosocial | .11* | .04 | .01 | -.01 | -.02 | -.02 | .46*** | .55*** | .11* | -.04 | .02 | -.06 | .04 |
| 7. SG teacher obedience | -.01 | .07 | -.01 | .08 | -.08 | .28*** | .30*** | .23*** | .05 | .01 | -.01 | -.07 | -.09 |
| 8. SG teacher autonomy | -.04 | .01 | .00 | .00 | .00 | .67*** | .30*** | .00 | .00 | .06 | -.01 | -.02 | .05 |
| 9. TCRS closeness | .50*** | .03 | .07 | .03 | .08 | .11* | .05 | .07 | -.28*** | .06 | .06 | -.13** | .13** |
| 10. TCRS conflict | -.40*** | -.15* | -.02 | .01 | -.01 | .02 | .10 | -.01 | -.30*** | -.02 | -.02 | .13* | -.06 |
| 11. CPRS closeness | .04 | .38*** | .11 | .11 | .09 | .02 | -.00 | -.05 | .02 | -.04 | -.26*** | .01 | |
| 12. CPRS conflict | -.10 | -.28*** | -.04 | .05 | -.03 | -.04 | -.02 | -.04 | -.11* | .18** | -.24*** | -.09 | |
| 13. Caregiver Interaction Scale | .05 | -.06 | -.01 | .00 | .02 | .01 | -.04 | .04 | .02 | -.03 | -.04 | .01 | |

Note: Coefficients above the diagonal refer to the sample of 2-year-olds. Coefficients below the diagonal refer to the sample of 4-year-olds.

Abbreviations: CPRS, child–parent relationship scale; SG, socialization goal; TCRS, teacher–child relationship scale.

* $p < .05$; ** $p < .01$; *** $p < .001$.

3 | RESULTS

Table 5 presents results from SEMs predicting concern for others. The specified models fit the data well: Model 2-year-olds: $\chi^2(240, N = 804) = 384.55, p < .001$; RMSEA = .027; 95% CI [.022-.032]; CFI = .946; SRMR = .028; Model 4-year-olds: $\chi^2(195, N = 714) = 341.01, p < .001$; RMSEA = .032; 95% CI [.027-.038]; CFI = .946; SRMR = .025.

3.1 | Socialization goals

3.1.1 | Prosociality

Teachers' socialization goals pertaining to prosociality only were predictive of teachers' ratings of 4-year-olds' concern for others in the preschool context ($\beta = 0.20, p < .01$) but did not predict 4-year-olds' concern for others as rated by mothers. In addition, teachers' socialization goals did not predict 2-year-old children's concern for others, neither from the teachers' perspective ($\beta = 0.09, p = .12$), nor from the mothers' perspective ($\beta = 0.03, p = .61$). On the contrary, mothers' prosocial goals were predictive of 4-year-olds' concern for others as assessed by both teachers ($\beta = 0.32, p < .001$) and mothers ($\beta = 0.11, p < .05$). In addition, for 2-year-olds, mothers' prosocial

TABLE 5 Results from structural equation models predicting concern for others

| | Model 2-year-olds | | | | Model 4-year-olds | | | |
|---|------------------------------|-------|-----------------------------|-------|------------------------------|-------|-----------------------------|-------|
| | Concern for others (teacher) | | Concern for others (parent) | | Concern for others (teacher) | | Concern for others (parent) | |
| | Est. | SE | Est. | SE | Est. | SE | Est. | SE |
| Teacher interaction quality (CIS) | 0.04 | 0.050 | 0.06 | 0.044 | 0.03 | 0.045 | -0.06 | 0.050 |
| <i>Teacher socialization goals</i> | | | | | | | | |
| Prosociality | 0.09 | 0.057 | 0.03 | 0.060 | 0.20** | 0.076 | 0.00 | 0.072 |
| Obedience | -0.12* | 0.060 | -0.01 | 0.054 | -0.04 | 0.063 | 0.09 | 0.060 |
| Autonomy | 0.01 | 0.055 | 0.02 | 0.049 | -0.20*** | 0.058 | -0.05 | 0.060 |
| <i>Teacher-child relationship quality</i> | | | | | | | | |
| Closeness | 0.70*** | 0.045 | 0.01 | 0.048 | 0.41*** | 0.044 | -0.05 | 0.045 |
| Conflict | 0.02 | 0.054 | 0.08 | 0.046 | -0.27*** | 0.066 | -0.11* | 0.045 |
| <i>Maternal socialization goals</i> | | | | | | | | |
| Prosociality | 0.02 | 0.045 | 0.22*** | 0.070 | 0.11* | 0.054 | 0.32*** | 0.065 |
| Obedience | -0.03 | 0.036 | -0.02 | 0.057 | -0.04 | 0.047 | -0.14* | 0.064 |
| Autonomy | 0.05 | 0.041 | 0.04 | 0.059 | -0.02 | 0.057 | -0.13* | 0.057 |
| <i>Mother-child relationship quality</i> | | | | | | | | |
| Closeness | 0.05 | 0.039 | 0.55*** | 0.086 | 0.00 | 0.039 | 0.35*** | 0.052 |
| Conflict | -0.06 | 0.042 | 0.02 | 0.052 | 0.01 | 0.037 | -0.16** | 0.056 |
| Covariates | Incl. | | | | Incl. | | | |
| R ² | .596*** | | .420*** | | .415*** | | .340*** | |

Note: Covariates include the child's age, gender, entry age, income, migration status, and maternal education. Abbreviations: CIS, caregiver interaction scale; Est., standardized coefficient estimates, SE, standard errors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

goals predicted concern for others for maternal ratings ($\beta = 0.22, p < .001$) but not for teachers' ratings ($\beta = 0.02, p = .58$).

3.1.2 | Obedience

Teachers' socialization goals related to obedience were only predictive of 2-year-old children's concern for others in teachers' assessments ($\beta = -0.12, p < .05$). Mothers' socialization goals pertaining to obedience were only predictive of 4-year-olds' concern for others in maternal ratings of the outcome ($\beta = -0.14, p < .05$) but did not predict 4-year-olds' concern for others from the teachers' perspective ($\beta = -0.04, p = .35$) or concern for others in 2-year-olds.

3.1.3 | Autonomy

Maternal emphasis on autonomy ($\beta = -0.13, p < .05$) was associated negatively with mothers' assessment of 4-year-olds' empathic concern, but not from the teachers' perspective ($\beta = -0.02, p = .76$). Similarly, teachers' autonomous socialization goals predicted teachers' ratings of 4-year-olds' empathic concern ($\beta = -0.20, p < .001$) but not from the mothers' perspective ($\beta = -0.05, p = .39$). Neither mothers' nor teachers' autonomy-related socialization goals predicted any outcome for the 2-year-olds.

In sum, preschool teachers' socialization goals showed few effects in the 2-year-olds. The effect of maternal prosocial SG for 2-year-olds was specific to mothers' ratings. For 4-year-olds, results indicated that maternal valuing of prosocial behavior predicted empathic concern across different perspectives. Mothers' SG related to autonomy and obedience and teachers' SG related to prosociality and autonomy revealed perspective-specific effects for the 4-year-olds. Importantly, we found this pattern of results while controlling for the quality of teacher-child and mother-child relationships.

3.2 | Peer group social climate

Table 6 provides results from multilevel models predicting 4-year-olds' concern for others from peer group social climate. The contextual effect parameter for social withdrawal was not predictive of children's concern for others neither from the mothers' perspective ($\beta = 0.31, p = .13$) nor from the teachers' perspective ($\beta = 0.12, p = .68$). On the contrary, the contextual effect of positive social climate among peers predicted both children's concern for others as rated by teachers ($\beta = 0.48, p < .01$) as well as their concern for others as rated by mothers ($\beta = 0.58, p < .001$). These contextual effect parameters indicate by how many standardized units the predicted outcome from two groups differs given that all other predictors and covariates are controlled for and the difference between group means is 1. Information on associations for mother-child relationship, teacher-child relationship, and interaction quality as well as covariates is provided in the Supporting Information (Table S3). For all analyses, we found a gender effect in favor of girls across informants' assessment of children's concern for others, but no other significant effects of covariates.

4 | DISCUSSION

The current study addressed socialization effects of parents, preschool teachers, and preschool classroom peers on young children's prosocial behavior. In sum, the results yielded three main findings. First, maternal valuing of

TABLE 6 Results from multilevel models predicting 4-year-olds' concern for others from peer group social climate

| | Concern for others (teacher) | | Concern for others (parent) | |
|-----------------------------------|------------------------------|-------|-----------------------------|-------|
| | Est. | SE | Est. | SE |
| Level 2 (group-specific) | | | | |
| Teacher interaction quality (CIS) | 0.27* | 0.124 | -0.17 | 0.151 |
| Teacher socialization goals | | | | |
| Prosociality | 0.38* | 0.185 | 0.03 | 0.218 |
| Obedience | -0.08 | 0.172 | 0.00 | 0.171 |
| Autonomy | -0.22 | 0.161 | 0.02 | 0.198 |
| Social climate | | | | |
| Social withdrawal | 0.12 | 0.218 | 0.31 | 0.200 |
| Positive social engagement | 0.48** | 0.184 | 0.58*** | 0.167 |
| Level 1 (child-specific) | | | | |
| Maternal socialization goals | | | | |
| Prosociality | 0.11 | 0.071 | 0.18* | 0.073 |
| Obedience | -0.07 | 0.044 | -0.07 | 0.071 |
| Autonomy | 0.00 | 0.075 | -0.08 | 0.074 |
| Social withdrawal | -0.06 | 0.084 | -0.05 | 0.099 |
| Positive social engagement | 0.45*** | 0.071 | 0.02 | 0.093 |
| Covariates | Inc. | | Inc. | |
| Random parameters | | | | |
| Individual level variance | 0.64*** | 0.060 | 0.79*** | 0.046 |
| Group-level variance | 0.49* | 0.223 | 0.51* | 0.252 |

Note: Analyses are based on subsample ($n = 360$) from groups with cluster sizes > 3 . Covariates include children's age, gender, entry age, teacher-child relationship quality, mother-child relationship quality, parental income, migration background, and maternal education.

Abbreviations: CIS, caregiver interaction scale; Est., standardized coefficient estimates; SE, standard errors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

prosocial behavior predicted children's empathic concern. For 2-year-olds, these effects were informant-specific, that is, they occurred only in mothers' assessment of their child's prosocial behavior. For 4-year-olds, these effects occurred across assessments of different informants (parents vs. teachers). Second, preschool teachers' socialization goals showed few effects for 2-year-olds and perspective-specific effects for the 4-year-olds. Third, our findings revealed that a more positive climate of social interactions among peers in the preschool classroom had a positive effect on 4-year-olds' concern for others as rated by both mothers and teachers.

Socialization goals have been argued to act as a proximal mechanism by which sociocultural environments shape young children's prosocial behavior (Kärtner et al., 2010). In contrast to the current investigation, previous studies using similar measures of socialization goals did not find significant associations between prosocial socialization goals of mothers and their toddlers' empathic concern or helping behavior (Giner Torrens & Kärtner, 2017b; Kärtner et al., 2010). This might suggest that the effects observed in the current study were a result of the same informant rating both the predictor (socialization goals) as well as the outcome. However, an informant-specific pattern of effects occurred only in the sample of the 2-year-olds. It does not explain the effects observed in the sample of 4-year-olds which demonstrated that preschool teachers' ratings of children's empathic concern were predicted by *maternal* valuing of prosocial behavior. A more plausible explanation of the current findings is that

effects of reinforcing prosociality by parents' positive valuing of these behaviors are likely to surface in social environments outside the family only after children's third year of life. It should be pointed out that in our peer effects models, maternal prosocial socialization goals were not a significant predictor when the outcome was rated by teachers. The smaller sample size in these models led to a modest increase in standard errors explaining the absence of a statistically significant effect.

Furthermore, we hypothesized that children's prosocial behavior may depend on their peer group's level of positive social climate. We found that the social climate among peers defined as the group-average level of positive reciprocal interactions predicted children's concern for others. This result is in line with previous research examining the relation between the peer group's level of social engagement and children's individual level of prosocial behavior toward peers (Howes, 2000).

To explain the links between reciprocal interactions among peers and individual trajectories, it has been suggested that peer groups provide developmental opportunities based on more general principles of peer selection, reinforcement, and reciprocity in social networks (DeLay, Hanish, Matin, & Fabes, 2016). Regarding the development of concern for others and prosocial behavior, selection effects describe a preference to become more similar to peers by actively choosing peers to interact with based on observing and imitating their prosocial behaviors. In fact, observational data from preschool classrooms suggest that children who have greater affiliations with prosocial peers are more likely to demonstrate prosocial responding in play activities (Fabes, Hanish, Martin, Moss, & Reising, 2012) and toward peers' distress (Farver & Branstetter, 1994). Reinforcement effects in peer groups are likely to be based on social experiences such as receiving positive feedback from peers for spontaneous (but not asked-for) prosocial behavior (Eisenberg et al., 1981). Finally, reciprocity also might play an important role for the development of prosocial responding in peer contexts (Fujisawa, Kutsukake, & Hasegawa, 2008). The results of the current study suggest that the between-group differences in social climate may partly tap on some of these effects. However, future research using social network analyses will have to examine more closely the relations between peer selection, reinforcement, and reciprocity effects and group-level measures of social climate.

One objection to the current findings of peer group effects might be that children who have attended preschool before they start formal schooling are perceived as equally prosocial compared to their peers who have not attended preschool (Pingault et al., 2015; Sammons et al., 2003). Comparisons of children with and without preschool experiences, however, do not invalidate analyses that examine the variance in behavior among those children with preschool experiences, which comprise the vast majority of 4-year-olds across OECD countries (OECD, 2018). Thus, the findings from this investigation lend support to the hypothesis that peer group-specific processes embodied in positive reciprocal interactions account for variance in children's prosocial behavior.

Our statistical analysis approach uniquely allowed for parallel assessment of relevant socialization variables across the family and the preschool context. We relied on two large scale samples using multi-method (observational and report measures), multi-informant data (parent and teacher reports) to predict individual differences in children's concern for others during a critical ontogenetic period for socialization effects. Moreover, we used multilevel modeling to examine contextual effects of the preschool classroom's social climate on children's prosociality offering a new empirical perspective on peer group effects of young children's prosocial behavior. Nevertheless, the current analyses and findings should also be considered against some limitations concerning the interpretation of our results.

First our results rely exclusively on adult ratings of children's behavior rather than on observed behavior under controlled conditions. Nevertheless, parent and teacher reports provide invaluable insight to the emergence, frequency, and domain-specificity of children's prosocial behavior (Dahl, 2015; Dahl et al., 2017; Hammond, Al-Jbouri, Edwards, & Feltham, 2017). For example, an analysis of parent reports on prosocial behavior revealed that different types of helping map onto three distinct latent constructs: sharing, comforting, and instrumental helping (Giner Torrés & Kärtner, 2017a). These questionnaire data mirror empirical findings on children's observed helping in the laboratory, giving credit to using the method of using parental and non-parental caregiver questionnaires to investigate the frequency of helping behavior. However, the correlation sizes between ratings

from different informants (mothers vs. teachers) in our study were small. When using all indicator variables of the outcome to define a single latent construct for each age group (but keeping everything else in our models constant), we found a substantial decrease in model fit indicating that a two-factor solution with informant-specific constructs of *concern for others* was the most appropriate way to model the data.

In this regard, it should also be pointed out that the items representing the key constructs were similar to some degree, but not identical for the 2-year-olds and the 4-year-olds. This incongruence is explained by the fact that for the two age groups, the measures of *concern for others* were adapted from different instruments in the German National Study of Education and Care in Early Childhood. Both scales represent conceptually similar, psychometrically valid, and internally consistent measures from well-established and widely used instruments. We additionally accounted for measurement error by choosing a latent variable approach using the respective full set of items to define the outcome. This approach was important to assess the underlying construct of concern for others in the most age-appropriate way. Nevertheless, differences in associations with socialization variables between the two age groups might be at least partly attributable to the use of non-identical items for 2-year-olds and 4-year-olds. The operationalization of the outcome through different items for different age groups prevented us from establishing measurement invariance directly from the data and remains a confounding aspect in the current analyses. Consequently, the usage of identical measures for younger age groups remains a crucial methodological challenge for future research.

Second, the cross-sectional design of the study does not allow to disentangle the direction of effects between children's concern for others and factors of their socialization contexts. Thus, it could be the case that parents' emphasis on prosocial socialization goals emerges as a consequence of their children's propensity for showing prosocial behavior. In fact, at least for middle childhood there is evidence for bidirectional relations between children's prosocial behavior and parenting behavior (Newton et al., 2016), giving rise to the possibility that part of the association between parenting and early prosocial behavior could reflect the effect of children on parents. Stronger longitudinal designs for early developmental stages are needed to address questions of directionality more precisely, although they need to be examined carefully regarding the analytical challenges of cross-classified data (children belonging to multiple groups over time).

Third, the operationalization of the socialization variables in the data of the current study is limited. Beyond socialization goals there are practices, such as praising, rewarding, emotion-related talk, and scaffolding, that have been proposed to promote prosociality and that were not part of the operationalization of socialization in our analyses. Despite the assumption that these practices themselves are guided by socialization goals (Köster & Kärtner, 2019), observational data of such practices and their dynamic interplay with children's behavior would have captured more accurately the full spectrum of socialization processes emphasized by social constructivist accounts. Future research should address how socialization goals and practices act together in a reciprocal framework with children's behavior in shaping young children's prosociality.

The present study is the first to draw on a large-scale data set to inform current debates on children's developing prosociality between biological altruism and social constructivism accounts. It is important to emphasize that the collection of the data preceded the current debate, and therefore, the items chosen in the questionnaires were not informed by the debate itself. Our aim here was to highlight the relevance of using such data to address timely questions, and we view this as a first step toward building a more cumulative, translational research agenda, in which panel studies are designed to speak to ongoing debates. Two points for further improvement in future research stand out. First, children's concern for others, that is, their empathic concern, is an emotional response to seeing others needing help. Based on the established positive relation between children's empathic concern and their helping behavior it is reasonable to assume that parents' or teachers' reports on children's helping are indicative of the underlying emotional construct which is children's concern for others. We cannot rule out that the influence of socialization on children's concern for others was underestimated because concern was measured indirectly via ratings of children's behavior. For future research and given the communicative function of emotions (Planalp, 1999), a more direct way of measuring the construct of concern for others would be to assess

children's emotions via coding of facial expressions or emotions rated by teachers and parents. A second overall consideration is that for future research more items to measure socialization goals should be included to assess the specific socialization mechanisms proposed by social constructivist accounts. For example, Brownell and Lab (2016) give a rich description of three organizing principles which characterize the kinds of experience-expectant processes through which children's prosociality is socialized: the bidirectional process of social engagement, social interactions as precursors to prosocial behavior, and the dynamic parallel development of social cognitive skills along with motor and broader cognitive development.

Conclusions

The current study addressed the unique contributions of mothers, early childhood educators, and preschool peers as three major agents of socialization during a theoretically proposed critical ontogenetic period for socialization effects between 2 and 4 years of age. Results from this investigation inform the ongoing debate between biological altruism and social constructivist accounts of the development of prosociality. Children's concern for others was predicted by mothers' prosocial socialization goals but at the age of 2 years this effect was specific to the home context. It was not until the age of 4 years that the wider social environment predicted children's concern for others and that the mother's socializing goals impacted children's prosociality beyond the home context in which this socialization originated. The findings also highlight that from this point in development peer group-specific processes embodied in positive reciprocal interactions accounted for variance in children's prosocial behavior. Given that the majority of young children at the age of 3 years are enrolled in formal early childhood education programs (OECD, 2018), a goal for future research will be to understand how social environments outside the family intersect and act together with family socialization in shaping young children's prosociality.

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DATA AVAILABILITY STATEMENT

The database analyzed to address the research questions outlined above was the public-use file of the German National Study of Education and Care in Early Childhood (Tietze et al., 2015) conducted in 2010 and 2011.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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