DEVELOPMENT OF ALTRUISM IN EARLY CHILDHOOD

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Development of Altruism in Early Childhood

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Thesis Abstract

Pınar Engin, "Development of Altruism in Early Childhood"

The aim of the present study was to observe development of altruism in early childhood. To gain a deeper understanding of young children's altruism, this study questioned whether a) young children are capable of displaying altruistic behaviors, b) altruistic behaviors increase with age in early years of life, and c) altruism is a multidimensional phenomenon comprising different types of altruistic behaviors.

One hundred and seventy-eight preschoolers participated in the study. Altruistic behaviors of children at the ages of 3, 4, and 5 were studied cross-sectionally with a structured observational altruism task. Each child was observed in terms of helping, sharing and donation behaviors while interacting with a same-sex and same-age peer in an experimental setting.

The results indicated that even children as young as 3 years of age are capable of displaying altruistic acts. Many preschool children exhibited different types of altruistic behavior. The number of children who behaved altruistically increased with age, but this relationship was valid mostly for girls. Transition from age 3 to age 4 was identified as a critical period for the development of altruism. While helping and donation behaviors were found to be more alike and to follow similar developmental pathways, sharing behavior differed from them with regard to frequency, as well as its earlier onset and its relation with age. Finally, the present study introduced an age-appropriate, structured observational task to study altruism with young children.

Keywords: altruism, altruistic behavior, helping, sharing, donation, development.

Tez Özeti

Pınar Engin, “Erken Çocuklukta Özgeciliğin Gelişimi”

Bu araştırmanın amacı, özgeciliğin erken çocuklukta gelişimini incelemektir. Erken çocukluk dönemindeki çocukların özgecil davranışlarını daha derinden anlamak için a) küçük çocukların özgecil davranışlar sergilemeye yetkin olup olmadıkları, b) erken çocuklukta özgecil davranışın yaşla ilişkisi, c) çok boyutlu bir fenomen olarak özgeciliğin farklı davranış biçimlerinden oluşup oluşmadığı sorgulanmıştır.

Çalışmaya 178 anaokul çocuğu katılmıştır. 3, 4, ve 5 yaşlarındaki çocukların özgecil davranışları çapraz kesit dizaynı ile denetimli bir gözlemsel deneyde çalışılmıştır. Her çocuğun aynı yaş ve cinsiyetten bir yaşıtı ile deneysel ortamda ilişkisi yardım etme, paylaşma ve bağış yapma davranışları açısından incelenmiştir.

Sonuçlar, 3 yaşındaki çocukların dahi özgecil davranışlar gösterdiklerine işaret etmiştir. Pek çok anaokul çocuğu farklı tipteki özgecil davranışları sergilemiştir. Özgecil davranışlar gösteren çocukların sayısının yaşla arttığı, fakat bu ilişkinin daha çok kızlar için geçerli olduğu görülmüştür. Üç yaştan dört yaşa geçişin özgeciliğin gelişimi açısından kritik bir dönem olduğu belirlenmiştir. Yardım etme ve bağış yapma davranışlarının birbirine daha benzer olduğu ve daha yakın gelişimsel süreçlerden geçtiği tespit edilmiş, paylaşma davranışının görülme sıklığı, görülme yaşı ve yaşla ilişkisi açısından diğer özgecil davranışlardan ayrıştığı bulunmuştur. Son olarak bu araştırma, erken çocuklukta özgecil davranışın çalışılması için bu yaş grubuna uygun, denetimsel bir gözlem yöntemi sunmuştur.
Anahtar sözcükler: özgecilik, özgecil davranış, yardım etme, paylaşma, bağış yapma, gelişim.

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CHAPTER I: INTRODUCTION

Definition of Altruism

Altruism is a key concept in human socialization and it is generally defined as "a behavior carried out to benefit another without anticipation of rewards from external sources' (Macaulay & Berkowitz, 1970, p. 3). More precisely, as Eisenberg and Fabes (1998, p. 702) defined it, altruistic behavior is "intrinsically motivated, voluntary behavior intended to benefit another: acts motivated by internal motives such as concern for others or by internalized values, goals and self-rewards rather than by the expectation of concrete or social rewards or the avoidance of punishment".

The role of evolutionarily based dispositional or biological factors in human altruism is discussed widely (e.g. Fehr & Rockenbach, 2004; Hoffman, 1981; Sunar 2009). Dawkins (1989) proposed that altruism may be a product of the "selfish gene", and Hamilton (1964), Trivers (1971) and Williams (1966) suggested evolutionary bases for altruism and its reflections in the social world. Evolutionary theorists mentioned "possibility of psychologically altruistic mechanisms operating in a genetically egoistic manner" (Kruger, 2003, p. 123-124). Even if altruistic actions may be harmful or at least rewardless for the actor in terms of her* own survival and reproduction, according to evolutionary framework, if such behaviors increase the survival and reproduction of shared genes over the long term, altruism may evolve across generations (Hamilton, 1964), "through selective accumulation of behavioral tendencies transmitted genetically" and for humans also "through

* Gender-specific pronouns are randomly used throughout the text.

sociocultural evolution, the selective accumulation of behavior retained through purely social modes of transmission" (Howard & Piliavin, 2000, p. 115). Unlike most other animals, human altruism is apparently not restricted to kin but it extends to genetically unrelated individuals (Fehr & Rockenbach, 2004). Reciprocity seems to be responsible for this kind of altruism ("reciprocal altruism") (Trivers, 1971), which is supposed to be an important factor that gives rise to modern complex human social life (Rilling, Gutman, Zeh, Pagnoni, Berns, & Klits, 2002) via "histories of benefit [that] build over time through processes of reciprocal exchange" (Zahn-Waxler, Schiro, Robinson, Emde, & Schmitz, 2001, p. 142). Therefore, socialization practices and social environment surely have a great impact on the maintenance, permanence and prevalence of altruistic behaviors of humans (Aronfreed, 1970). It seems that naturally selected, adaptive biological tendencies for altruism shape many institutions and social practices, which in turn feed altruistic behaviors in society through the mechanisms of sociocultural evolution, and an ongoing interplay between biology and social environment occurs (see review by Sharabany & Bar-Tal, 1982).

Empathy is also a crucial mechanism for altruism, since it helps transmission of another person's experience and sets the base for "reinforcing affective consequences of altruistic behavior" (Aronfreed, 1970, p. 105). Radke-Yarrow, Scott and Zahn-Waxler (1973, p. 240) gave examples of institutionalized types of altruism ("such as charities, volunteer services, rescue missions"); however, they emphasized that the paradox of giving without expecting a benefit is itself a kind of benefit that fulfills the affective needs of the giver. Darley and Latané (1970) put it this way:

> The observer, in helping the victim, helps himself. He is motivated not to relieve the victim's suffering but to alleviate his own sympathetic distress. Whether this primitive

> passive sympathy is instinctive or is the result of complicated classical or instrumental conditioning, its arousal motivates a person to helping action and its termination rewards those actions (p. 83).

Overall, it is apparent that "true altruism – acting with the goal of benefiting another – does exist and is part of human nature" (Piliavin & Charng, 1990, p. 27). But why and how does an individual decide to do a favor for a genetically unrelated *other* in spite of the cost of the favor; how does it affects social interactions and how does the social environment foster it; what motivates a person to put aside his own benefits and be concerned for another's needs, wishes or call for help; and to what extent is altruism, which seems to require several cognitive capacities as well as well-developed empathic abilities, a part of human nature? Those are the critical questions that draw the interest of researchers, theorists and philosophers who have investigated the roots and mechanisms of altruism and its role in social life for many years. The popularity of altruism in various scientific disciplines is not a surprise, because as Radke-Yarrow, Scoot and Zahn-Waxler (1973, p. 241) suggested, "in the best of all societies, one would hope that the genuine kind of altruism would be high in the hierarchy of values".

Altruism in Childhood – Approaches and Theories

To understand the nature of altruism, it is crucial to study altruism with a developmental perspective. Only with a developmental perspective can we gain a fuller understanding about the roots of altruism and discover whether altruism is a personality trait, an inherited characteristic that follows a developmental pathway, or a learned skill that increases with practice and reinforcement.

Altruism in childhood has been studied mainly under the heading of prosocial behavior. Three main approaches, namely, cognitive theory, evolutionary theory and social learning theory, have examined altruism extensively as a subtype of prosocial behavior (see review by Eisenberg & Fabes, 1998).

Cognitive developmental theorists have usually studied altruism in childhood in relation to development of moral reasoning, perspective taking and theory of mind. Parallel to the theory of Piaget (1963), inability to decenter and take perspectives of others in the preschool period is believed to be responsible for children's egocentric mode of thought and immature moral judgment which leads to their selfish acts. Consequently, with increased ability to decenter with age, children start to comprehend reciprocal sociocentric thought (Rubin & Schneider, 1973). In fact, later studies discovered earlier signs of understanding others' mental state in children as young as 3 years old (e.g. Sullivan & Winner, 1993; as cited in Cole & Cole, 2001). Kohlberg's (1969) hierarchical stages of moral development were based on cognitive functions, more precisely, perspective taking and reasoning abilities. Buckley, Siegel and Ness (1979) also found support for the relationship between altruism, perspective taking and empathy. On the other hand, a comprehensive meta-analysis conducted by Underwood and Moore (1982) indicated an association between altruism and all kinds of perspective taking abilities (moral, perceptual, social), except for those stemming from empathic abilities. Recently, Lourenço (1990, 2004) proposed and tested a Piagetian approach to explain development of prosocial behavior in children: he stated, "with increasing age children should be more likely to think of prosocial acts in terms of gain construction than cost perception" (p. 242). Since Piaget (1963) believed that to take into account others' points of view, children have to reach the concrete operations stage (7-12 years of

age), studies about childhood altruism have mainly focused on middle childhood in the cognitive approach (Berk, 1983).

Evolutionary theorists aim to understand to what extent human altruism is part of our biological predisposition and what kind of survival advantage it brings to the human species so that it evolved (Fehr & Fischbacher, 2004). They try to find out the role of altruism in our complex social life and emphasize its importance in the cooperation, reputation, reciprocity triad. Therefore, early demonstrations of altruistic behaviors in very young children might be interpreted as a sign of an evolved biological predisposition of humankind for altruism (Benenson, Pascoe, & Radmore, 2007). Recently, in a series of very interesting experiments that compared 1½-year-old infants with chimpanzees in terms of instrumental helping, it was found that very young children as well as chimpanzees, even in novel situations, toward unfamiliar others and in the absence of external rewards, helped a needy person to achieve a goal, suggesting they are both capable of understanding others' goals and have probably intrinsic altruistic motivation to help them (Warneken, Hare, Melis, Hanus, & Tomasello, 2007; Warneken & Tomasello, 2006). Based on those results, from an evolutionary perspective they claimed that although human altruism is very complicated and sophisticated, even from infancy, and reflects advanced cognitive skills as well as early socialization practices emphasizing helping, humans are not the only primates to show non-kin altruism, and "the roots of human altruism may go deeper than previously thought" (Warneken et el., 2007, p. 1418). Harbaugh and Krause (2000) found that in general, altruistic behaviors of young children were highly comparable with altruistic behaviors of adults, which were measured using the Dictator Game and the Public Goods Game. Based on this finding, they suggested

that “the taste for altruism must be, if not innate, at least determined by very early experience” (Harbaugh & Krause, 2000, p. 95).

Social learning theory has underlined the role of material, social and self-reward/reinforcement, socialization practices and social interactions, modeling and imitation for the development of altruism in childhood (see review by Rushton, 1976). Social cognitive theory assumes that moral standards are shaped by various resources, including social models and instructions as well as feedback and reinforcement from others; and through the course of development, they come to be governed by self-initiated mechanisms, including self-regulation and self-approval/disapproval (Bandura, 1989). Like all other behaviors, altruism is thought to be learned via modeling and imitation (Radke-Yarrow, Scott, & Zahn-Waxler, 1973; Radke-Yarrow & Zahn-Waxler, 1976); and its development can be fostered by external and internal rewards (Bryan & London, 1970). However, it is important to note that there should not be overt external rewards following altruistic behavior; rather, as Aronfreed (1970, p. 112) emphasized, when the child realizes the positive or comforting effects of her own behaviors on other people, “child’s own empathically reinforcing changes of affective state” itself becomes reinforcement for displaying altruistic acts.

Parallel to this idea, role of internalization of social norms in the development of altruism has been frequently emphasized in the prosocial behavior literature. As Aronfreed (1970) stated, altruism is neither completely independent from inner (affective) reinforcements nor is it a kind of social exchange. So if there is no external control or direct beneficial outcome, what might be the underlying motives for displaying altruistic behaviors, or what might be those inner, affective reinforcements that foster altruism? Internalized control, acquisition and

internalization of norms of reciprocity and responsibility seem to be responsible for feelings of satisfaction, pleasure and/or increased self-esteem as a kind of self-reward after behaving altruistically (Aronfreed, 1969, 1970; Mussen & Eisenberg-Berg, 1977). Therefore, when and how those social norms are acquired and internalized has remained as a critical question for developmental psychologists who seek the roots of altruism. Mussen and Eisenberg-Berg (1977) suggested that with age, children's altruistic behaviors become more dependent on internalized norms rather than external reinforcements or punishments. On the other hand, they emphasized that learning social norms is only a prerequisite for displaying altruistic behaviors; children also need certain cognitive functions like understanding and interpreting others' needs and comprehending proper behaviors. Macaulay and Berkowitz (1970) stated that in order to display altruistic behavior, one first should aware of that his own acts have consequences for others; and then he should feel responsible for others as he realizes he can change another's state or fate.

However, recent studies suggested that children even in early childhood exhibit "real" altruistic behaviors in the absence of external rewards, reinforcements, punishments or even witnesses (*see* next section) which may be a sign of internal and early mechanisms for altruism. Darley and Latané (1970) criticized normative approach for having after the fact explanations and weak predictive power. Hoffman's (1975) theory of empathic development shed light on innate empathic capacity that can be observed even in infancy and its developmental progress that allow to elaborate prosocial repertoire. Hoffman (1975) mentioned reflexive crying of infants as the very first sign of biologically based empathy to prove emergence of empathic distress much earlier than cognitive differentiation of self and other. According to him, as child acquires increased competence in role-taking abilities and

differentiation between self and other with age, his self-distress that stems from others' distress begins to transform into "sympathetic distress" which gives rise to reciprocal, altruistic and comforting behaviors of children. Hoffman (1975) stated that:

> Perhaps the more fundamental reason for viewing this empathic distress as basic in the development of altruistic motivation despite its egoistic components is that it shows that we may involuntarily and forcefully experience emotional states pertinent to another person's situation rather than to our own—that we are built in such a way that our own feelings of distress will often be contingent not on our own but on someone else's misfortune (p. 614).

Denham (1986) found support for the relationship between altruism and affective perspective taking which was supposed to be bases of empathy at children even as young as 2 and 3 years of age. Zahn-Waxler et al. (2001) reported early emergence, individual differences and continuity in terms of empathic ability in MZ and DZ twins who were observed longitudinally from 14 months to 3 years of age. Eisenberg and Miller (1987) conducted meta-analyses for the relationship between empathy and prosocial behaviors and found low-to-moderate correlations between empathy and altruism for children; they criticized means of assessment of empathy for downsizing the relation between empathy and prosocial behavior, though. Hoffman's idea that empathy is the motivating force for altruism has gained support from recent research even for very young children (Knafo, Zahn-Waxler, Hulle, Robinson, & Rhee, 2008; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Some studies have presented counter arguments against this view in the literature of adulthood altruism, though (e.g. Maner, Luce, Neuberg, Cialdini, Brown, & Sagarin, 2002). However, a recent study has proposed a more complementary relationship between emotional/empathic and cognitive determinants of prosocial behavior (Malti, Gummerum, Keller, & Buchmann, 2009). Both moral motivation, which includes moral judgment and reasoning abilities, and sympathy were found to be related to

prosocial behavior, separately. More importantly, an interaction between those cognition-based and empathy-based competencies was detected, at least at the beginning of middle childhood. Zahn-Waxler et al. (1992) evaluated several previous studies together with studies conducted by their own group and concluded that:

> Even children as young as 2 years old have (a) the cognitive capacity to interpret the physical and psychological states of others, (b) the emotional capacity to affectively experience the other's state, and (c) the behavioral repertoire that permits the possibility of trying to alleviate discomfort in others (p. 127).

In conclusion, it seems that development of altruistic behaviors in children is subject to several cognitive functions, social and emotional perspective taking abilities, social models and reinforcement, empathic capacity and internalization of social norms, all of which might be fostered by innate tendencies and social environment as well as their interactions.

Review of Altruism Studies with Young Children

Although prevalent opinion is that young children are generally selfish and most of the studies have focused on the middle childhood period to observe altruism, even young children may be capable of displaying altruistic acts (Zahn-Waxler et al., 1992), and with appropriate methodologies, it seems possible to examine the scope, limitations and true nature of early childhood altruism. In the meta-analysis conducted by Fabes and Eisenberg (1996; as cited in Eisenberg & Fabes, 1998), different age groups from infancy to early adulthood were evaluated in terms of the relationship between age and prosocial behavior. The results showed that prosocial behaviors increase with age; however, a significant relationship was not found for preschoolers and infants. This is usually interpreted as the absence of prosocial development in this age period; however, as Zahn-Waxler et al. (2001, p. 142)

suggested, it might be caused by limited research on prosocial development and early childhood which leads to "less established empirical literature from which to derive reliable, valid generalizations".

A great proportion of studies investigating prosocial behaviors and related concepts in early childhood were conducted by Carolyn Zahn-Waxler, Marian Radke-Yarrow and their colleagues. Zahn-Waxler et al. (2001) stated that most of the research was about the role of socialization processes in development of prosocial behavior and drew attention to the need for studies about biologically based dispositional factors, such as twin studies and studies with infants and young children. In the longitudinal studies conducted for this purpose (Zahn-Waxler et al., 1992, 2001; Zahn-Waxler, Robinson, & Emde, 1992), subjects were MZ and DZ twins in the first years of life; and their empathic and prosocial reactions to another's distress were examined via naturalistic observations, empathy/distress simulations and maternal reports. The results indicated emergence of empathic concern and prosocial behaviors including helping, sharing, cooperation, conscience and comforting at about age 2, as well as an increment in frequency and variety of those behaviors with age. Moreover, genetic influence and stable individual differences were reported. All of those studies provided strong evidence for very early and age-dependent prosocial development, which suggested a disposition toward altruism as a heritable component. However, as Zahn-Waxler et al. (2001, p. 157) emphasized, it may not be due to direct control of genes over behaviors; "rather, genes code for enzymes, structural proteins, and regulatory factors that, in the context of the environment, influence patterns of brain chemistry and neurohormonal systems."

The ability of very young children to display instrumental helping was tested by the experimental procedure developed by Warneken and Tomasello

(Warneken et al., 2007; Warneken & Tomasello, 2006, 2007). Children's helping behaviors were examined via special tasks that required children to understand the intentions of another, to comprehend her needy position and finally take appropriate action to help her to achieve her goals with an altruistic motive. Infants were able to help and act altruistically toward others in need at 18 month of age, as mentioned previously, (Warneken et al., 2007; Warneken & Tomasello, 2006), as well as when they were 14 months old (Warneken & Tomasello, 2007). However, when 14-month-olds and 18-month-olds were compared, it was found that younger infants' instrumental helping was limited to more easily identifiable intentions and they could not intervene effectively when the goal of the needy person was not clear. The results were interpreted as showing the altruistic capability of very young children and its relation to perspective taking ability. More interestingly, in another research with children in the second year of life, it was observed that children who had previously got extrinsic material reward after displaying helping behavior were less likely to help later than those who got no reward or received only verbal praise (Warneken & Tomasello, 2008). The authors explained the results with the "overjustification effect," that is, suppression of intrinsically motivated behaviors by extrinsic rewards, and they claimed that very early development of altruism should be intrinsically motivated as part of human hardware.

Parallel to those findings, in a recent research in which prosocial behaviors of children were observed longitudinally, Persson (2005) found that all kinds of prosocial behaviors increased with age from the beginning to the end of early childhood. In this study, in terms of underlying motive, three kinds of prosocial behaviors (requested, altruistic and non-altruistic) were observed. The results revealed that there was quite low internal consistency between different types of

prosocial behaviors, suggesting conceptual heterogeneity; therefore, drawing a clear distinction between different kinds of prosocial behaviors is fundamental. In addition, just as it was in infancy (e.g. Zahn-Waxler et al., 1992, 2001; Zahn-Waxler, Robinson, & Emde, 1992), altruism among all other prosocial behaviors was found to be the only stable prosocial behavior over time in early childhood, too. Persson (2005, p. 89) argued that since empathic ability is an essential factor that fosters altruism (Batson, Fultz, Schennenrade, 1987; as cited in Persson, 2005; Hoffman, 1975), consistency of altruistic behavior might be a sign of children's "disposition to empathic concern". Furthermore, the study of Eisenberg, Guthrie, Murphy, Shepard, Cumberland, and Carlo (1999) demonstrated an impressive example of consistency of prosocial behaviors as a personality disposition that remains stable over years. Prosocial and other related behaviors of 32 participants were measured with several different techniques from the preschool years to 23-24 years of age. The results suggested stability of altruism from early years of life as an individual difference. By emphasizing interaction of nature and nurture, Eisenberg et al. (1999, p. 1369) concluded, "even by preschool, there seem to be emotional, cognitive, and regulatory under-pinnings to individual differences in prosocial responding".

Not only development of empathic ability but also "greater ability in perspective taking, broader knowledge of cultural norms, increased social responsibility and competence or enhanced moral reasoning capabilities" contribute to the development of altruism in children with age (Piliavin & Charng, 1990, p. 38). Most of the studies have come to the conclusion that altruism increases with age (see reviews by Eisenberg & Fabes, 1998; Krebs, 1970; Piliavin & Charng, 1990; Rushton, 1976). As it is presented, this age-dependent increment was reported in most of the studies, subjects of which included preschool children and very young

children (e.g., Persson, 2005; Zahn-Waxler et al., 1992, 2001; Zahn-Waxler, Robinson, & Emde, 1992). Interestingly, in some of the studies, although youngsters were found to display altruistic acts frequently, those behaviors were not found to be clearly increasing with age (e.g. Bar-Tal, Raviv, & Goldberg, 1982; Buckley, Siegel, & Ness, 1979; Eisenberg-Berg & Hand, 1979; Radke-Yarrow & Zahn-Waxler, 1976). In the study of Bar-Tal, Raviv and Goldberg (1982), different forms of helping behavior were observed across all age groups; however, a linear increment through age groups was not found. Meta-analysis of Fabes and Eisenberg (1996; as cited in Eisenberg & Fabes, 1998) indicated increment of prosocial behavior with age, except for infancy and preschool period. In the study of Eisenberg-Berg and Hand (1979), only sharing behavior was found to be correlated with age for preschoolers. In addition, in the experiment of Radke-Yarrow and Zahn-Waxler (1976), age and prosocial behaviors were not found to be significantly related. They explained the results as neutralization of competence in empathic and role taking abilities with competitiveness and achievement orientation, which also increase with age. It seems that findings of studies in terms of age dependent increment in altruistic behaviors in early childhood are not as clear and consistent as findings from middle childhood period. In short, although preschool children display several forms of altruistic actions, investigations of the relation between age and the extent and forms of altruism in the early years of childhood have yielded inconsistent findings.

The results of studies in terms of the relationship between sex and prosocial behaviors are rather more consistent. In most of the studies, sex differences in early childhood were not reported (e.g. Benenson, Pascoe, & Radmore, 2007; Eisenberg-Berg & Hand, 1979; Kakavoulis, 1998a, 1998b; Radke-Yarrow, Scott, & Zahn-Waxler, 1973; Radke-Yarrow & Zahn-Waxler, 1976; Rubin & Schneider, 1973).

Absence of sex difference was usually explained by role of cognitive abilities that subject to maturation or mutual biological tendencies for empathy. Iannotti (1985) found sex differences only in teacher ratings but not in naturalistic observations and laboratory tasks. He drew attention to sex role stereotypes and thus susceptibility of parents and teachers as raters of altruism of children. Nevertheless, some studies found weak-to-moderate effects of sex favoring girls in terms of prosocial behaviors in the early years of life (e.g. Knafo & Plomin, 2006; Zahn-Waxler et al., 1992, 2001). Explanations for observed gender differences also varied, but primarily they focused on socialization practices, gender roles and evolutionarily based sex differences. Zahn-Waxler et al. (1992) who studied with infants explained the slight gender difference they found as a result of both biological predispositions for future nurturer role of girls and socialization practices which push them to be sensitive to others' needs and feelings. Zahn-Waxler et al. (2001), referring to Hoffman's theory, stated that girls, who might have higher levels of self-distress as well as empathic ability than boys, may shift faster from self-directed distress to other-directed concern; thus, start to show caring, comforting and altruistic behaviors earlier.

Mussen and Eisenberg-Berg (1977) underlined the crucial role of moral reasoning, empathy and role taking skills in the development of altruism. They pointed out that to act altruistically, a child must perceive and understand emotions of others and the situation precisely; elaborate their needs and desires; figure out proper acts to comfort them; and finally perform appropriate actions. Mussen and Eisenberg-Berg (1977, p. 109) concluded that "mature prosocial action involves several fundamental cognitive processes: perception, thinking, reasoning, problem-solving, and decision-making." Based on those arguments, it might be claimed that different kinds of altruistic behaviors follow different developmental pathways

depending on requirements of different altruistic acts and maturation of cognitive, social and empathic abilities at different rates.

For example, helping, sharing and comforting behaviors of 3-to-7½-year-old children toward peers and adults were observed in experimental and naturalistic settings (Radke-Yarrow & Zahn-Waxler, 1976). It was found that altruistic behaviors were displayed by young children at all ages, but at lower frequency toward peers than toward adults. In this study, helping was found to be the most frequently observed altruistic behavior across settings and age groups. While sharing and comforting were correlated with each other, helping was not found to be related to those forms of altruistic behaviors, suggesting that there were different kinds of prosocial behaviors under the effect of different social, motivational and cognitive mechanisms (Radke-Yarrow & Zahn-Waxler, 1976). Likewise, Eisenberg-Berg and Hand's (1979) study, which investigated development of moral judgment and its relation with actual prosocial behaviors in early childhood via naturalistic observation, indicated that while sharing behavior was associated negatively with hedonistic reasoning (i.e. self-focused orientation) and positively with need-oriented reasoning (i.e. other-focused orientation), helping and comforting behaviors were related to sociability, but neither to any of moral reasoning orientation nor to sharing behavior.

In another earlier study conducted by Rubin and Schneider (1973) with 7-year-olds, altruism was measured on two dimensions; one of them was generosity, which was measured with a classical donation procedure, and the other one was helping a younger peer to complete a given task. Those two altruistic behaviors were analyzed in relation to two cognitive decentration measures, namely communicative egocentrism and moral judgment. It was found that two measures of altruism (i.e.

generosity and helping) were highly correlated, and also cognitive measures were related to those altruistic acts. They argued that the results show that the age-dependent, cognitive capacity to decenter and perspective taking abilities are responsible for children's display of altruistic behavior. Moreover, correlations between decentration measures and generosity were found to be lower than correlations between decentration measures and helping. Based on those findings, although helping and generosity (donation) were interrelated, Rubin and Schneider (1973) suggested that cognitive requirements of the helping behavior in terms of decentration were greater compared to donation in which decentering was easier due to the nature of the procedure.

The inconsistency of results in terms of correlations between different forms of altruism persisted in later studies. Eisenberg-Berg and Lennon (1980) examined 4- and 5-year-olds' altruistic behaviors using naturalistic observations. They found that spontaneous helping, the most frequently observed altruistic behavior, was associated with spontaneous comforting but not with spontaneous sharing. In the study of Eisenberg, Pasternack, Cameron and Tryon (1984), preschoolers' moral judgment was found to be related to spontaneous sharing behavior, but not to spontaneous helping behavior. Another experimental study, which measured and compared altruistic behaviors on three dimensions, was carried out by Green and Schneider (1974). Although the sample consisted of children in middle and late childhood, the results, which showed insignificant correlations among three measures of altruism (helping, sharing and volunteering), support the multidimensional nature of altruism across different age periods.

The research of Iannotti (1985) is valuable for examining different prosocial behaviors of preschoolers with different measurement techniques and in

relation to empathy and perspective taking abilities. Naturalistic observations and teacher ratings were used to assess sharing, helping, cooperation and comforting behaviors. Donation (labeled as "sharing" in the study, but actually measured by a classical donation procedure except that the target of generosity was not anonymous) and helping behaviors were also measured with structured laboratory tasks. In those tasks, whether the child helped the experimenter who "accidentally" dropped his pencils to floor (helping), and whether she left some of her candies for her best friend (donation) were observed. The results showed that different kinds of prosocial behaviors were not associated within each measurement procedure: sharing and helping behaviors were not related in assessments by naturalistic observation, and neither were donation and helping behaviors related in the laboratory tasks. Moreover, the laboratory measure of helping behavior was not found to be correlated with the observational measure of helping behavior. Iannotti (1985) explained that although coding of both of the structured tasks were similar to codes of those behaviors in naturalistic observations, the difference may arise from targets of the altruistic behaviors: the targets of altruistic behaviors were peers in the donation task and in naturalistic assessment of helping behavior, while the target was an adult in the helping task. Referring to previous research of Zahn-Waxler, Iannotti and Chapman (1982), Iannotti (1985) speculated that "prosocial behavior toward peers may involve different processes than that toward adults" (p. 52). Additionally, teacher ratings for prosocial behaviors were also not found to be correlated with other measures of prosocial behaviors; internal consistency of different prosocial behaviors and gender difference were reported in only this measure, though. Overall, Iannotti (1985) concluded that preschoolers are capable of displaying various altruistic behaviors; however, to investigate different kinds of prosocial behaviors,

which involve different cognitive and affective processes, there is a need to use multi-assessments that are sensitive to various situational and motivational influences.

Denham (1986) drew attention to major methodological problems: restrictive operational definitions of prosocial behavior; overly complex and unsuitable measures for young children's cognitive and developmental level; and the difficulty of ensuring children's attention while carrying out a spontaneous task in the ongoing social context. She stated, "given the use of such measurement systems, it is not surprising that the sophistication of young preschoolers' prosocial behavior and social cognition has often been underestimated" (p. 194). Iannotti (1985) brilliantly showed the variability of correlations according to different operational definitions and different measurement techniques of the concepts under investigation; thus, by explaining inconsistent findings in the literature, he drew attention to the susceptibility of results to mistaken generalizations.

Cialdini, Baumann and Kenrick (1981) proposed a three-step sequence based on social learning theory that children pass through in the process of acquiring altruism as a norm. The first stage is supposed to be incidental and without full conscious awareness by the child. Then, children at about 8 or 9 years of age start to realize that society values altruistic acts; however, their altruistic responses depend on presence of evaluating others. It is not until the last stage which is expected to be reached around the end of middle childhood, that children internalize the altruism norm and show altruistic behaviors not only in public but also private contexts. In a study which supported this argument, Froming, Allen and Jensen (1985) compared 6-to-8-year-olds in different public and private settings. They used a classical donation procedure, manipulating different public and private self-awareness conditions (in

private condition, in presence of a mirror, or in presence of an evaluative/non-evaluative adult). Results indicated that altruistic choices of 6-year-olds were not dependent on the self-awareness manipulation, but older children's were. Froming, Allen and Jensen (1985) explained the results as showing young children's lack of awareness of an internalized altruism norm. However, this should not mean that young children are incapable of displaying altruistic acts; in fact, the number of candies donated by 6-year-olds was comparable to those donated by 7- and 8-year-olds, except in the highly salient public self-awareness condition (presence of an evaluative audience). Considering the definition of altruism that emphasizes absence of external rewards, to explore the real capacity of young children to display altruistic behaviors, any concerns of social appreciation or disapproval should be limited by observing them alone or without any authority figure/appraiser. This specific confusion due to the misinterpretation of definition of altruism has been criticized in the literature (e.g. Aronfreed, 1969).

To study altruism in children, researchers have used different methodologies. In most of the studies, naturalistic observations have been used together with other structured tasks (e.g., Eisenberg et al., 1999; Iannotti, 1985; Radke-Yarrow & Zahn-Waxler, 1976). Some studies have used only naturalistic observation to study altruism in preschool children or to measure altruistic behaviors of preschoolers (e.g. Berk, 1983; Eisenberg et al., 1984; Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Lennon, 1980; Persson, 2005). As summarized above, those studies have supported the argument that even preschool children are capable of displaying several forms of altruistic acts. Parent questionnaires, parent ratings and asking parents to write episodes of altruistic behaviors of their children toward other people have also been used by researchers who aimed to identify the age of display,

frequency and type of altruistic behaviors in young children. In one of those studies, Kakavoulis (1998a and 1998b) found that most children started to exhibit various kinds of altruistic behaviors including comforting someone in distress, cooperating, helping and sharing actions by the age of 2, as in the study of Zahn-Waxler et al. (1992, 2001). Another study, which used parent and teacher ratings, was conducted by Knafo and Plomin (2006) who investigated a very large twin sample longitudinally to explore genetic and environmental effects on the development of prosocial behavior. The results supported a nature - nurture interaction: the strong genetic effect on change and continuity of prosocial behavior from late infancy to middle childhood, as well as the effect of non-shared environment, especially on change in prosocial behavior even at 2 years of age, were reported.

Although reducing altruism to generosity was criticized by scientists (Green & Schneider, 1974), especially in earliest studies of altruism, observing children's behaviors in donation situations is the most widespread method used by social learning theorists, who aimed to explore primarily the role of modeling and social reward on children's altruistic behaviors (see review by Bryan & London, 1970). In those studies, children were compared according to their willingness to donate some valuable resources they had (candies, money, toys etc.) to an unknown person. However, due to the complex nature of the donation situation and the high verbalization demand of the procedure, this method was usually used for children in middle childhood but rarely for younger ones (e.g. Rubin & Schneider, 1973). Benenson, Pascoe, and Radmore (2007) conducted a study as one of those rare examples that used donation procedure with age-appropriate modifications to measure altruism from early to middle childhood. Highly attractive stickers were used as the resource to be either kept or shared by the proposing child. The

researchers emphasized that investigating altruism with this simple social dilemma game makes it possible to observe altruistic behaviors systematically (even in very young children) with a uniform procedure by simulating natural social interactions without confounding variables that may be found in naturalistic observations, parent interviews, and the like. The results of the study indicated that even at 4 years of age, most of the children from both high and low SES showed early foundations of altruistic behavior by sharing at least one sticker with their peers. The average number of stickers donated by the 4-year-olds was 2-3 (20-30%) which matches donations in studies with adults (Forsythe, Horowitz, Savin, & Sefton, 1994; as cited in Benenson, Pascoe, & Radmore, 2007). That was an impressive result, which shows very early similarity of patterns of childhood altruism with adults. Benenson, Pascoe and Radmore (2007, p. 173) drew attention to innate, biological tendencies that foster altruism in certain conditions and stated that "then even the youngest children should behave altruistically when their cognitive capacities permit understanding of the context."

Other than donation experiments, experimental designs are not widespread in the early childhood altruism literature. Helping measures in the studies of Rubin and Schneider (1973), Iannotti (1985), Simmons and Sands-Dudelczyk (1983) and the recently developed method of Warneken and Tomasello (2006, 2007, 2008) were among those rare examples (note that the sharing measure used by Iannotti (1985) and the generosity measure used by Rubin and Schneider (1973) were much like donation procedures). In addition to naturalistic observations, Radke-Yarrow and Zahn-Waxler (1976) also used experimental tasks to observe helping, sharing and comforting behaviors of young children toward adults.

Another support for preschoolers' capacity for altruistic behavior comes from the experiment of Simmons and Sands-Dudelczyk (1983). They mentioned that although it is difficult to create experimental procedures that can give young children a chance to display altruistic acts spontaneously within their competence and behavioral limits, such procedures have great value in terms of increasing the variety of measurement techniques and revealing the prosocial repertoire of children. In the experiment that they conducted with this purpose, Simmons and Sands-Dudelczyk (1983) found that 73% of preschool children stopped playing and responded to a confederate child's call for help finding her lost necklace. They also compared different school environments to explore the effect of the social learning environment on the type of helping responses children display. The parallelism of valued behaviors in different nursery schools with children's types of responses indicated that "even very young children are capable of selecting a preferred response from a repertoire of available prosocial behaviors" (p. 206).

Another experimental study was conducted by Buckley, Siegel and Ness (1979) to investigate the relationship between egocentrism, empathy and altruism with a brilliant experimental design. In this study, to assess altruistic development of children, their helping and sharing behaviors were measured while they were interacting with same-sex and same-age peers. The experiment was designed in such a way that while the child was playing with his peer in a natural setting, the tasks in the experiment forced child to make a decision between helping or not helping his needy peer; and sharing or not sharing a reward with his peer. Although this method seems to be a great way to study altruism systematically with an experimental procedure even in very young children, to the best of our knowledge, no previous or later studies have used this procedure to test altruism in young children. The present

study will adapt and modify Buckley, Siegel and Ness's (1979) sharing and helping tests to assess those components of altruism.

The Present Study

The present study employs a cross-sectional, experimental design to observe the development of altruism in preschool children at the ages of 3, 4, and 5. The study has three main aims.

First, it aims to identify the association between age and altruism, with the hope of illuminating the inconsistent findings regarding this association in young children, as reviewed above. One crucial question is at what age children start to perform which kinds of altruistic behaviors, and another is the developmental pathway that those behaviors follow. Therefore, a critical age period (3 to 5 years of age) is chosen to be able to observe the first signs and developmental progress of altruism cross-sectionally. A related question is whether the two sexes differ in regard to the age of emergence or the developmental pathway of altruism; findings on the effect of sex have also been inconsistent, as noted above. Sex of the child is used as a control variable in this study.

A second aim of the study is to capture a fuller meaning of altruism by examining patterns of display of different types of altruistic behavior. Thus, children were measured on three different dimensions: helping, sharing and donation. By assessing different types of altruistic behaviors, one of the most frequently criticized points in the accumulated literature, namely restricting the definition of altruism only to donation, can be at least partially overcome. Since multiple cognitive and empathic abilities are required for altruistic behaviors (Mussen & Eisenberg-Berg,

1977), this design allows comparison of development of different altruistic behaviors which demand different rates of cognitive and empathic maturation.

A third aim of the study is to introduce a structured observational task that provides both the internal validity of an experimental design and the external validity of naturalistic observation across three aspects of altruism by combining and modifying procedures applied by Buckley, Siegel and Ness (1979) and Benenson, Pascoe and Radmore (2007). The design includes developmentally and cognitively appropriate measures embedded in the child's daily social context, with a minimum of verbalization and cognitive processing demands (e.g. Denham, 1986; Simmons and Sands-Dudelczyk, 1983). Therefore, each child is observed and videotaped while interacting with a peer in an everyday activity (playing with a puzzle) in a familiar environment (their nursery school).

In the structured observational altruism task developed for this study, children are observed in groups of two. Each child is paired with a same-age and same-sex peer and videotaped while doing a puzzle. In the course of the puzzle activity, the target child encounters one opportunity to help the partner and one opportunity to share a cookie with the partner. After the puzzle game, the experimenter gives some stickers to each child for participation explains that the child can donate some of those stickers to the children in another nursery school if she wishes. Scores are recorded for whether or not the child helps, shares, or donates, the latency of these behaviors (if they occur), and the amount of donation. In addition, a total altruism score is calculated.

Hypotheses

Hypothesis 1: Young children are capable of displaying altruistic behaviors and even 3-year-olds will exhibit some non-zero level of altruism.

Hypothesis 2: The number of preschool children who display altruistic acts including helping, sharing and donation will increase with age.

Hypothesis 3: Considering cognitive and empathic demands of different kinds of altruistic behaviors, sharing behavior will be displayed by more children and will be observed earlier than either helping behavior or donation behavior; helping behavior will be displayed by more children and will observed earlier than donation behavior.

CHAPTER II: METHOD

Structured Observational Altruism Task

Adapting and combining experimental procedures used by Buckley, Siegel and Ness (1979) and Benenson, Pascoe and Radmore (2007), a structured observational task was created to measure three types of altruistic behavior in this study. With this specially developed task, children's helping, sharing and donation behaviors were observed structurally while they were playing with their peers. In this task, first of all, two same-age and same-sex children were paired. One was the target child who faced situations potentially calling for altruistic action, and the second was designated as the partner. Before starting the game, the experimenter asked the partner child to get a puzzle bag out of the cabinet. However, when the partner child opened the pre-prepared cabinet, several rolls of gummed paper tape spilled out of the cabinet across the floor. The behavior of the target child in response to this incident was observed; that is, whether or not she showed any kind of helping behavior toward the friend was coded. After this, the children proceeded to play with the puzzle. When the puzzle was successfully completed, the experimenter asked the target child to serve the cookies in the cookie box. However, there was just one big cookie left in the box; whether or not the target child shared it with the partner was coded. The task ended with a classical donation procedure adapted for young children. Each child was given 10 stickers for participation and then it was explained that if they wished, they could send some of their stickers to the children in another school who would not have a chance to receive stickers. They were assured that their choices would not be known by anyone. Scoring in the donation phase included both

the target child and the partner, who made their donation decisions separately. The experimenter left the room at each critical moment – just before the partner child opened the cabinet door, just before the target child opened the cookie box, and while the donation decisions were being made. Further details are explained in the Procedure section below.

Participants

Data were collected from a sample of 178 (90 male and 88 female) Turkish preschool children between the ages of 3 and 5 from seven private nursery schools in Istanbul. Their ages ranged from 31 to 66 months with a mean of 48 months. A detailed consent form was distributed to the parents approximately two weeks before the experiment. A copy of the consent form is provided in Appendix A.

Selection of Pairs

The children were observed in groups of two, one of whom was the target child and the other was the partner. Maccoby (1998) argued that preschool children tend to play with same-sex peers three times more often than with opposite-sex peers, supporting her argument by citing several studies that found clear sex segregation among preschool children across different cultures (e.g. Maccoby & Jacklin, 1987; Omark, Omark, & Edelman, 1973; Whiting & Edwards, 1988). Keeping in mind sex segregation among preschool children, we paired each child with a same-sex peer.

Accumulated literature has pointed out that while positive and mutual relations foster altruism, negative and conflictual relations suppress it (Howard &

Piliavin, 2000). Therefore, to eliminate possible confounding variables that may stem from history of friendships, care was devoted to select pairs from among children who had as neutral a relationship with each other as possible. The pairs were determined with the aid of nursery school teachers; all pairs had known each other at least for 3 months, but none of the pairs was composed of either very close or best friends, or of children known to fight frequently.

Materials

A standardized set of materials was used in each trial as a part of the structured observational altruism task:

Pre-prepared Cabinet

A 40(l) X 30(w) X 40(h) cm wooden cabinet was used in the experiment. The cabinet had a door on the front face and there was a handle on the right corner of the door. By pulling the handle, the cabinet door could be opened 90 degrees from right to left.

To prepare the cabinet for each trial, a 45 X 28 cm baby pillow was placed diagonally inside the cabinet along with 20 rolls of gummed paper tape. The pillow and tape rolls were arranged so that the tape rolls would spill out of the cabinet when the door was opened. A paper bag holding the puzzle was placed on top of the pillow. The rolls of tape were identical; they were circular in shape with a diameter of 9 centimeters.

Puzzles

Five different wooden puzzles were used in the experiment, one for 3-year-olds, two for 4-year-olds, and two for 5-year-olds.

The puzzle used with 3-year-olds was a picture of three dogs, composed of 15 pieces and measuring 30 X 23 cm.

The first puzzle used with 4-year-olds was a picture of Sponge Bob, a well-known cartoon character, and the second was a picture of a duck family. Both were composed of 16 pieces and measured 20 X 20 cm.

Both puzzles used with 5-year-olds consisted of 24 pieces and measured 20 X 20 cm. One featured a picture of swans and the other was a picture of a girl.

Pilot studies showed that the puzzles were appropriate for the age groups and that children enjoyed playing with them.

The puzzle pieces were held in a 32 X 40(h) cm pink paper bag which was placed in the cabinet. At the beginning of the "helping" sequence the partner child was asked to bring this pink paper bag to the play table so that the children could start playing with the puzzle.

Cookie Box and Cookies

A cylindrically shaped (2r = 20 cm; h = 9 cm) cookie box was used to place "the last cookie". It had a lid that could be easily opened by children.

The cookie in the box was a cellophane-wrapped "Eti Cin" brand cookie (the company's web site describes the cookie as an "orange jam tart sprinkled with cocoa vermicelli"). It was a highly attractive cookie for children. A typical cookie was circular in shape (2r = 7.5 cm), weighed 29 g., and was easy to break in half. The

reason for choosing this type of cookie was that it was big enough for two children to share but not too big for one child to eat, and it was hygienically packaged.

Stickers

Several different types of stickers were prepared for children. They were all colorful and attractive stickers between 2 and 5 cm in size, displaying animal and cartoon figures. For each donation trial, 30 different types of stickers were displayed to the children on a 22.5 X 31.5 cm tray and the child was asked to choose 10 of them as a gift. Pilot studies confirmed that stickers were highly valued by children at all ages and they chose them eagerly and carefully.

Small Wooden Boxes

Ten identical wooden, covered boxes 9.5 X 9.5 X 5 cm in size served as donation boxes. A child wished to donate some of her stickers could put her donations in one of identical boxes and close a small clip on it. Since the boxes were identical and there were clips on all of them, the children were convinced that their choices would not be known by anyone. This precaution was taken with the aim of ensuring that their decisions would not be affected by their intentions to meet expectations of experimenter.

Technical Equipment

A Panasonic SDR-H20EG-S digital video camera and its adjustable-height tripod were used to record each trial from beginning to end. A Casio chronometer was used to measure time intervals.

Procedure

Each pair of children was invited to a quiet testing room in the nursery school. The room was equipped with a table, three chairs and the pre-prepared cabinet, which was located 1 meter away from the table. The experimenter asked the children to be seated at the table and chatted for a few minutes to warm them up. She introduced herself, asked their names and explained that they would play with a puzzle together. Then, to make children aware of existence of a recorder due to the ethical reasons, the experimenter showed the camera to the children and asked them to wave at it since it was recording them. To ensure random assignment, the child who had sat to the left of the experimenter was designated as the target child and the one on the right side was assigned as the partner child (they had decided where to sit on their own). Throughout each trial, the experimenter followed a uniform procedure. The general wording of procedure is given in Appendix B; however, the wording was rather flexible to ensure children's understanding and motivation for the game. The whole activity was recorded by the camera located 3-4 meters away from the play table.

To get the puzzle play started, the experimenter, pointing at the pre-prepared cabinet, asked the partner child to get the puzzle contained in a pink bag in the cabinet. At this time, to leave the children alone, the experimenter moved away from the table and walked through to the door, saying she would bring required materials for the game and would come back in a few minutes. Once the experimenter was sure that partner child would open the pre-prepared cabinet, she left the room, warning the child not to mess up the room.

After 110 seconds, the experimenter returned to the room with the cookie box and put it on the cabinet to get ready for the sharing phase. If the children had

not done so, she brought the pink paper bag to the table, took the puzzle out of the paper bag, and put it on the play table. She did not make any comment about the rolls of tape, whether they were on the floor or the children had put them back into the cabinet. She introduced the puzzle to the children by talking about the picture on it and then allowed them to break up the puzzle. The experimenter showed the children how to assemble pieces of the puzzle to complete it and then allowed them to play with it. When the children completed the puzzle, the experimenter congratulated them and said that it was time for a cookie break. She asked the target child to serve the cookies, pointing at the cookie box on the cabinet. At this time, to leave children alone once again, the experimenter walked through the door, saying she would bring their gifts. Once the experimenter was sure that the target child would open the cookie box, she left the room and reminded the children that they could start to eat their cookies immediately.

In the last phase of the experiment, the experimenter assisted the partner child to leave the room and asked him to wait for a few minutes. She told the partner child that he would get the same gifts but she had to give them one by one. The experimenter stayed alone with the target child in the room and showed him the tray on which 30 stickers were laid out. Then, she allowed the child to choose 10 favorite stickers and had him lay the chosen stickers on the table side by side. After choosing 10 stickers, experimenter asked the child whether he liked his stickers. Once the child approved, the experimenter chatted for a few minutes about what he could do with those stickers at home – i.e. sticking them on his bed, on books, etc. She emphasized that those stickers belonged to him and he could do whatever he wanted with them. Then, she added that she wanted to talk with him about children in another school. She explained that there were not enough stickers for the children in

the other school and if he wanted to send some of his stickers to those children, she could deliver them for him. The child was assured that the stickers belonged to him; he did not have to give any of them if he wished, he could take all of the stickers home with him, and no one would know his choice. The experimenter explained that if he still wanted to send any stickers to the children in the other school, the only thing he had to do was to decide which stickers he wished to send to the other children and then put them into one of the wooden boxes after the experimenter left the room. He was told that the boxes were identical and had locks, and that no one would know whether he gave away any stickers or not. The experimenter repeated the instructions until she was sure that the child completely understood the procedure. Then, the child was told to knock on the door when he was ready to leave the room. After that, the experimenter left the room and waited in front of the door for the child's sign (with the exception that for some of the 3-year-olds who were anxious about staying alone in the room, the experimenter closed her eyes, covered her eyes with her hands and did not leave the room). When the child got ready to leave the room, the experimenter thanked the child for participation and dismissed him. The partner child was then invited back into the room and the donation procedure was repeated with him, too. The whole experimental trial lasted approximately half an hour for each pair.

Scoring

Each target child had three scores for altruistic behaviors (helping, sharing and donation) and one score for total altruism. In addition, the latency of responses and the number of stickers donated were recorded for the target child. On the other hand, the partner child had scores only for donation and amount of donation.

"Helping" behavior was defined as helping the needy peer by putting the rolls of tape back into the cabinet, opening the door of the cabinet for the friend, handing the tape rolls to the friend, and/or gathering tape rolls together to put them back into the cabinet. Those who showed one or more of those behaviors within 90 seconds got 1 point for "helping". For "sharing" behavior, children who shared or offered to share the cookie with their peer within 90 seconds got 1 point. For "donation" behavior, if the child chose to donate sticker(s) to the children in another nursery school, he got 1 point for "donation" behavior. All altruistic behaviors were coded categorically – i.e. presence or absence of the defined responses. Finally, a "total altruism score," which was the sum of points across the three altruistic behaviors, was calculated. For sharing and helping behaviors, response times of children were measured by a chronometer. The chronometer was started when the target child saw the tape rolls fall out of the cabinet (for "helping") and when he saw there was one cookie left (for "sharing"). For donation behavior, the number of stickers donated was also recorded. Scoring was done after each trial by checking the wooden boxes to see how many stickers the child had left in them and by watching the videotape of the trial to observe sharing and helping behaviors.

Observer Reliability

Since helping and sharing behaviors were coded by watching recorded videotapes and deciding whether the child performed operationally defined act(s), it was necessary to establish reliability of primary coder with a second observer. After sufficient training was provided, a second coder blindly and independently rescored 65 records (out of 89 total trials).

For helping behavior, agreement was achieved on 62 of 65 valid cases, and the correlation between two observers' coding was .912. For helping time latency, inter-rater correlation was .846 for the 32 cases who helped their peers (out of 65 children). For sharing behavior, two coders agreed on 62 of 64 valid cases, and the correlation was found to be .913. For sharing latency, the correlation between observers' ratings was .820 for the 49 children of 64 who shared.

All of the correlations were highly acceptable. The results indicated that altruistic behaviors were easily distinguishable with the task used in the present study and that coding by the primary observer was highly reliable.

Precautions against Confounding Variables

To prevent any confounding variable that may stem from presence of the experimenter, the experimenter left the children alone in the critical decision periods. Considering the definition of altruism that emphasizes absence of external rewards, leaving children alone was a necessity. More precisely, when there is neither a witness nor an authority figure, altruistic behavior is independent from any reinforcement or punishment external to the child and the immediate situation. In addition, according to the study of Caplan and Hay (1989; as cited in Zahn-Waxler et al., 1992), when adults are present in the context, children may believe that they do not have to help a distressed peer and may not display prosocial behavior at all even if they are capable of it. This tendency may resemble "diffusion of responsibility" observed in helping studies with adults (Howard & Piliavin, 2000). Zarbatany, Hartmann and Gelfand (1985) drew attention to possible confusions in altruism experiments due to experimenter effects; what increases with age might be conformity to adult expectations rather than altruistic behavior. Therefore, the

experimenter took care not to be present when the target child was confronted with opportunities to behave altruistically.

Pilot studies helped us to make appropriate modifications and to shape final version of the procedure. Wording of the procedure, appropriateness of materials and understandability of procedure by young children were all pretested and conformed to ethical standards. Only in the case of the donation procedure was there a problem of understandability. In this phase, which required a high level of verbal understanding, 17 children (three girls and 13 boys at the age of 3 and one boy at the age of 4) could not grasp the requirements of the procedure; therefore, they were excluded from the analyses of donation behavior.

CHAPTER III: RESULTS

Descriptive Characteristics of the Sample

A sample of 178 Turkish preschool children participated in the study. The ages of children ranged from 31 to 66 months with a mean of 48.34 (*SD* = 9.19). Mean age of 90 boys was 48.04 months (*SD* = 9.89) and mean age of 88 girls was 48.65 months (*SD* = 8.46). For the purpose of the analyses, the children were divided into three age groups: (a) children aged between 31 months and 42 months were assigned to the 3-year-old group; (b) children aged from 43 months to 54 months were classified as the 4-year-old group; and (c) the ones aged between 55 and 66 months were designated as 5-year-old group. Mean ages of age groups were 37.43 (*SD* = 3.09), 47.98 (*SD* = 3.40) and 58.55 (*SD* = 3.17) months, respectively.

Each target child was paired with a same-sex and same-age partner child. There were a total of 89 pairs of children; thus, 89 trials for the observation of helping and sharing behaviors were performed. Except for the single analysis of donation behavior, data from 89 target children were used in all statistical analyses. The ages of target children ranged from 31 to 66 months with a mean of 48.46 (*SD* = 8.80). For target children, mean ages of age group 3, 4, and 5 were 38.21 (*SD* = 3.13), 47.97 (*SD* = 3.23) and 58.19 (*SD* = 3.49) months, respectively. Mean age of 45 target boys was 48.27 months (*SD* = 9.46) and mean age of 44 target girls was 48.66 months (*SD* = 8.17). For the investigation of donation behavior, data of all children were included in the analysis; hence, including both targets and partners, donation analysis was performed with all 178 children (17 missing, 161 valid cases).

Frequency distribution of target children according to age and sex is shown in Table 1.

Table 1

Frequency Distribution of Target Children by Age Group and Sex

		Age Group			
		3 Years	4 Years	5 Years	Total
Sex	Boys	15	15	15	45
	Girls	13	15	16	44
	Total	28	30	31	89

Method of Analysis

Since the aim was to explore the relationship between age (3, 4 and 5 years of age) and altruistic behaviors (presence and absence), a 3 X 2 X (2) between subjects design was carried out for each altruistic behavior (helping, sharing and donation). Child's age was one of the variables; altruistic behaviors of children were observed at the age of 3, 4 and 5 with a cross-sectional design. Number of children in each cell was recorded according to absence or presence of the altruistic behavior, which was the other variable. Pearson Chi Square tests were used as the primary method of analysis. None of the cells analyzed by Chi Square tests had expected frequencies less than 5. However, Fisher's Exact test was used when it was necessary – i.e. when more than 20% of the cells have expected frequencies less than 5 in 2 X 2 cross-tabulation tables. Sex of child was the control variable; beside investigation of overall relationship between age and altruistic behavior, further analyses were carried out by controlling sex of the children. Partial Chi Square analyses were also

performed to determine more fully the nature of the relationships. To explore strength of relationships, the Phi Squared coefficient (Φ^2) (for 2 X 2 tables) and Cramer's Phi Squared coefficient (when there were more than two categories) were calculated. Several figures and tables were presented to examine nature of altruistic behaviors and their associations with age and sex. In addition, a univariate analysis of variance was carried out to investigate relationship between age, sex and total altruism score. However, analyses of other continuous variables (i.e. time latency for sharing and helping behaviors, and number of stickers donated for donation behavior) by parametric tests were not included in result section, since in those analyses Levene's test of equality of error variances was found to be significant, indicating that there were not differences between variations in the sample for dependent variables.

Results Concerning Hypotheses

Table 2 shows frequencies of each altruistic behavior by age and sex.

Table 2

Cross-tabulation for Age Group, Sex and Each Type of Altruistic Behavior

Age Group	Info	Helping Behavior			Sharing Behavior			Donation Behavior		
		Yes Help	No Help	Total #	Yes Share	No Share	Total #	Yes Donate	No donate	Total #
3	Female	3	10	13	5	8	13	3	20	23
	Male	4	11	15	10	5	15	3	14	17
	Total	7	21	28	15	13	28	6	34	40
	%	25%	75%		53.6%	46.4%		15%	85%	
4	Female	9	6	15	11	4	15	15	15	30
	Male	7	8	15	11	4	15	15	14	29
	Total	16	14	30	22	8	30	30	29	59
	%	53.3%	46.7%		73.3%	26.7%		50.8%	49.2%	
5	Female	13	3	16	16	0	16	23	9	32
	Male	8	7	15	14	1	15	16	14	30
	Total	21	10	31	30	1	31	39	23	62
	%	67.7%	32.3%		96.8%	3.2%		62.9%	37.1%	
Total Responses		44	45	89	67	22	89	75	86	161
Total %		49.4%	50.6%		75.3%	24.7%		46.6%	53.4%	

Onset of Altruism

At the age of 3, 25% of children helped their peers, 53.6% shared their cookies and 15% of them donated their stickers to "unknown others". At the age of 5, sharing was competently displayed by almost all children (96.8%); and, helping and donation behaviors were performed by approximately two thirds of the children (67.7% and 62.9%, respectively). Overall 75.3% of preschool children shared, and almost half of them displayed donation behavior and helping behavior (see Table 2).

When the 3-year-olds were examined, it was found that no target child displayed all three kinds of altruistic behaviors at the age of 3. Seven 3-year-olds both helped and shared, and two 3-year-olds both shared and donated. Six 3-year-olds only shared and one 3-year-old only donated. Out of 28 target 3-year-olds, including the three children who could not understand the donation procedure, 12 children did not display any of the altruistic behaviors. Put differently, 57.1% of 3-year-olds exhibited at least one kind of altruistic behavior, but none of them displayed all three types of altruistic behaviors together.

At the age of 4, four children did not show any type of altruistic behavior, and eight children displayed all three types (sharing, helping and donation behaviors).

At the age of 5, one child did not display any altruistic act, but 15 children exhibited all three kinds of altruistic behavior.

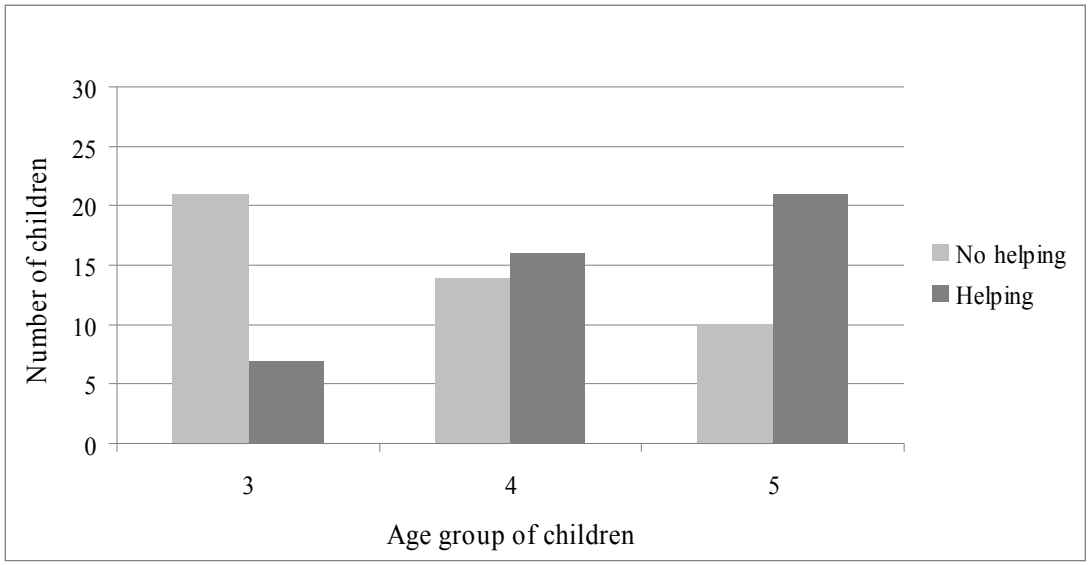
See also "examination of overall altruism" section below.

The Relationships of Age and Sex with Helping Behavior

As shown in Table 2, 25% of 3-year-old children helped their peers, while 53.3% at the age of 4 and 67.7% at the age of 5 did so. Chi Square test showed that the relationship between age and helping behavior was significant, as predicted [($\chi^2(2, N = 89) = 11.03$, $p = .004$, Cramer's $\Phi^2 = .12$]. However, when partial analyses were performed, it was found that age difference was significant only between ages 3 and 4 [($\chi^2(1, N = 58) = 4.86$, $p = .028$, $\Phi^2 = .08$], but not between ages 4 and 5 [($\chi^2(1, N = 61) = 1.33$, $p = .249$]. The nature of the relationship was such that 3-year-olds were less likely to help their peers than 4- and 5- year-olds [($\chi^2(1, N = 89) = 9.76$, $p = .002$, $\Phi^2 = .11$]. Figure 1 shows the number of children in terms of helping behavior across age groups.

Figure 1

Age Group Distribution of Helping Behavior



When sex was included in the Chi Square analysis to explore the relationship between age and helping behavior for each sex separately, it was found that overall age difference was significant only for girls [($\chi^2(2, N = 89) = 9.99$, $p = .007$, Cramer's $\Phi^2 = .23$]; but not for boys [($\chi^2(2, N = 89) = 2.37$, $p = .306$]. Also, the

nature of relationship as described above was confirmed only for girls: the age difference was found to be significant between 3- and 4-year-old girls [($\chi^2(1, N = 28) = 3.88$, $p = .049$, $\Phi^2 = .14$]; but not between 4- and 5-year-old girls [using Fisher's Exact test due to the low expected count in some cells, $p = .252$], with no significant age difference for boys [($\chi^2(1, N = 30) = .13$, $p = .715$]. While girls at the age of 3 were significantly less likely to help their peers than those at the ages of 4 and 5 [($\chi^2(1, N = 44) = 8.56$, $p = .003$, $\Phi^2 = .19$], no such relation was found for boys [($\chi^2(1, N = 45) = 2.23$, $p = .135$]. Unlike girls, the number of boys who helped did not differ significantly between the ages of 3 and 4 [($\chi^2(1, N = 30) = 1.29$, $p = .256$, $\Phi^2 = .04$], or even between the ages of 3 and 5 [($\chi^2(1, N = 30) = 2.22$, $p = .136$, $\Phi^2 = .07$], although the differences were in the expected direction. A developmental sequence in helping behavior seemed to be valid only for girls. Figures 2 and 3 show the number of children across age groups with regard to helping behavior for girls and boys separately.

Figure 2

Age Group Distribution of Girls' Helping Behavior

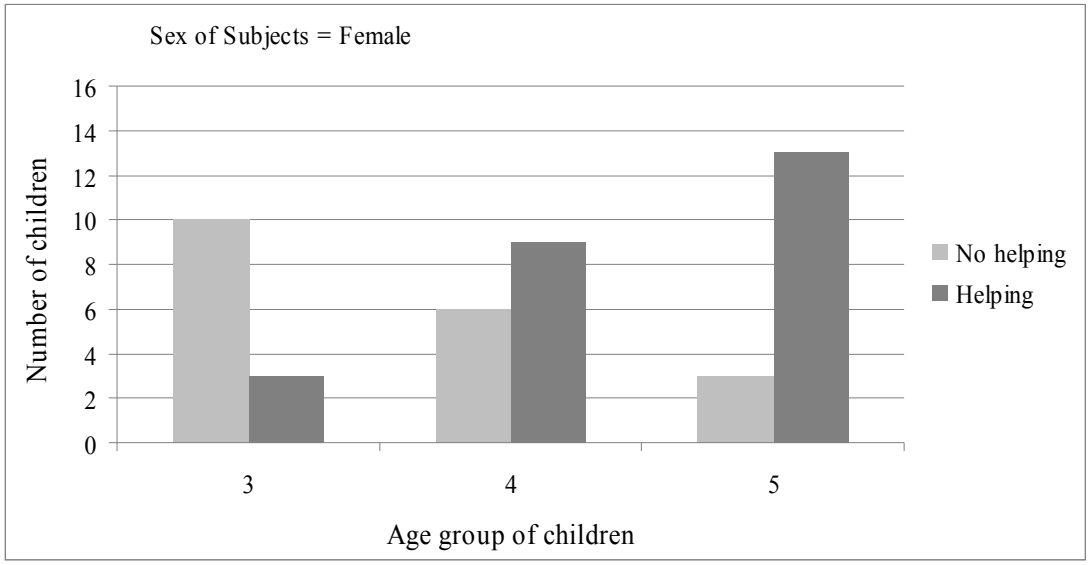


Figure 3

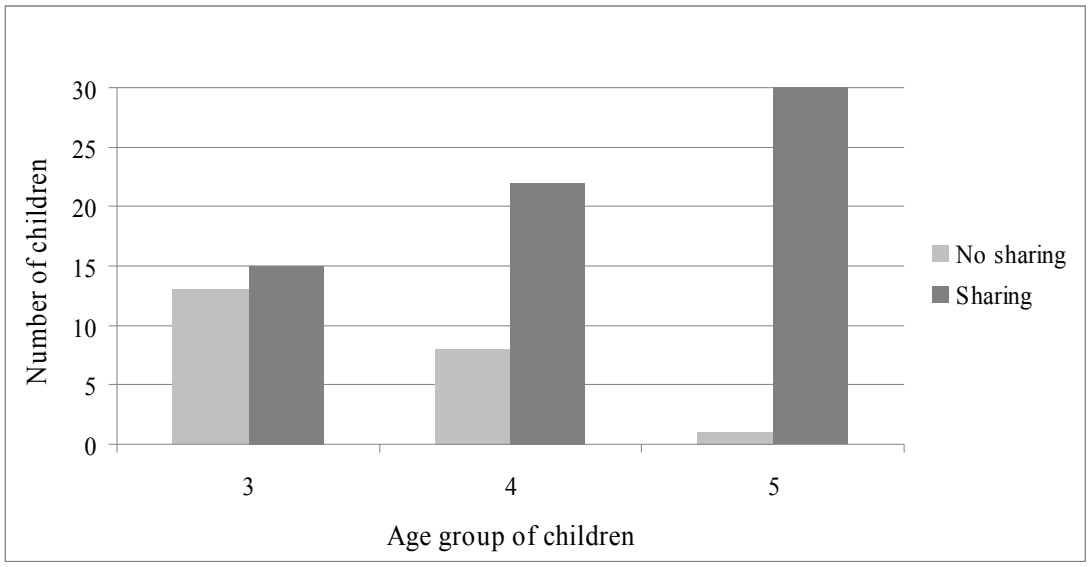
Age Group Distribution of Boys' Helping Behavior

The Relationships of Age and Sex with Sharing Behavior

It was found that 53.6% of 3-year-olds, 73.3% of 4-year-olds and 96.8% of 5-year-olds shared their cookie with the partner. As hypothesized, the relationship between age group and sharing behavior was significant [($\chi^2(2, N = 89) = 14.85$, $p = .001$, Cramer's $\Phi^2 = .17$]. Analyzing the age groups separately and with different combinations revealed that, unlike helping behavior, the age effect was significant between the ages of 4 and 5 [($\chi^2(1, N = 61) = 6.66$, $p = .010$, $\Phi^2 = .11$], but not between ages 3 and 4 [($\chi^2(1, N = 58) = 2.45$, $p = .118$]. It was found that 5-year-olds were significantly more likely to share than 3- and 4-year-olds [($\chi^2(1, N = 89) = 11.81$, $p = .001$, $\Phi^2 = .13$]. The number of children across age groups in terms of sharing behavior is shown in Figure 4.

Figure 4

Age Group Distribution of Sharing Behavior



As in the case of helping behavior, only the sharing behavior of girls was found to be age-related [($\chi^2(2, N = 89) = 13.70$, $p = .001$, Cramer's $\Phi^2 = .31$]. The relationship between age and sharing behavior was not significant for boys [($\chi^2(2, N = 89) = 3.34$, $p = .188$]. In terms of the nature of the relationship, there was a significant difference between 4- and 5-year-old girls [Fisher's Exact test, $p = .043$], but neither between 3- and 4-year-old girls [($\chi^2(1, N = 28) = 3.46$, $p = .063$], nor between 3- and 4-year-old boys [Fisher's Exact test, $p = 1.000$]. Girls at the age of 5 were significantly more likely to share than girls at the ages of 3 and 4 [Fisher's Exact test, $p = .002$]. No such relation was detected for boys [Fisher's Exact test, $p = .129$]. Again unlike girls, boys at the age of 4 and 5 did not differ significantly in terms of sharing behavior [Fisher's Exact test, $p = .330$], and no age difference was found even between ages 3 and 5 for boys [Fisher's Exact test, $p = .169$], although the differences were in the expected direction again. Figures 5 and 6 show the frequency of sharing behavior for each sex across age groups.

Figure 5

Age Group Distribution of Girls' Sharing Behavior

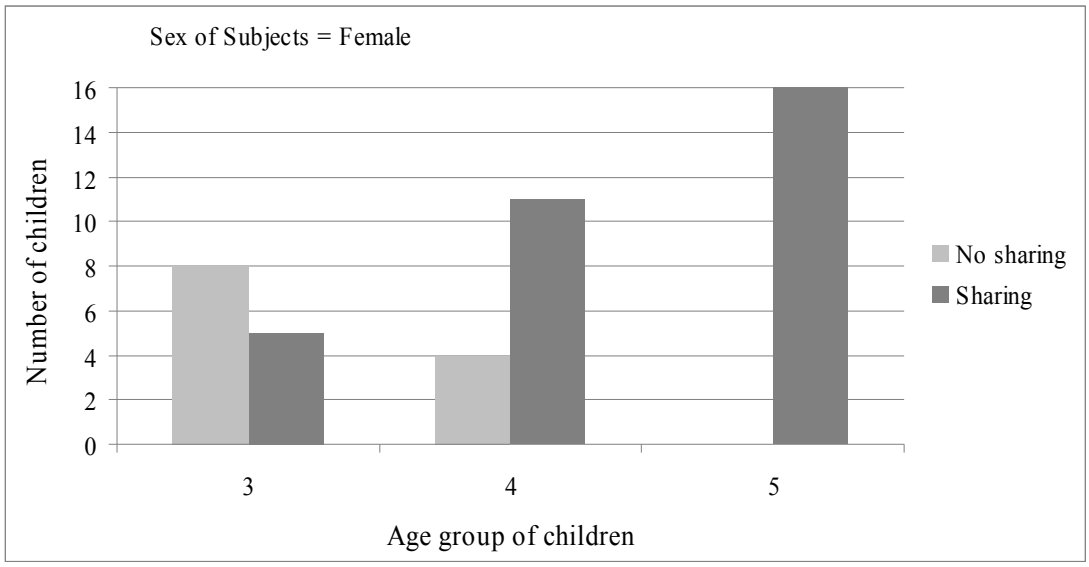


Figure 6

Age Group Distribution of Boys' Sharing Behavior

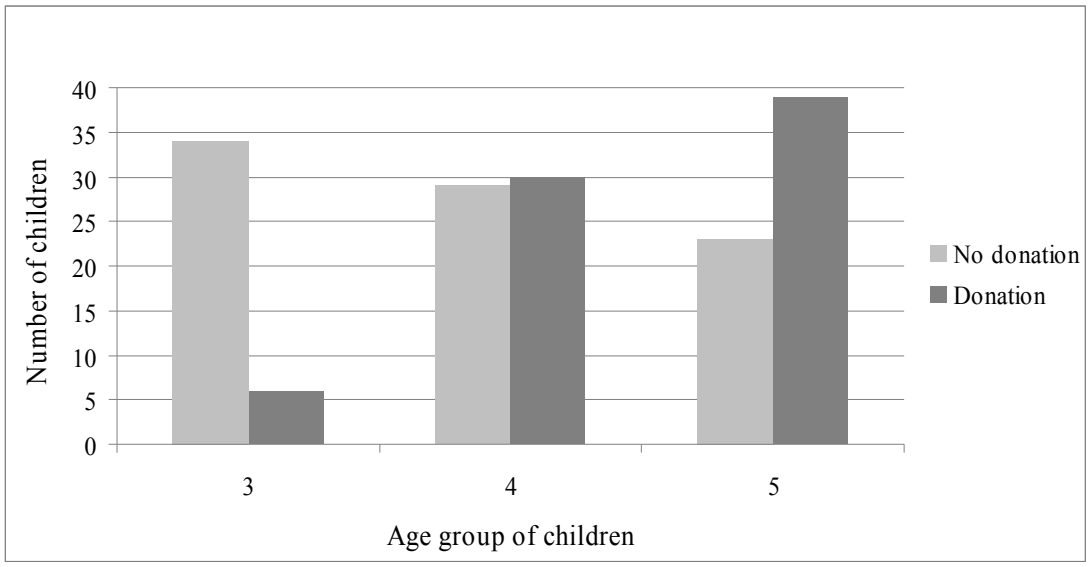
The Relationships of Age and Sex with Donation Behavior

15% of 3-year-olds, 50.8% of 4-year-olds and 62.9% of 5-year-olds chose to donate some of their stickers, as shown in Table 2. Pearson's Chi Square test

indicated a significant age-related increase in donation [($\chi^2(2, N = 161) = 23.10$, $p = .000$, Cramer's $\Phi^2 = .14$]. Note that total number of children in the analysis of donation was greater than for helping or sharing, since data were collected not only from target children but also from partners in the donation phase. No significant effect of being a partner or a target child on the relationship of donation and age was reported: for 3-year-olds [($\chi^2(1, N = 161) = .02$, $p = .894$]; for 4-year-olds [($\chi^2(1, N = 161) = .43$, $p = .514$]; and for 5-year-olds [($\chi^2(1, N = 161) = .07$, $p = .793$]. Thus, for the donation phase, all participants in the experiment, whether target or partner, were included in the analyses. Partition of the cross-tabulation table showed that, as in the case of helping behavior, the age difference in donation behavior was significant only between ages 3 and 4 [($\chi^2(1, N = 99) = 13.24$, $p = .000$, $\Phi^2 = .13$], but not between ages 4 and 5 [($\chi^2(1, N = 121) = 1.79$, $p = .181$]. The nature of the relationship was such that 3-year-olds were less likely donate some of their stickers compared to 4- and 5- year-olds [($\chi^2(1, N = 161) = 21.34$, $p = .000$, $\Phi^2 = .13$]. In Figure 7, the number of children in each age group with regard to donation behavior is presented.

Figure 7

Age Group Distribution of Donation Behavior



When the relationship between age and donation behavior was controlled by sex of the children, unlike other altruistic behaviors, significant age-related increment of donation behavior was confirmed both for boys [($\chi^2(2, N = 161) = 6.52$, $p = .038$], and for girls [($\chi^2(2, N = 161) = 18.61$, $p = .000$]; strength of the association was greater for girls [Cramer's $\Phi^2 = .22$] than for boys [Cramer's $\Phi^2 = .08$], though. A significant difference was found between 3- and 4-year-old girls [($\chi^2(1, N = 53) = 7.93$, $p = .005$, $\Phi^2 = .15$], as well as boys [($\chi^2(1, N = 46) = 5.22$, $p = .022$, $\Phi^2 = .11$]. There was no significant difference in donation between ages 4 and 5 for girls [($\chi^2(1, N = 62) = 3.12$, $p = .077$], or for boys [($\chi^2(1, N = 59) = .02$, $p = .902$]. Unlike other altruistic behaviors, the nature of the relationship showed the same developmental trend both for girls and boys: there were significantly less 3-year-old girls who donated compared to 4- and 5-year-old girls [($\chi^2(1, N = 85) = 15.64$, $p = .000$, $\Phi^2 = .18$], as well as 3 year-old boys were significantly less likely donate compared to 4- and 5-year-old boys [($\chi^2(1, N = 76) = 6.50$, $p = .011$, $\Phi^2 = .09$]. In Figures 8 and 9,

the number of girls and boys in each age group in terms of donation behavior are shown.

Figure 8

Age Group Distribution of Girls' Donation Behavior

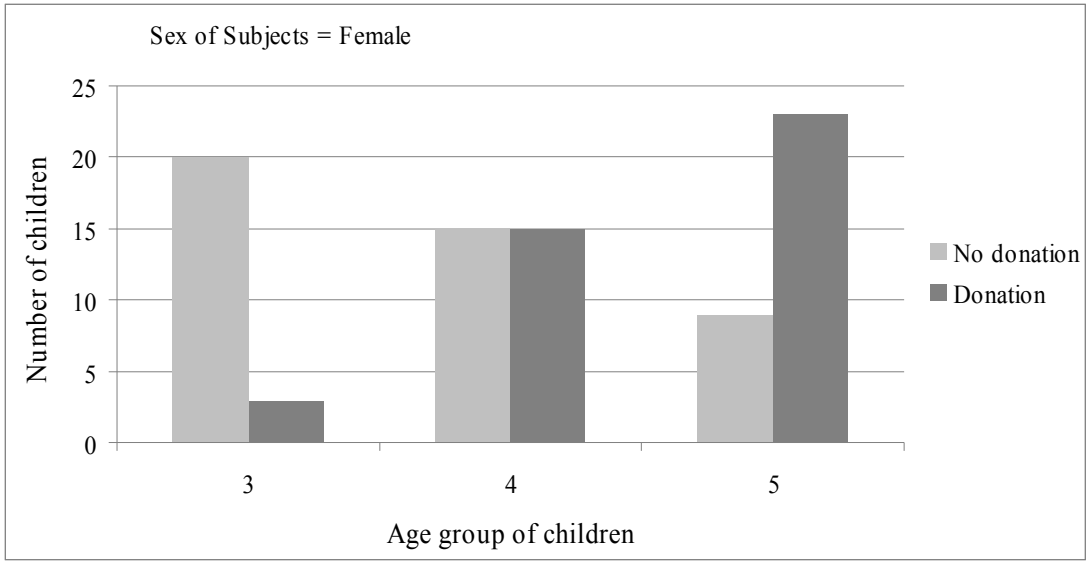
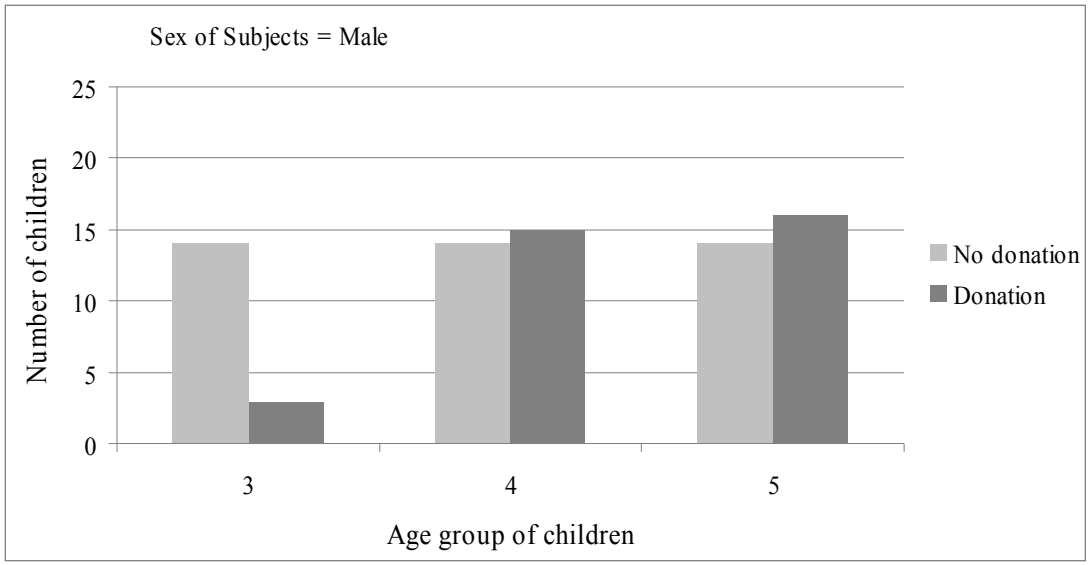


Figure 9

Age Group Distribution of Boys' Donation Behavior



Summary of Chi-Square Findings

Although Phi Coefficient is not an appropriate measure of association to draw conclusions about explained variance, it allows comparison of strengths of association of variables from different tables. Since age and altruistic behaviors were the common factors across all Chi Square analyses, Phi Coefficients were used to compare different altruistic behaviors' strengths of associations with age overall and across sexes. In Table 3, Chi-square findings were summarized in terms of strength of association and nature of relationship.

Table 3

Summary of Chi-Square Findings with regard to Strength of Association and Nature of Relationship

Age Effect	Helping Behavior N = 89	Sharing Behavior N = 89	Donation Behavior N = 161
Overall	.12 significant, p = .004	.17 significant, p = .001	.14 significant, p = .000
For Female	.23 significant, p = .007	.31 significant, p = .001	.22 significant, p = .000
For Male	.05 not significant	.07 not significant	.08 significant, p = .038
Nature of relationship	3 versus 4 – 5 year-olds	3 – 4 versus 5 year-olds	3 versus 4 – 5 year-olds

Note. Strengths of association of altruistic behaviors with age are in terms of Cramer's Phi Squared coefficient (Cramer's Φ^2) for overall subjects; and strengths of association of altruistic behaviors with age are in terms of Phi Squared coefficient (Φ^2) for female and for male subjects.

As summarized in Table 3, age was most strongly associated with sharing behavior, followed by donation behavior and helping behavior. For sharing and helping behaviors, age-related increase was significant only for girls. For donation behavior, although the relationship between age and donation behavior was significant for both sexes, the strength of association was weaker for boys than it was for girls. Moreover, the underlying reason for this finding was not due to the sex differences within a certain age group: the number of children who helped, shared, or donated did not differ significantly by sex in any age group. For helping behavior, sex difference was not found to be significant for 3-year-olds [Fisher's Exact test, p = 1.000], 4-year-olds [($\chi^2(1, N = 30) = .54$, $p = .464$], or 5-year-olds [Fisher's Exact test, $p = .135$]. For sharing behavior, sex difference was also not significant within any age groups: [($\chi^2(1, N = 28) = 2.23$, $p = .136$], [Fisher's Exact test, $p = 1.000$], [Fisher's Exact test, $p = .484$] for 3-, 4-, and 5-year-olds, respectively. Furthermore, for donation behavior, no sex difference was found within 3-year-olds [Fisher's Exact test, $p = 1.000$], 4-year-olds [($\chi^2(1, N = 59) = .02$, $p = .895$], or 5-year-olds [($\chi^2(1, N = 62) = 2.28$, $p = .131$].

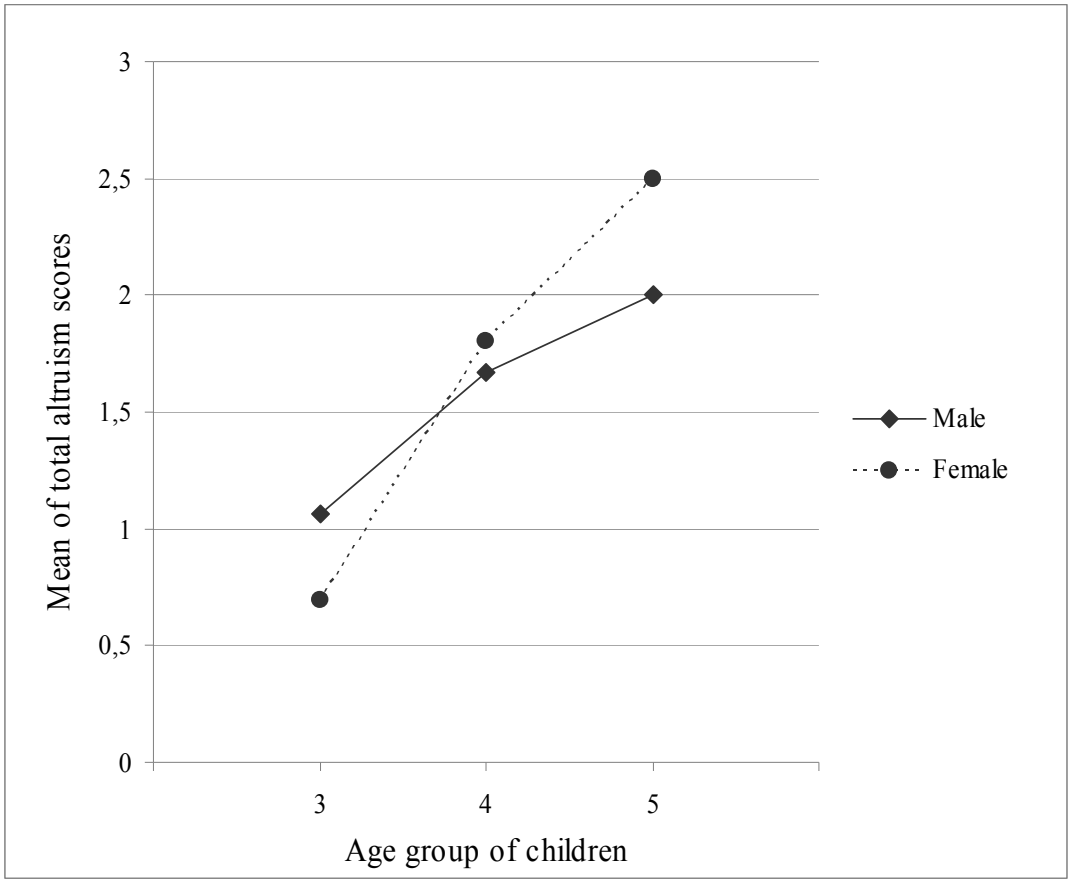
In terms of the nature of the relationship, Chi-square analyses with partition of cross-tabulation tables indicated that for both helping and donation behaviors, 3-year-olds were significantly less likely to help and donate compared 4- and 5-year-olds. In contrast, for sharing behavior the nature of the relationship was such that 5-year-olds were more likely to share their cookies with their peers than 3- and 4-year-olds.

Examination of Overall Altruism

A total altruism score, calculated by summing points across the three altruistic behaviors, was investigated in relation to age group and sex of the target child. A child could get a maximum of 3 points (helping + sharing + donation) and a minimum of 0 points from this measure. Seven out of 89 target children did not comprehend the donation procedure; hence, their donation scores were coded as missing. In the current analysis, the total altruism scores of those children were computed by giving them "0" points for donation behavior. One-way analysis of variance compared 3-, 4- and 5-year-old girls' and boys' total altruism scores. Levene's test of equality of error variances was not significant, indicating that there were differences between variances in the sample for the dependent variable, $F(5, 83) = .76$, $p = .580$. A significant main effect of age group was found, $F(2, 89) = 16.67$, $p = .0001$. The strength of the association, as indexed by partial eta², was .29, which means that 29% of variance in overall altruistic behaviors was explained by age effect. A Scheffe test pointed out that the mean of total altruism scores of 3-year-olds ($M = .89$, $SD = .87$) was significantly smaller than 4-year-olds' ($M = 1.73$, $SD = 1.01$) and than 5-year-olds' ($M = 2.26$, $SD = .85$). Total altruism scores of 4-year-olds and 5-year-olds did not significantly differ. In addition, analyses indicated no sex effect, either as a main effect, $F(1, 89) = .20$, $p = .658$, or in interaction with age, $F(2, 89) = 1.68$, $p = .192$. Data relevant to those findings are displayed in Figure 10.

Figure 10

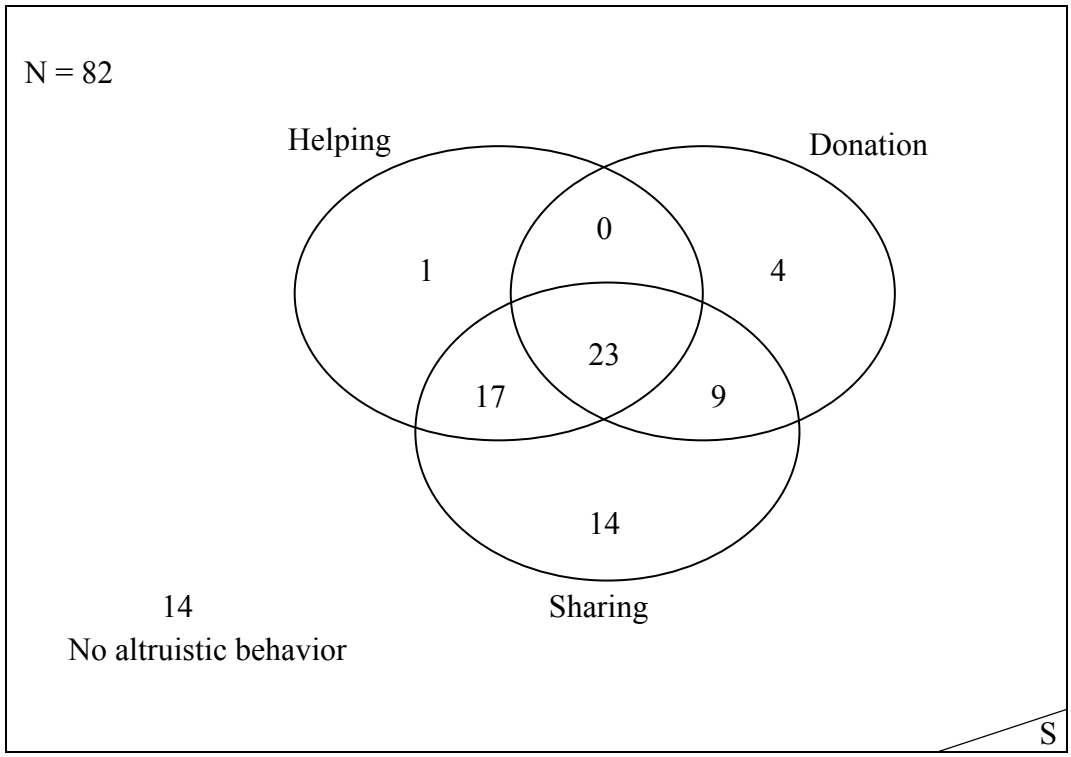
Mean of Total Altruism Scores of Boys and Girls across Age Groups



When the particular altruistic behaviors performed by each child are examined, the result may be diagrammed as overlapping sets, as shown in Figure 11.

Figure 11

Within Subject Set Presentation for Overall Altruism



As demonstrated in Figure 11, out of a total of 82, 23 children displayed all three types of altruistic behavior, and 14 children did not show any kind of altruistic act. One child “only helped”, four children “only donated” and 14 children “only shared”. There were 17 children who shared and helped but did not donate, and nine children who shared and donated but did not help. There was no child who helped and donated but did not share.

CHAPTER IV: DISCUSSION

Are Young Children Really Selfish?

Contrary to the argument that young children are selfish, the results of this study are consistent with early bases for altruism; preschool children were capable of displaying altruistic behaviors, and even among 3-year-olds, more than half of the children displayed at least one type of altruistic act. However, 3-year-olds' altruistic behaviors were limited to one or two kinds of altruistic behavior, mainly sharing; there was no child who competently displayed all three types of altruistic behavior at the age of 3 years. In short, at the age of 3, the children were neither selfish nor competently altruistic; rather, they were displaying altruistic acts within their behavioral repertoire, especially the ones that require less cognitive and empathic processing.

When overall percentages were examined, the proportion of children who exhibited altruistic behaviors was quite high. Sixty-seven preschoolers out of 89 target children – slightly over three fourths – shared "the last cookie" in the cookie box with their peers. More than half of even 3-year-olds displayed sharing behavior. Among 5-year-olds, there was only one child who did not attempt to share the cookie; 5-year-olds seemed to be fully proficient in terms of sharing behavior.

In terms of helping behavior, approximately half of the target children who encountered the opportunity to help their needy peers responded and came to their friends' help by gathering together the rolls of tape that spilled across the floor, handing the tape rolls to the friend, opening the door of the cabinet for the friend, and/or putting tape rolls back into the cabinet themselves. Seven 3-year-olds (25%)

were observed to display helping behavior, while more than half of the 4- and 5-year-olds helped their peers (53.3% and 67.7%, respectively).

For donation behavior, both target and partner children were examined. Percentages for donation behavior were very close to those for helping behavior, except for 3-year-olds whose donation rate remained at 15%. 50.8% of 4-year-olds and 62.9% of 5-year-olds donated some of their stickers to "the children in the other school". Overall, almost half of the children chose to give away some of their stickers.

Cognitive Decentering versus Affective Perspective Taking

Piaget (1963) argued that children in preoperational stage (2 to 6-7 years of age) are not capable of decentering; therefore, egocentric thought is prominent in this age period. Rubin and Schneider (1973) supported the argument that inability to decenter is the cause of preschoolers' immature moral acts and egocentrism. Mussen and Eisenberg-Berg (1977) suggested the role of internalization of social responsibility norm as well as several cognitive functions to explain age-related but also the apparently late development of prosocial behaviors.

However, many studies have found that preschool children are not as selfish as they were earlier thought to be, and that they are capable of behaving altruistically (e.g. Benenson, Pascoe, & Radmore, 2007; Iannotti, 1985; Kakavoulis, 1998a, 1998b; Persson, 2005; Radke-Yarrow & Zahn-Waxler, 1976). The present study is among those that find support for this argument. This means that development of altruism may not be as late as Piaget (1963) assumed, and it may not be as strictly dependent on cognitive development and internalization of social norms as it was previously thought to be. Parallel to Hoffman's theory of empathic development

(1975), Denham (1986) found that affective perspective taking ability of young children was evident even at 2 to 3 years of age. In a series of longitudinal twin studies, empathic capacity and varied prosocial behaviors of even toddlers as young as 2 years old were reported (Zahn-Waxler et al., 1992, 2001; Zahn-Waxler, Robinson, & Emde, 1992). The studies of Warneken and Tomasello (2006, 2007, 2008) and Warneken et al. (2007) provided evidence for very early capability of infants in terms of evaluating others' aims, having altruistic motives and displaying altruistic acts. Although children in the preoperational stage may have difficulties in decentering and comprehending others' perspectives and intentions, this limitation in cognitive functions seemed not to obstruct their altruistic behaviors altogether. Therefore, it is thought that empathy and affective perspective taking ability, which are evident in very early years, as well as internal and early motives to behave altruistically, may play a greater role in the development of altruism than would be predicted by cognitive developmental theory.

Any finding that indicates early development of a pure form of altruism in young children can be interpreted as an evidence for biologically based evolved mechanisms for human altruism (Benenson, Pascoe, & Radmore, 2007; Warneken & Tomasello, 2006, 2007, 2008), as well as an indicator of its social importance and its prevalence as a part of human nature (Kakavoulis, 1998a). Fehr, Bernard and Rockenbach (2008) emphasized that when altruistic behaviors are studied in face-to-face interactions and the target of the altruistic behavior is apparent to the actor, selfish motives that rise from concerns for future reciprocation of favor and reputation seeking may be operative rather than true altruism. However, it may be speculated that children too young for cognitive decentering may also not have the cognitive resources for calculations of reputation and future reciprocation. In the

present study, altruism was not only measured in the sort of one-on-one non-anonymous interactions, such as helping and sharing behaviors, discussed by Fehr, Bernard and Rockenbach (2008), but also donation behavior, which was totally free from expectation concerns and strategic choices and which was also displayed by almost half of the children. Therefore, the present study provided further evidence for an early basis for true altruism and support for "the need to reformulate theories emphasizing the egocentrism and narcissism of young children" as proposed by Zahn-Waxler et al. (1992, p. 133).

Does Altruism Increase with Age in Early Childhood?

The current study also provided evidence for a developmental increase in altruistic behaviors with increasing age; the number of children who acted altruistically increased linearly across the age groups. All three kinds of altruistic behavior were displayed more frequently as children grew older. In addition, when the altruistic behaviors were summed for an overall altruism score and compared across age groups, age was again found to be significantly related to total altruism level of children. When the nature of this relationship was specified, age 3 was found to be different from age 4 and age 5; 3-year-olds were less likely to behave altruistically compared to older children. This finding was interpreted as indicating that the transition from age 3 to age 4 is a crucial period with regard to development of altruism in young children. No effect of sex or sex X age interaction was found with regard to overall altruism level. As noted above, none of the 3-year-old children exhibited all three kinds of altruistic behavior, and 12 target children in this age group did not display any type of altruistic act (this includes those who did not

comprehend donation procedure). On the other hand, at the age of 4, eight children (of 30) exhibited all three types of altruistic behavior. At the age of 5, this number increased to 15 (of 31). There were only four 4-year-old children and only one 5-year-old who did not exhibit any kind of altruistic behavior. In sum, both when each altruistic behavior was analyzed in relation to age and when overall altruistic behaviors of children were compared across age groups, age related increase in altruistic behaviors was evident.

Parallel to the cognitive approach, altruism is a kind of prosocial behavior and, like other prosocial behaviors, its development is also subject to maturation, experience and social interaction. As children grow up, their cognitive ability to decenter increases (Rubin & Schneider, 1973) and the focus of their moral reasoning shifts from themselves to others (Persson, 2005); hence, they become capable of displaying altruistic acts. Peterson (1983) drew attention to the role of task competence and responsibility in age-related increase in altruism. However, it seems that the effect of cognitive functions on age-related increase of altruism does not start as late as cognitive developmental and cognitive learning theorists assume.

Findings of the present study showing developmental progress of altruistic behaviors with age may be further evidence for the deeper, biological roots of altruism (Fehr, Bernhard, & Rockenbach, 2008; Zahn-Waxler et al., 2001). Hoffman (1975) stated that increasing empathic abilities with age foster concern for others and altruistic acts even from early childhood. According to the findings of the cross-cultural study of Henrich, McElreath, Barr, Ensminger, Barrett, Bolyanatz, Cardenas, Gurven, Gwako, Henrich, Lesorogol, Marlowe, Tracer and Ziker (2006, p. 1767), in all cultures altruistic behavior is rewarded and selfish behavior is punished through the mechanisms of cultural learning and “culture-gene coevolution". Therefore,

altruism is one of the social competencies that children are expected to acquire as they grow up.

On a number of bases -- maturation, experience in social interaction, exposure to a social environment where altruism and reciprocal relations are valued, increased competence in cognitive functions, empathic and perspective taking abilities, and moral reasoning -- older children may be expected to perform altruistic behaviors more frequently compared to younger preschoolers. Indeed, longitudinal studies have provided evidence for increase in altruistic behaviors with age in early childhood (Persson, 2005) as well as in infancy (Zahn-Waxler et al., 1992, 2001; Zahn-Waxler, Robinson, & Emde, 1992). Nevertheless, in the accumulated literature, some studies have failed to find an association between altruistic behaviors and age in early childhood (e.g. Bar-Tal, Raviv, & Goldberg, 1982; Buckley, Siegel, & Ness, 1979; Eisenberg-Berg & Hand, 1979; Radke-Yarrow & Zahn-Waxler, 1976). However, the present study provided storng evidence for the hypothesis that children's altruistic behaviors increase with age in terms of both quantity and variety through early childhood.

However, when the relationships between altruistic behaviors and age were examined in frequency analyses by controlling sex of the children, a significant age-related increase in helping and sharing was found only for girls, even though boys followed the same general pattern, and the age effect was significant for both sexes in donation. This was an unexpected finding since, although some studies in the literature found a slight sex difference favoring girls, to the best of our knowledge none of the studies reported an effect of sex on the relationship between age and altruism in young children. However, as stated previously, neither a sex effect nor a sex X age interaction was found when overall altruism levels were compared across

age groups; this specific finding regarding age-related increases in helping and sharing in girls was brought to light in frequency analyses which examined the association between age and altruism for each type of altruistic behavior separately for each sex. Inspection of Figures 2, 3, 5 and 6 shows that, while the frequency of boys' helping and sharing increased with age, the failure to find a significant association probably stemmed from the fact that there was a narrower range for boys than for girls for both tasks.

A possible explanation for this difference between the sexes may be that suggested by Zahn-Waxler et al. (2001): girls may be moving faster from self-directed distress to other-directed concern, since girls' self-distress is supposed to be as high as their empathic abilities. However, further research is required to determine whether this is a robust phenomenon, and if so, what its possible explanations may be.

Multidimensional Nature of Altruism

Measurement of altruism in this study was not restricted to a single behavior, but covered three different types of altruistic behavior, namely helping, sharing and donation. These have been the altruistic behaviors observed most frequently among preschoolers (Strayer, Wareing, & Rushton, 1979; as cited in Berk, 1983). According to Mussen and Eisenberg-Berg (1977), various cognitive and empathic abilities are involved in development of altruism in childhood. Bar-Tal, Raviv and Goldberg (1982) demonstrated that different types of altruistic behaviors require different abilities at different competence levels. Several studies found different associations and diverse correlates with related concepts between and

across different types of altruistic behaviors (e.g. Eisenberg et al., 1984; Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Lennon, 1980; Iannotti, 1985; Rubin & Schneider, 1973; Zahn-Waxler & Radke-Yarrow, 1976). Therefore, it was expected that some kinds of altruistic behaviors may be observed earlier and more frequently than others, while those that require more advanced cognitive, social and empathic maturation may develop later. By measuring different altruistic actions, the present study was carried out to observe development of different kinds of altruistic behaviors at different ages; and to examine how different kinds of altruistic behaviors were linked to each other at each age level.

In the sharing situation, the child engages in a rather simple altruistic decision-making process where the target of the behavior (the partner) is visibly available, and a visibly available object of sharing (cookie) is the subject of distribution. However, for helping, the child must elaborate the partner's situation, realize that the partner needs help, understand the partner empathically, and perform behaviors that are beneficial to the partner. For donation behavior, besides the cognitive and empathic abilities required for helping behavior, the child must also imagine the targets of the altruistic acts and decide to behave altruistically in their absence, which requires a more advanced and internalized empathic ability. Thus, the simplest altruistic act would appear to be sharing, followed by helping and finally donation, and it was expected that these different altruistic acts would follow this order in age of development. The general trend observed was congruent with the expectations: sharing was the most frequently observed altruistic behavior; approximately two thirds of all children shared their cookies with their friends. It was followed by helping behavior and donation behavior, respectively, with helping

slightly (but nonsignificantly) more frequent than donation; as expected, the percentage difference between helping and donation was higher at earlier ages.

At the age of 3, variations between different altruistic behaviors were greatest: sharing behavior was displayed by 53.6% of 3-year-olds, but helping was observed in only 25%, and a donation was made by only 15% of 3-year-olds. Similar tendencies were seen at the other age groups as well: sharing was the most frequently performed altruistic behavior, helping was the second and donation was the third. At the age of 3, the number of children who showed altruistic behavior surpassed those who did not only for sharing behavior. Note that the percentage of children who shared at the age of 3 was reached by donation behavior and helping behavior at the age of 4 (approximately 50%); and the percentage of children who shared at the age of 4 (73.3%) was not attained by helping and donation behaviors by children even at the age of 5 (67.7% and 62.9%, respectively). Nevertheless, as age increased, the difference between helping and donation behaviors diminished. Overall, both helping behavior and donation behavior were displayed by almost half of the children.

The finding of no significant difference between helping and donation was contrary to predictions; the cognitive and empathic demands of the donation task were thought to be higher compared to helping behavior. An explanation for this finding can be made based on the study of Rubin and Schneider (1973). In their experiment, helping and donation behaviors were found to be highly correlated. However, the correlation between helping behavior and decentration ability was higher compared to that between donation behavior and decentration ability, suggesting that for helping behavior children needed to have higher decentration capacity. Rubin and Schneider (1973, p. 664) explained this difference on the basis that the donation procedure itself "involved the presentation of a decentration cue to

the children". In other words, the wording of the donation procedure reminded the child of the other alternative (donating some of their candies to poor children), thus helping the child to shift her attention to someone other than herself and making it easier to decenter and display the altruistic act. On the other hand, in the helping situation, it is up to the child to think of the altruistic alternative; hence, helping behavior may require better-developed decentration ability. Effect of decentration ability and hence the decentration cue may have been determinative in the present study, too. Although in the donation procedure target of the generosity was absent and the child had to empathically think of "anonymous others' desires" which required more mature cognitive and empathic abilities, the decentration cue embedded in the wording of the procedure may have balanced this difficulty. This wording cue effect may have been more helpful to the older age groups, as the difference between helping and donation behavior was higher at age 3, when children's verbalization abilities of were not fully yet mature, and the percentage difference between helping and donation was greatly reduced at older ages.

This multidimensional task also made it possible to make further comparisons between different kinds of altruistic behaviors simultaneously and to examine the developmental pathways those behaviors follow. The results of the study indicated that sharing behavior was more strongly connected to age than helping and donation behaviors. However, as stated previously, sharing and helping behaviors were significantly associated with age only for girls. When the relationship between age and altruistic behaviors of girls was evaluated, once again the strongest association of age was with sharing behavior, followed by helping behavior and donation behavior.

When the nature of the relationships was analyzed, the largest changes in helping and donation behaviors were observed during the transition from 3 to 4 years of age. 3-year-olds were significantly less likely to help and donate compared to older children; but no significant increment was found between the ages 4 and 5. In contrast, for sharing behavior, 3- and 4-year-olds were more alike as more than half of the children displayed sharing behavior even at the age of 3, and this percentage did not significantly increase at 4 years of age, but there was a jump at age 5 when almost all children shared the cookies with their partners. These age patterns suggested that different altruistic behaviors follow different developmental pathways. 4- and 5-year-olds were more alike in terms of helping and donation rather than sharing behaviors, suggesting that the former two follow similar developmental sequences.

Moreover, investigation of different types of altruistic behaviors within case suggested that there were many more children who "only shared" compared to the ones "only donated" and "only helped". In addition, it was found that out of 82 target children, 23 children shared but did not help, while there was just one child who helped but did not share (other children either both shared and helped or did not share and did not help). Similarly, when donation and sharing behaviors were evaluated within subjects, 31 target children shared but did not donate, while four children donated but did not share (out of valid cases). On the other hand, within-subject comparison of helping and donation behaviors revealed more similar frequencies: in 82 valid cases, 18 children helped but did not donate, while 14 children donated but did not help. None of the children helped and donated but did not share, which means that a child who helped or donated most probably shared, but not vice versa. This examination also strengthens the multidimensional view of

altruism, since while helping and donation were again much alike, sharing was observed earlier, more frequently and in a different developmental sequence compared to helping and donation.

Those findings were parallel to previous studies to some degree, but also contradicted them in certain aspects. In the experimental study of Radke-Yarrow and Zahn-Waxler (1976), sharing behavior and helping behavior were also not found to be correlated. However, helping behavior was the most frequently observed altruistic behavior of preschoolers in the laboratory task as well as in naturalistic observations; the overall percentage of children who helped in the laboratory task was very close to that in the current study (52% in Radke-Yarrow and Zahn-Waxler's study and 49.44% in the current study). On the other hand, the percentage of children who shared in the laboratory task remained at 33% in their study. It is important to note that unlike the present study, the target of the helping and sharing tasks used by Radke-Yarrow and Zahn-Waxler (1976) was an adult rather than a peer. Based on this comparison, it can be speculated that helping and sharing behaviors are actually different kinds of altruistic behaviors, but responses of children might vary depending on the nature of the methodology (whether a laboratory task or naturalistic observation) and target of the behaviors (whether an adult or a peer). Similarly, observational studies of Eisenberg-Berg and Hand (1979) and Eisenberg et al. (1984) with preschoolers suggested that sharing behavior and helping behavior were not correlated, and only sharing behavior was found to be related to moral reasoning orientation and moral judgment. However, their reasoning was different from the explanations in the current study: Eisenberg et al. (1984, 1999) explained the results on the basis that helping behavior might be less costly than sharing behavior, since there was something to lose in the sharing condition, while in the helping condition

there was not. Hence, the former is higher in cost and requires more cognitive reflection and moral judgment than the latter one, which is supposed to be more automatic. Supporting their argument, in those studies helping behavior was generally found to be the most frequently observed altruistic behavior shown by children (Eisenberg-Berg & Lennon, 1980), while in the study of Eisenberg-Berg and Hand (1979), helping behavior was combined with comforting behavior, and in the study of Eisenberg et al. (1984), the percentages were small and very similar. In contrast, in the study of Iannotti (1985) sharing behavior was the most frequently observed altruistic behavior in naturalistic observations. In structural tasks, donation behavior and helping behavior, which were highly correlated in the tasks of Rubin and Schneider (1973), were found to be unrelated. This could be due to the fact that in Iannotti's study, the target of donation behavior (which was called "sharing" in that study) was not unknown, but rather the child's best friend, which may have reduced the empathic and cognitive demands of the task. In addition, similar to the study of Radke-Yarrow and Zahn-Waxler (1976), Iannotti (1985) found that the two measures of helping behavior (one in a laboratory task and the other a naturalistic observation assessment) were not correlated. More surprisingly, in the laboratory tasks, donation behavior was performed by more children (56%; comparable to the percentage in the present study) compared to helping behavior (37%). In sum, although all of these researchers agreed on the multidimensional nature of altruism, which also gained support from the present study, findings were mixed, explanations were contradictory, and it was difficult to compare one study with another. This limitation was mostly due to lack of a standard measure to study altruism in early childhood.

Structured Altruism Task as a Method of Observing Altruism in Young Children

A further aim of this study was to construct a valid and comprehensive task to observe altruism in early childhood considering young children's cognitive, emotional and behavioral limits. Actually, transition from infancy to early childhood is a critical period in which to investigate the roots of altruism, since it is the time when children start to display early and pure forms of altruistic and empathic behaviors (Robinson, Zahn-Waxler, & Emde, 2001). However, it is essential to use appropriate and sensitive measures (Denham, 1986) and ecologically valid operational definitions of altruistic behaviors (Aronfreed, 1969). For this purpose, the helping and sharing procedures used in the study by Buckley, Siegel and Ness (1979) and donation procedure used by Benenson, Pascoe and Radmore (2007) were combined, with appropriate modifications. The children were investigated in a familiar setting and their spontaneous altruistic behaviors could be observed structurally in a routine activity. Keeping in mind sex segregation among preschool children (Maccoby, 1998), same-sex pairs were established. Precautions were taken to prevent any confounding variable that may arise from experimenter effect or history of friendship. In the light of suggestions by Simmons and Sands-Dudelczyk (1983) and the methodological problems identified by Denham (1986), it is thought that a valid, reliable and structured assessment technique was created to reveal young children's altruistic capacities. Only in the donation procedure did some of the children (17; almost all 3-year-olds) have difficulty in grasping the procedure of the task, as the wording of the donation phase might have exceeded their verbal understanding.

In addition, this structured task allowed three different types of altruistic behavior to be investigated and compared simultaneously, enabling us to capture the

full meaning of altruism and to examine its multidimensional nature. Observer reliability analyses showed that altruistic behaviors of children were easy to identify; hence, observations and coding were non-problematic and reliable. Observations and analyses indicated that the structured observational task used in the present study was a suitable measure to observe altruism of young children systematically.

One drawback of this task was that coding was based on absence or presence of behaviors. Therefore, statistical analyses were limited to non-parametric frequency tests, and multiple comparisons between variables were hard to achieve. However, it would be possible to overcome this problem by studying with a larger sample by using continuous variables like response time and number of stickers donated or by using more advanced statistical procedures like loglinear models. Overall, it was thought that this task would make an important methodological contribution to the study of altruism in young children, providing a tool to gain a deeper understanding of the development of this phenomenon in early years.

Limitations and Future Directions

One of the major limitations of this study is that the experimenter who executed observational task with children was the same person who designed the task. Therefore, the experimenter was not blind to the aims and expectations of the study, naturally. For example, Rosenthal (1966; cited in Rosenthal, 1991) focused on how the investigator's expectation can create an "experimenter-expectancy effect". Experimenter-expectancy effects can be seen as one type of interpersonal expectancy effect, where an experimenter acting in accordance with his expectations, treats subjects in such a manner as to elicit behavior that tends to conform to his

hypotheses (Rosenthal, 1991). Although extra care was devoted to execute each trial with standard procedure as much as possible, unintentional changes in the tone of voice, for instance, or facial expressions reflecting expectations from the child were always possible. This is a common drawback of experimental studies when the manipulation giver is not blind to the predictions of the study. In future studies, it would be possible to overcome this problem by working with a larger research team, which includes double-blinded executors of the task.

A further limitation is due to the nature of the concept under investigation. The families who allowed their children to participate to the study by signing the informed consent form may have been those who were most helpful and compliant and willing to contribute to scientific research. Therefore, we may have possibly studied mainly children from altruistic families.

Another shortcoming of the present study is its restricted sample size. In addition to that, composition of the sample was highly homogenous in terms of socio-economic status of the children, since only upper-middle class private nursery schools participated in the study. Future studies with larger and less homogenous samples will increase the generalizability of the results.

The task used in the present study is very open to investigation of the effects of different manipulations by making appropriate modifications. In addition, observing pairs of children for half an hour in this structural task also provides rich qualitative data. The present study might set a base in terms of methodology for future studies aiming to investigate young children's altruism.

Conclusion

This study aimed to extend earlier work on altruism in early childhood by using a structured observational altruism task. Many preschool children who participated displayed altruistic behaviors including sharing, helping and donation, and observation of these behaviors in children as young as 3 years old provided evidence for early foundations of altruism. In addition to cognitive abilities like perspective taking and decentering, empathy and a predisposition toward altruism that is also fostered and valued by society even from early years of life may be factors in this early development of altruism. Moreover, in this critical developmental period, altruism was found to be a developmental competence that increases with age. When overall altruism was examined, all types of altruism increased with age for both sexes, and the transition from age 3 to age 4 was identified as a critical period for development of helping and donation. Thus, with increasing age, it was thought that young children become capable of not only taking into account other's point of view but also empathically think of and understand another person's needs (for help), wants (for a cookie) and desires (for a sticker). Plus, they could actively sacrifice muscular effort, half of "the last cookie" and valuable stickers to "benefit others", although no one told them to do so and they would not receive any kind of reward for those behaviors or even be witnessed while carrying them out, suggesting early signs of true altruism following a developmental sequence as a part of human nature. The multidimensional view of altruism also gained support from this study; sharing behavior was displayed by more children even from early years and it differed from helping and donation behaviors in terms of the developmental pathway it followed. Why sharing behavior might predominate over other altruistic behaviors in early childhood, and why development of altruism

appeared to follow a clearer path for girls remained as critical questions for future studies. In sum, this study provided new understanding of the development of altruism in early years of life, as well as proposing a reliable and valid structured observational task for the systematic study different altruistic behaviors of young children.

APPENDICES

APPENDIX A

Informed Consent Form

Bilgilendirilmiş Olur Formu

Sayın Veli,

Boğaziçi Üniversitesi Psikoloji Bölümü Gelişimsel Psikoloji Yüksek Lisans öğrencisi Pınar Engin tarafından hazırlanan "Erken Çocuklukta Sosyal Davranışların Gelişimi" konulu tez çalışmasına 3, 4 ve 5 yaşlarındaki anaokulu öğrencilerinin katılımı beklenmektedir. Araştırma, çocukların yaşıtlarıyla aktiviteleri sırasındaki sosyal davranışlarının gözlemlenmesini içermektedir.

Okul müdürünün ve öğretmenlerin uygun bulduğu saatler içinde gerçekleştirilecek çalışmada öğrenciler ikişerli gruplar halinde 20-25 dakika sürecek oyun aktivitesine katılacaklardır. Oyun aktivitesi boyunca çocuklar video kamera ile kaydedileceklerdir. Oyunun sonunda öğrencilere katılımlarından ötürü çeşitli yapıştırmalar ve tatlı kurabiye hediye edilecektir. Öğrenciler, diledikleri an hediye haklarını kaybetmeden oyunu bırakıp çıkabilirler.

Bu tez çalışması Boğaziçi Üniversitesi Psikoloji Bölümü öğretim üyelerinin denetimi altında yürütülmekte olan bilimsel amaçlı bir projedir. Araştırmanın çocuklar üzerinde olumlu yada olumsuz bir etkisi yoktur. Araştırmanın amacı yaş gruplarının konuyla ilgili genel özelliklerini tespit etmektir. Çalışmaya katılacak tüm öğrencilerin kimlik bilgileri gizli tutulacaktır. Araştırmaya yalnızca velisinin izni olan öğrenciler alınacağını belirtir, çocuğunuzun katılımı için izninizi rica ederim.

Sorularınız için aşağıda belirtilen iletişim bilgilerini kullanabilirsiniz. Eğer çocuğunuzun araştırmaya katılmasına izin veriyorsanız lütfen aşağıda ilgili kısmı doldurup imzalayınız. Değerli katkılarınız için şimdiden teşekkürler.

Saygılarımla,

Tez öğrencisi
Pınar Engin
Boğaziçi Üniversitesi, Sosyal Bilimler Enstitüsü
Psikoloji Bölümü, Gelişimsel Psikoloji Yüksek Lisans Programı
Tel: 05385042536
e-posta: pinar1112@yahoo.com

Yukarıdaki bilgileri okudum , anladım ve bu formun bir örneğini aldım. Velisi bulunduğum .....'ın araştırmanıza katılmasına izin veriyorum.

Velinin ad soyadı:
Çocuğunuzun doğum tarihi (gün/ay/yıl):
Tarih:
İmza:

APPENDIX B

Wording of the Procedure

Standart Prosedür Sözleri

“Merhaba çocuklar. Benim adım Pınar, sizlerin? Peki, sen T, sen de P. (Araştırmacının solundaki çocuk “hedef”, sağındaki “partner” olarak atanır.) Sizlerle tanıştığıma memnun oldum. Bugün birlikte bir yap-boz oyunu oynayacağız, ve birlikte çok eğleneceğiz, yap-boz oynamayı sever misiniz? Oyunumuzun sonunda sizi bekleyen küçük hediyelerimiz de var. Buradaki kamera da sizin resminizi çekiyor, el sallayın kameraya. Çok güzel.”

(Odadan ayrılmak üzere kalkar, kapıya yönelir. Odadan ayrılmadan önce, çocuklara dönerek:)
“Şimdi ben oyunumuz için gerekli malzemelerimizi alırken, P, senden rica etsem masadan kalkıp şuradaki dolabın kapağını açarak dolabın içindeki pembe çiçekli torbayı masamıza getirir misin? Ben şimdi döneceğim.

(Partner çocuk dolap kapağını açmak üzereyken:)
“Ortalığı dağıtma.”

----------110 saniye----------

(Araştırmacı 110 saniyenin ardından odaya döner, dışarıdan getirdiği kurabiye kutusunu dolabın üstüne koyar, dökülen bantlarla ilgili toplanmış olsa da olmasa da herhangi bir yorumda bulunmaz, eğer çocuklar yap-bozu masa getirmemişlerse yap-bozu masaya alır ve torbadan çıkartır. Oyuna başlamadan önce yap-bozun üstündeki resim ile ilgili konuşulur ve ardından parçalar sökülerek oyuna başlanır.)

(Oyun bittiğinde:)
“Tebrikler. Eğlendiniz mi çocuklar? Çok güzel. Bir kurabiye molası vermenin zamanı geldi. (Odadan ayrılmak üzere kalkar, kapıya yönelir.) Ben de bu sırada dışarıdan hediyelerinizi alıyım.”

(Odadan ayrılmadan önce, çocuklara dönerek:)

“T, bu kez senden rica etsem, şu dolabın üzerinde duran kurabiye kutusunun içinden kurabiye servisini yapabilir misin lütfen?
(Hedef çocuk kurabiye kutusunu açmak üzereyken:)
“Ben dışarıdayken siz kurabiyelerinizi yemeye hemen başlayabilirsiniz.”

----------110 saniye----------

(110 saniye sonra araştırmacı odaya döner.)
“Çalışmamız bitmeden önce size teker teker hediyelerinizi vereceğim. T, dilersen önce seninle başlayalım, P’ciğim, bu sırada sen beni kapının önünde bekleyebilir misin rica etsem, T çıktıktan sonra sana da aynı hediyeleri vereceğim, hediyelerinizi yalnızken vermem gerekiyor.”

(Hedef çocukla odada yalnız kaldıktan sonra 30 yapıştırmanın bulunduğu tepsi çocuğa gösterilerek:)
“T, buradaki yapıştırmalardan en beğendiğin 10 tanesini seçebilirsin.” (Çocuğun yapıştırmaları seçmesine izin verilir, seçtiği yapıştırmaları masanın üstüne dizmesi sağlanır.)

“Yapıştırmalarını sevdin mi?” (Çocuk onayladıktan sonra:) “Bu yapıştırmaları evde istediğin yere yapıştırabilirsin, yatağına, dolaplarına, kitaplarının üstüne...”

“Bu yapıştırmalar senin ve bunlarla istediğin şeyi yapabilirsin. Ama gitmeden önce seninle özel bir konuda konuşmak istiyorum. Bizim, diğer okuldaki çocuklara da verecek kadar çok yapıştırmamız yok. Eğer istersen kendi yapıştırmalarından diğer okuldaki çocuklara gönderebilirsin ve biz de senin için diğer çocuklara ayırdığın yapıştırmaları onlara götürebiliriz. Bu yapıştırmalar senin, verme zorunluluğun yok, karar tamamen senin, kimse de kararını bilmeyecek. Ama yine de yapıştırmalarından diğer okuldaki çocuklara göndermek istersen yapman gereken ben odadan çıktıktan sonra diğer çocuklara vermek için seçtiğin yapıştırmaları buradaki tahta kutulardan birine bırakıp kutuyu kilitlemek; kendine ayırdığın yapıştırmaları da cebine koyabilirsin. Diğer okuldaki çocuklara götürmemizi istediklerini tahta kutuya, kendine ayırdıklarını cebine... Bu sırada odada yalnız olacaksın ve hiç kimse senin kilitli kutuya kaç yapıştırma koyduğunu ya da koyup koymadığını bilemeyecek, bak

zaten kutuların hepsi birbirine benziyor ve üstlerinde kilitleri var. Unutma bu yapıştırmalar senin ve diğer çocuklara vermek zorunda değilsin, karar tamamen sana ait, içinden onlara yapıştırma göndermek geliyorsa tahta kutuya koyabilirsin, ya da istersen hepsini eve götürebilirsin. Nasıl yapabileceğini anladın mı? Anlaştık mı, aklına takılan bir şey varsa lütfen sor."

(Çocuğun prosedürü tamamen anladığına emin olduktan sonra:)
"Şimdi ben odadan çıkıp seni yalnız bırakıyorum, sen kararını verip odada işin bitince kapıyı tıklat, seni kapının önünde bekliyor olacağım.
Anlamadığın bir şey var mı?"

(Bağış yapma prosedürü diğer çocukla da aynı şekilde tekrarlanıp çalışma sonlandırılır).

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