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Investigating Parents' Earliest Recollection of Infants' Prosocial Behavior: The Role of Parental Socialization Goals and SES

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Sálfræðideild
Hug- og félagsvísindasvið
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Útdráttur

Markmið þessarar frumrannsóknar var að kanna fyrstu endurminningu foreldra um félagsvæna hegðun ungbarna sinna (nánar tiltekið, að hjálpa, að deila með öðrum, að hughreysta og að vera samvinnuþýð/ur) á Íslandi. Enn fremur könnuðum við fylgni félags- og efnahagslegrar stöðu og félagsmótunar markmið foreldra við fyrstu endurminningu þeirra um félagsvæna hegðun. Þátttakendur voru í heildina 66 foreldrar, sem áttu barn á aldrinum 0-3 ára. Rannsóknin var byggð á afturvirkum gögnum, og var framkvæmd með spurningakönnun á netinu þar sem foreldrar greindu frá félagsmótunar markmiðum sínum og fyrstu endurminningu sinni um félagsvæna hegðun barna sinna, auk lýðfræðilegra upplýsinga á borð við aldur, kyn, menntun og heimilistekjur. Rannsóknin sýndi fram á að samvinnuþýð hegðun barna var fyrsta tegund félagsvænnar hegðunar sem foreldrar greindu frá að hafa komið fram, þar á eftir kom hegðunin að deila, hjálpa og hughreysta. Niðurstöður leiddu í ljós að félags- og efnahagsleg staða tengist ekki félagsmótunar markmiðum foreldra, né fyrstu endurminningu foreldra um félagsvæna hegðun. Þvert á móti sýndu niðurstöðurnar að félagsmótunar markmið séu tengd fyrstu endurminningu foreldra á samvinnuþýðri hegðun, þar sem fylgnin þar á milli var lítillega marktæk. Í heildina gefur rannsóknin til kynna að félagsmótunar markmið foreldra séu líklega tengd tíðni, frekar en tilkomu félagsvænnar hegðunar hjá ungbörnum.

Lykilorð: félagsvæn hegðun, hjálpa, deila, hughreysta, samvinnuþýði, ungbörn, börn, foreldrar, félagsmótunar markmið, félags- og efnahagsleg staða

Abstract

The aim of this exploratory pilot study was to investigate parents' earliest recollection of their infant's prosocial behavior (more specifically, helping, sharing, comforting, and cooperative behavior) in Iceland. Furthermore, we investigated the role of SES levels and parental prosocial socialization goals in parents' earliest recalled observation of these behaviors. The number of participants was a total of 66 parents, who had a child at the age between 0-3 years. This study relied exclusively on retrospective data, which was conducted via online survey where parents reported their earliest recollection for each type of prosocial behavior in their child, as well as details regarding their prosocial socialization goals and demographic information. This study demonstrated that cooperative behavior was the earliest observed type of prosocial behavior reported by parents, followed by sharing, helping, and comforting, respectively. The findings also showed that SES did not relate to parental socialization goals, nor to parents' earliest recollection of infants' prosocial behavior of all four types. Alternatively, the results presented a possible trend regarding the association of parental prosocial socialization goals and parents' earliest recollection of cooperating, helping and sharing. More specifically, the study demonstrated that parental socialization goals were marginally correlated with cooperative behavior. Taken together, this study indicates that parental socialization goals are possibly linked to the frequency, rather than the emergence of prosocial behavior in infants.

Keywords: prosocial behavior, helping, sharing, comforting, cooperating, infants, children, parents, socialization goals, socio-economic status

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1. Introduction

People are profoundly social human beings, and they constantly rely on social interactions in everyday life. They engage in prosocial behaviors which play an essential role in securing the well-being and survival of human beings (Walsh et al., 2023), as well as in encouraging social stability, goodwill, and success (Kosse et al., 2018; Zhang et al., 2022). Environmental factors, such as parenting techniques, play a prominent role in children's prosocial developmental outcomes (O'Brien, 2014). Generally, parents' who prioritize prosocial values have children who display greater levels of prosocial behavior (Rheingold, 1982). Previous research has revealed that parents' affective and behavioral support contributes to children's helping, sharing, and cooperating with others in daily life settings (Hay, 1979; Rheingold, 1982; Rheingold et al., 1976; Ross & Lollis, 1987). Nonetheless, in recent times, studies have centered the focus on normative forms of helping, sharing, comforting, and cooperative behaviors (Brownell, 2013). However, our knowledge for how the different types of prosocial behaviors unfold over time is limited. In this study, we aim to fill this gap by investigating the role of parental socialization goals and socio-economic status in parents' earliest recollection of different dimensions of prosocial behavior in infants.

Prosocial behavior is defined as intentional behavior undertaken to benefit another person (de Mooij et al., 2022; Dunfield, 2014), as well as taking action in favor of others by means of caring and feeling concern for one another (Waugh et al., 2015). One of the fundamental constituents of prosocial behavior among people is the skill of demonstrating care for others in times of anguish or distress (Grossmann, 2018). Prosocial behavior is

marked by acts of helping behaviors, kindness, and empathy, which many view as among the best qualities of human nature (Hasenfratz & Knafo, 2015). In addition to this, prosocial behavior grants pleasurable feelings of individuals, which are attained from the positive social interactions (de Mooij et al., 2022). It plays a crucial factor in the social competence and healthy adaptation of children (Waugh et al., 2015). Particular examples of prosocial behavior include: helping, sharing toys or food with others, instrumental helping (e.g., helping a school friend with homework), and emotionally assisting others in distress (Hasenfratz & Knafo, 2015).

Infants shows prosocial behaviors (e.g., helping and caring) starting from the first year of life (Grossmann, 2018; Hammond et al., 2017) and proceed to display more complex prosocial behaviors (e.g., cooperating) during the second year of life (Hammond et al., 2017; Köster et al., 2016; Waugh et al., 2015). Zhang et al. (2022) stated that the period of the first years of life is critical regarding the development of prosocial behavior. Thus, it is important to observe and be aware of infants' prosocial behavior and the factors contributing to its development. In the next two sections, we will elucidate how parental socialization goals and socio-economic status are contributing factors in the emergence and development of the different types of infants' early prosocial behavior.

1.1 Multidimensional Nature of Prosocial Behavior: Helping, Sharing, Comforting, and Cooperating

Prosocial behavior is a multidimensional concept and covers various forms, or subtypes of aiding, supporting, and benefiting other individuals (Paz et al., 2023; Reschke et al., 2023). Diverse prosocial behaviors exhibit some degree of stability over time while being largely unrelated with one another (Paulus, 2018). Each type of prosocial behavior has its own

idiosyncratic developmental trajectory. Thus, it is important to observe their development separately and independently, rather than as a unified concept (Song et al., 2022).

Existing evidence on this matter is yet inadequate, relatively due to different measurements and experimental tasks used within previous studies, and/or children's individual differences (Song et al., 2022). Helping, sharing, comforting, and cooperating are the early types of prosocial behavior that toddlers exhibit (Brownell, 2016). Nevertheless, early prosocial behavior exhibits substantial differences among individuals, some children share or help regularly, whereas others do so more sparingly or selectively (Paz et al., 2023). There are two competing approaches concerning the developmental trajectory regarding prosocial behavior in the first 3 years of life of infants (Song et al., 2022). On one hand, researchers argue that prosocial behaviors decrease over time, as toddlers will become more selective in these behaviors (Hay et al., 1991). On the other hand, researchers claim that prosocial behaviors show an increase, as toddlers' development of cognitive processes will mature over time (Eisenberg & Miller, 1987, as cited in Song et al., 2022).

Helping behavior is stated to be the first type of prosocial behavior to develop in infants (Song et al., 2022). *Helping* is described as the act of working towards the accomplishment of another person's goals and putting aside the accomplishment of his/her goals (Malti et al., 2016). Infants are helpless at birth and therefore highly dependent on external support. Motivation factor for children to help often depends on how parents illustrate helping (Dahl, 2018; Fonseca, 2018). Multiple empirical research has illustrated that very young children understand individuals' needs, and display a great interest in helping situations, such as sharing or allocating resources and knowledge, even to unfamiliar persons, that they receive no direct benefit from (Fonseca et al., 2018). At what age helping behavior first occurs in infants has been a controversial subject among existing studies. According to Dahl (2018), infants can engage in simple helping behaviors by the first year of life, such as

passing objects to others, and pointing to give information with the intention of helping others (Liszkowski et al., 2008), or help others to accomplish their unfulfilled goals (Warneken & Tomasello, 2007). Furthermore, after the first year, children become very capable of helping others and engage in household chores (Dahl, 2018).

Sharing is defined as recognizing and reacting to the unmet material desire of others (Reschke et al., 2023) and alluding to the distribution of one's own resources to other people (Paulus, 2018). According to some studies, this type of prosocial behavior can be attributed to the early developmental stages (i.e., as early as the age of 8 months), and is expected to gradually increase over time (Malti et al., 2016; Moore, 2009; Seucan et al., 2022). Yet, other researchers demonstrate that sharing behavior emerges later in childhood (Fehr et al., 2008; Hamann et al., 2011), since young infants often find it challenging to share resources as it involves giving up something they value to benefit someone else, like giving away a toy they are playing with to another child (Brownell et al., 2013). However, Flook et al. (2019) demonstrated that sharing with someone in a close environment emerges quite early and tends to remain stable, but sharing with someone who is in need or facing demanding situations seems to emerge later. According to Dunfield et al. (2011), children begin to help adults through acting towards goal directed tasks within the range of 14-18 months. Additionally, children at the age of 18-24 months typically begin to share their toys and foods with others (Brownell et al., 2009; Vaish et al., 2009). Furthermore, Brownell et al. (2013) found that a notable increase in sharing that is focused on others took place in the second year of life and that children's sharing behavior differed according to age such that 24 month-old infants' displayed willingness to share frequently and generously, while 18 month-olds were less inclined to do so, and required considerable assistance from others in order to exhibit sharing behavior.

Comforting has been stated to be the last emerging type of prosocial behavior in children (Biro, 2023). *Comforting behavior* refers to demonstrating certain acts with the goal of alleviating another person's distress or negative emotional state (Giner Torréns & Kärtner, 2017a) and is dependent on the understanding of others' negative emotional states (Malti et al., 2016). Empathy-related responding is often associated with comforting behavior (Paulus, 2018), which leads to the empathy-altruism hypothesis, which suggests that perceiving someone else's negative emotional state can evoke empathic concern, which then drives the motivation for comforting behavior (Paulus, 2018). The ability of handling negative emotions and understanding how others' emotional state can be modified, are essential for engaging in comforting behaviors (Biro, 2023). Research suggests that infants exhibit some aspects of essential emotional understanding by the first year of life, while explicitly being able to identify the particular type of distress first emerges later in toddlerhood (Dunfield, 2014).

Cooperative behaviors are extremely important for human lives, the community, and jobs (Chatathicoon et al., 2022). Cooperating is the performance of one's actions to reach a shared goal with another person, and is therefore, a low-cost prosocial behavior as it has mutually beneficial outcomes between people (Malti et al., 2016). In order to work on a mutual goal, communicating and interacting with others is important and it involves empathy and self-discipline (Chatathicoon et al., 2022). Infants exhibit cooperative behavior in their first year of life (Breeland et al., 2021; Brownell & Carriger, 1990), for example during a social game (i.e., Peek-a-boo; Breeland et al., 2021). However, cooperation between peers happens later in early childhood which relies on the joint coordination of social behaviors between social novices (Brownell & Carriger, 1990). In the third year of children's lives, they begin to share with others in a more equitably manner in collaborative tasks than in parallel-work circumstances (Hamann et al., 2011).

1.2 Parenting in Prosocial Behavior: Socialization Goals and Socio-Economic Status

1.2.1 Socialization goals

Socialization is defined as the process that involves an individual's adaptation of desirable and appropriate standards, skills, attitudes, motives, and behaviors to align with their future and current role within a certain community (Parke et al., 2008). Parental socialization goals refer to the characteristics or qualities that parents value and want their children to acquire or obtain (Yagmurlu & Sanson, 2009). Parents' or caretakers' socialization goals manifest as a proximal component by which cultural beliefs and practices shape prosocial behavior in children (Kärtner et al., 2010).

The effects of infants' social encounters on the emergence of their prosocial behavior has been a topic of ongoing discussion among many researchers (Giner Torréns & Kärtner, 2017b). There are two competing approaches concerning the role of socialization within the developmental trajectory of prosocial behavior in the first 3 years of life of infants (Song et al., 2022). The natural-tendency view suggests that the emergence of prosocial behavior is not dependent on parents' socialization practices. This view claims that parents' socialization practices take part in the growth process of prosocial behavior, yet exclusively after its emergence (Dahl, 2015; Giner Torréns & Kärtner, 2017b; Song et al., 2022). The social-interactional view, on the other hand, claims that infants' cognitive processes of socialization and their social environment is a contributing factor of the emergence and further progression of prosocial behavior (Dahl, 2015; Giner Torréns & Kärtner, 2017b; Song et al., 2022). Empirical evidence from previous studies has provided support for the latter view such that individual differences in 18-24 month-old children's spontaneous helping are elucidated by

the extent of parents' scaffolding during a clean-up task (Hammond & Carpendale, 2015). Moreover, in Dahl's (2015) study, maternal social reinforcement and encouragement was found to be positively correlated with helping in 13-15 month-old, both longitudinally and simultaneously.

In addition to parental behaviors (e.g., scaffolding or encouragement), parental expectations, or socialization goals, play a large role in the formation of children's prosocial behavior outcomes (Breeland et al., 2021). Schuhmacher and Kärtner (2015) discovered that mothers' expectation of their 2 year-old children's sharing behavior was positively associated with children's cooperative behavior in shared problem-solving situations with unfamiliar peers. In addition, Fonseca's et al. (2018) findings on helping behavior in children revealed that maternal socialization goals and practices are related to how often children exhibit helping behaviors. Together, these findings suggest that parental socialization goals affect children's cooperative behavior.

Moreover, cross-cultural studies demonstrate how variability in prosocial behavior is likely to be related to socialization practices (Coppens et al., 2020) due to the fact that parents (especially mothers) from different cultural groups prioritize socialization goals for different reasons (Keller et al., 2007). For example, Yagmurlu and Sanson (2009) investigated prosocial behavior in Turkish and Australian children, their findings indicated that parents who are supportive and warm increased their children's ability to feel concerned for others' needs. Furthermore, studies have shown that children's helpfulness varies between communities and cultures (Dahl, 2018). A cross-cultural study demonstrated that 18 month-old Delhi toddlers whose mothers give more opportunities to in regard of helping within the family context and praised less while encouraging prosocial behavior, helped more compared to Münster toddlers (Giner Torréns & Kärtner, 2017b).

1.2.2 Socio-economic status (SES)

Socio-economic status (SES) is another component that contributes to the variation in prosocial behaviors (Padilla et al., 2020; Wang et al., 2021), and is defined as parents' education, household income (Padilla et al., 2020) and their perception of where they stand within the socio-economic range (Han et al., 2023). Families' SES levels impact every aspect of individuals' lives; including mental and physical health (American Psychological Association, 2010; Han et al., 2023; Wang et al., 2021). Furthermore, SES influence is manifested through various pathways such as social support, parental resources, and mental health (Hosokawa & Katsura, 2018). Families' SES is considered a contributing factor that may affect children's developmental outcomes indirectly, as well as directly, as it may relate to the characteristics of their households and neighborhood environments (Baydar & Akcinar, 2015). Moreover, studies indicate that SES is related to parents' socialization practices (Bradley & Corwyn, 2002), and that family members' professional occupations along with income and education levels, has an impact on individuals' perception and growth of society (Bian & Wu, 2021). For example, in the early stages, parents with higher-SES can financially support their children and can provide good opportunities for individual learning (Thomson, 2018), whereas lower-SES parents experience increased stress due to economic burden, which may lead to diminished engagement in their child's socialization and childrearing processes (Şengönül, 2022). Parents' expectations or aspirations for their children's developmental outcomes and their involvement in working towards achieving these desired goals of developmental outcomes varies across different levels of SES (Hoff et al., 2002; Roubinov & Boyce, 2017), as higher levels of familial SES are largely correlated with increased expectations for expeditious achievement of children's developmental milestones (Hoff et al., 2002) and greater academic achievements (Mello, 2009). Furthermore, parental goals and

values are considered to be a mediating factor that explains the relation between families' SES levels and parenting (Hoff et al., 2002).

Existing evidence of the relationship between familial SES (as a composite or indices of SES) and infants' prosocial behavior is scarce, however there are existing studies examining the relationship between SES and prosocial behavior in preschoolers, college students, and adults. Bian and Wu (2021), for instance, showed that higher SES was correlated to higher levels of prosocial behaviors in Chinese college students. A recent study by Isoiitu-Sjöblom (2022) indicated that children's prosocial behaviors are differentially linked to maternal and paternal education levels, children with high educated fathers exhibited more prosocial behaviors than children with low educated fathers; there was no distinction in children's prosocial behaviors as a function of maternal education level (Isoiitu-Sjöblom, 2022). Research has also discovered that primary school aged children of low educated parents' share less frequently during a costly prosocial game, and that they are less altruistic and more selfish, compared to children whose parents have higher education (Bauer et al., 2014).

1.3 The present study

In this pilot study, we explored the types and emergence of prosocial behavior in children. To our knowledge, there is no prior study in Iceland investigating the presence of prosocial behaviors in the first three years of life. Thus, we examined at what age infants first showed prosocial behaviors and whether there were differences in parents' earliest observation of prosocial behaviors, including helping, sharing, comforting, and cooperating. Furthermore, we also investigated the effects of parents' SES levels and prosocial socialization goals on their earliest recollection of their infants' prosocial behavior. Here we explored the association between parental SES and socialization goals. Then, we examined

whether higher parental SES and prosocial socialization goals were associated with earlier recollection of infants' prosocial behaviors including helping, sharing, comforting, and cooperating.

2. Method

2.1 Participants

Participants included a total of 66 parents with children between the ages of 0-3 years. The mean age of parents was 31.53 years (SD = 5.01, Range = 23 – 44). The mean age of children (as reported by their parents) was 22.42 months (SD = 9.95, Range = 2– 41). Majority of the respondents were mothers (n = 65, 98.5%) who identified as their infant's primary caregiver. Almost half of the participants reported their marital status as cohabitation (n = 32, 48.5%), while 39.4% of participants were married (n = 26), and 12.1% were single (n = 8). Parents reported their highest level of education as a graduate degree (Master's degree) level of education (36.4%). A total of 17 parents reported their highest level of education as undergraduate degree (25.8%), while 16 reported having only completed high school (24.2%). Only 4 parents indicated their highest level of education as having completed primary school only (6.1%), meanwhile 3 parents reported their highest level of education as having attained a diploma degree (4.5%), and 2 parents stated their highest level of education as having earned a vocational degree (3%).

Parents also indicated their household income, which ranged from below an income of ≤500.000 kr. to above the income of ≥1.200.000 kr. ISK. The vast majority of the parents indicated their household income as below an income of ≤500.000 (51.5%). A total of 22 parents reported their household income as an income within the range of 500.000 kr. – 800.000 kr. (33.3%), nine parents indicated having a household income as an income ranging

between 800.000 kr. – 1.200.00 kr. (13.6%), and only one parent indicated having a household income as above the income of 1.200.000 kr. (1.5%).

2.2 Measures

The questionnaires and scales used in conducting this research were the following: Family background questionnaire, Parent Prosocial Interview, and the Prosocial Socialization Goals Questionnaire.

2.2.1 Family background questionnaire

This interview concerns infants' prosocial behavior including helping, sharing, comforting, and cooperating. There are several questions regarding infants' prosocial behaviors and parents' reasoning as to why and at what age infants should be expected to partake in these prosocial behaviors. It also includes questions about at what age the child first showed prosocial behavior, as well as how often and how the child shows prosocial behavior. For the purpose of the current study, we used the responses for at what age children first showed each of the prosocial behavior types.

2.2.2 The Parent Prosocial Interview (Breeland et al., 2021)

This interview concerns infants' prosocial behavior including helping, sharing, comforting, and cooperating. There are several questions regarding infants' prosocial behaviors and parents' reasoning as to why and at what age infants should be expected to partake in these prosocial behaviors. It also includes questions about at what age the child first showed prosocial behavior, as well as how often and how the child shows prosocial behavior. For the purpose of the current study, we used the responses for at what age children first showed each of the prosocial behavior types.

2.2.3 The Prosocial Socialization Goals Scale (Giner Torréns & Kärtner, 2017a)

For the purpose of the current study, we used the Prosocial Socialization Goals Scale of The Maternal Socialization Goals Questionnaire. This scale includes four items that assess toddlers' helping behavior at home (e.g., "During the first three years of life children should learn to help others"). All items were rated on a 4-point Likert scale ranging from I agree … not at all (1) to completely (4). In the current study, the overall averaged scale score of the Prosocial Socialization Goals Scale was 2.996 (SD = 0.585, Range = 1.75 - 4.00), with an acceptable internal consistency ($\alpha = 0.77$).

2.3 Procedure

We first translated the English version of the Parent Prosocial Interview and the Prosocial Socialization Goals Scale into Icelandic, and then back translated into English to ensure that the original translation was correct. After that, all three questionnaires were combined into one online survey. The survey was created by using Qualtrics and participation was accessible through both computers and smartphones. The sample was recruited by advertising the research online in various media platforms (e.g., Facebook, Instagram, university website). The advertisement included brief information about the research and requested for parents (particularly mothers) who have a 0-3 year old child to partake in the study. It also included the estimated time of participation of completing the survey, which was approximately 10-15 minutes. An informed consent statement was presented to all participants before taking part in this research. Participation included agreeing to the informed consent along with answering the survey questions. All analysis of the data was carried out by using the IBM SPSS software.

3. Results

We ran descriptive statistics to examine the types and earliest recollection of prosocial behaviors in children, and correlational analysis to examine the relationship between parental SES, prosocial socialization goals, and earliest recollection of prosocial behaviors.

3.1 Types and Earliest Recollection of Prosocial Behaviors

We asked parents to report at what age their children first showed prosocial behaviors. Some parents, however, did not provide answers for the earliest observed age of their children's prosocial behavior. Additionally, one parent reported inconsistent information for cooperative behavior, so we excluded this data. The percentages of those parents were: 16.7% for helping behavior, 16.7% for sharing behavior, 21.2% for comforting behavior, and 19.7% for cooperative behavior. There were also parents reporting that they had never observed these behaviors in their infants, they were: 6.1% for helping behavior, 6.1% for sharing behavior, 7.6% for comforting behavior, and 9.1% for cooperative behavior. We included these parents in the dataset for the relationship between SES and prosocial socialization goals, while excluding for analyses including prosocial behaviors.

For the rest of the parents who reported that they observed prosocial behaviors, the mean of earliest observation of helping was 12.16 months (*SD* = 2.03, *Range* = 5-12 months), comforting was 12.94 months (*SD* = 1.495, *Range* = 6-12 months), sharing was 11.39 months (*SD* = 2.18, *Range* = 4-12 months), and cooperative behavior was 10.87 months (*SD* = 3.059, *Range* = 2 -12 months). Overall, cooperative behavior was found to be the earliest recollected type of prosocial behavior, followed by sharing, helping, and comforting.

3.2 SES, Prosocial Socialization Goals, and Earliest Recollection of Prosocial Behaviors

First, we created a SES composite of demographic variables including education (the highest level of education completed), household income, and perceived SES. For the reason that these variables have different measurement units (i.e., it is a 7-likert in education, but 4 likert in SES, and 10-likert in perceived SES), we standardized the values for each scale, and then averaged the standardized values to create a SES index (M = .00, SD = .808, Range = -1.81–1.82).

Next, we examined the correlations between parental SES, prosocial socialization goals, and earliest recollection of prosocial behaviors (see Table 1 for correlations between the variables). There was no significant correlation between parental SES and prosocial socialization goals. SES also did not significantly correlate with the earliest recollection of prosocial behaviors. Prosocial socialization goals were exclusively marginally correlated with cooperating behaviors; parents with higher prosocial socialization goals reported the earliest recollection of their children´s cooperating behaviors ($r = -.239$, $p < .091$). There was no further significant correlation between variables.

Table 1

Correlation between variables

	SES Composite	Prosocial Socialization Goals
Prosocial Socialization Goals	-.006 (*n* = 64)	-
Helping	-.163 (*n* = 55)	-.225 (*n* = 53)
Sharing	-.093 (*n* = 55)	-.204 (*n* = 53)
Comforting	-.155 (*n* = 52)	-.129 (*n* = 51)
Cooperating	-.120 (*n* = 52)	-.239^{+} (*n* = 51)

Note. $+ p < .10$

4. Discussion

This pilot study was conducted with the aim of exploring prosocial behavior among infants in Iceland and the plausible contributing immediate factors involved in its development. We investigated parents' recollection of their infants' prosocial behavior, e.g. at what age infants first showed each type of this behavior (helping, sharing, comforting, and cooperating). We also explored the association of SES levels and parents' prosocial socialization goals with all four behaviors.

Our findings show that cooperative behavior is the first observing type of prosocial behavior, followed by sharing, helping and comforting. Sharing and helping behaviors emerged within the first year of life, supporting the earlier studies showing the same pattern (e.g., for helping Dahl, 2018; for sharing Malti et al., 2016). Compared to these two prosocial behaviors (helping and sharing), comforting and cooperating are complex behaviors as they require understanding emotions and shared goals, respectively (e.g., Dunfield, 2014). For instance, comforting behavior is the last of the four types of prosocial behavior to emerge (Biro, 2023). Our results were in line with these previous findings, as comforting was shown to be the last observing type of prosocial behavior, additionally due to the fact that parents' reported having observed this behavior right after the first year of their infants' life. Cooperative behavior has been stated to emerge at the first year of infants' life (Breeland et al., 2021; Brownell & Carriger, 1990). We also supported the existing evidence in view of the fact that parents first observed this behavior right before the 12-month age mark. Surprisingly, this form of prosocial behavior was the earliest to emerge. The earliest recollection of cooperative behavior ranged from 2 to 12 months. One potential issue was misinterpretation of the explanations of cooperating behaviors used in this study. We excluded the answer of

one parent as the answer was inconsistent by reporting that their infant had shown cooperative behavior at the age of being a newborn. Next, there was another parent reporting the earliest recollection as 2 months; but, we kept this parent in the analysis given the small overall sample size, and due to the fact that there were 19.7% of parents that did not provide an answer for their earliest recollection of cooperative behavior. On top of that, the next reported age was 3 months; three parents reported that their infant had cooperated at the age of 3 months and gave valid explanations, e.g. by participating in social games (for example, "Peek-a-boo"), which is one of the examples we provided for cooperative behavior in the questionnaire. Given that, this might have slightly skewed the results for the earliest recollection.

There is scarcity of research about the relationship between SES and infants' prosocial behavior, to our knowledge. However, one study with preschoolers demonstrated that primary school aged children were more selfish, less altruistic and shared less frequently if their parents had lower levels of education, in contrast to children of parents who had higher levels of education (Bauer et al., 2014). Relying on this finding and others in socialization goals (see Bradley & Corwyn, 2002; Hoff et al., 2002; Roubinov & Boyce, 2017; Şengönül, 2022, for more details), we expected to find that higher SES levels would be associated with higher prosocial socialization goals, and therefore be related to parents' earlier recollection of their infants' prosocial behavior. However, we did not find any relationship between the variables of interest. One potential issue with regard to SES in Iceland is the low variability. According to Hagstofa Íslands (n.d.a), in the year of 2021, approximately one-third of individuals in Iceland had an income between 600.000 - 800.000 kr. ISK (32.7%). Moreover, in the same year, 60.700 women in Iceland aged between 25-49 years are educated, of which 33.900 (55.84%) have a graduate degree or an undergraduate degree level of education (Hagstofa Íslands, n.d.b). Indeed, there was low variability in SES levels in this sample, almost half of

the parents reported their household income as ≤ 500.000 kr. Similarly, the majority of the parents (62.2%) had an education of the higher end (e.g. either a graduate or an undergraduate degree). In light of this, parents living in Iceland may possibly be alike considering education levels and income, not providing enough variability to catch the association of SES with other dimensions. For future studies, research should be conducted on a larger sample size, including families of low-SES and high-SES to obtain greater variability.

We expected to see parents' prosocial socialization goals to be correlated with earliest recollection of each type of prosocial behavior. Nonetheless, this relationship was only marginally related to cooperative behavior ($p < .10$). Most parents were on the higher end of this scale, preventing us from detecting enough variability in this behavior. This issue might be a potential factor for the lack of statistically significant associations. Alternatively, prosocial socialization goals might be related to the frequency, but not the emergence of prosocial behaviors. Indeed, there are a few findings showing that socialization goals are associated with the frequency of helping behaviors (Fonseca et al., 2018; Giner Torréns & Kärtner, 2017b). Furthermore, Schuhmacher and Kärtner (2015) showed that mothers' expectations of prosocial behavior significantly predicted childrens' level of cooperative behaviors.

4.1 Limitations and future studies

This pilot study goes beyond previous research by comparing the emergence of different kinds of prosocial behaviors, and their relation to two proximal factors, SES and prosocial socialization goals, and future studies may take our findings even further.

First, SES appears to have no apparent correlation with infants' prosocial behaviors (e.g., helping, sharing, cooperating, and comforting). This lack of correlation may be

attributed to the limited sample size used in the study. We tried to create variability in the sample by combining the highest level of education completed, household income, and perceived SES. Nevertheless, income and education levels displayed low variability, as half of the sample stated the same income level as below an income of ≤500.000 and the majority reported their highest level of education as a graduate degree or an undergraduate degree level of education. As a result, detecting the association of SES with socialization goals and earliest recollection of prosocial behavior was difficult.

Second, this study relies exclusively on retrospective data. The benefits of retrospective data are its convenience and availability (Bell & Bell, 2018). Nevertheless, it has its limitations, as it relies on the respondents' ability and willingness to recall and accurately date relevant information (Manzoni et al., 2010). In our case respondents could have forgotten or misplaced episodes. For future studies, observational and longitudinal studies over the first 2 years of infants' lives might be beneficial to a greater extent with regard to minimizing memory effects, than relying on recollection and memory.

Third, there could have been possible conceptual issues that could have led to parents' misunderstanding or misinterpretation of the meaning or definition of the prosocial behaviors (e.g., helping, sharing, comforting and cooperative behaviors) in respect to infants. For example, in the open-ended questions of our data, one parent gave the answer: "My child helps changing a diaper'', for the question: "Provide an example of how your baby cooperates''. Another parent explained that their child "Eats his/her dinner" for this same question. The former answer would better fit into the category of helping behavior, and the latter does not fall into any category of prosocial behaviors, by any means. This suggests that some parents had indeed misinterpreted the definition of cooperative behavior, specifically.

5. Conclusion

The main goal of this exploratory pilot study was to examine parents' earliest recollection of their infants' prosocial behavior (e.g., helping, sharing, comforting, and cooperative behavior), and investigate the role of SES levels and parents' prosocial socialization goals in their earliest recollection of their infants' prosocial behavior. Our results revealed that the earliest form of prosocial behavior observed and reported by parents was cooperative behavior, followed by sharing, helping, and comforting, respectively. Moreover, SES appeared to have no apparent relation to the earliest recollection of infants' prosocial behaviors (e.g., helping, sharing, cooperating, and comforting), nor to parental socialization goals, since parents in Iceland exhibit evident similarities in terms of education and income. Alternatively, prosocial socialization goals were marginally correlated with cooperating behavior, which implies that socialization goals might be related to the frequency, but not the emergence of prosocial behaviors. Altogether, these findings present an interesting topic of discussion for further exploration and future studies, attributing to enhancement of the understanding of how prosocial behavior unfolds over time.

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