

Original Article

Sex Differences in the Value of Parents versus Same-Sex Peers

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Abstract: The current research examined the hypothesis that males derive greater benefits than females do from cooperation with same-sex peers versus parents. In Study 1, 194 children, early adolescents, older adolescents, and adults from Brussels, Belgium predicted whether parents or same-sex peers would provide more benefits to a typical individual of their same age and sex. Results showed that at all four age levels, compared with females, males predicted that same-sex peers would provide more benefits relative to parents. Study 2 was designed to examine which benefits same-sex peers relative to parents provide more for males than females. In Study 2, 50 young adults from Montreal, Canada were asked to report to what extent same-sex peers and parents satisfied physical needs, fulfilled socioemotional needs, and helped with acquiring societal skills over the past year. Males more than females reported that same-sex peers relative to parents satisfied socioemotional needs and helped with the acquisition of societal skills. Discussion revolves around the hypothesized differential relations of males and females to families versus same-sex peers.

Keywords: kin selection, mutualism, peers, sex differences

Study 1

Introduction

Kin selection theory posits that altruism should be directed more towards kin than non-kin (Hamilton, 1964) which empirical studies with humans confirm (e.g., Essock-Vitale and McGuire, 1980, 1985; Korchmaros and Kenny, 2001; Neyer and Lang, 2003;

Stewart-Williams, 2007). Because an individual's fitness depends on survival and reproduction of genes, the individual will preferentially help others who share more of the same genes and who can be expected to help them in the future. Most studies of human altruism focus on the relation between individual altruism and degree of relatedness.

More recent approaches examine the benefits of helping genetically unrelated individuals. Several mechanisms have been identified that demonstrate that an individual's fitness is improved by cooperating with non-kin (Nowak, 2006). Which individuals constitute beneficial partners depend on factors such as past reciprocity, reputation, networks, and the characteristics of the group. Research with non-human animals suggests that some fundamental characteristics, such as age, sex, social structure, and mating system of the species, also influence choice of cooperative partners (for examples, de Waal and Tyack, 2003; Harcourt and de Waal, 1992).

Across mammalian species including humans, most interactions with non-kin become segregated by sex after infancy (for reviews, Conradt, 1998; Marlowe, 2007) with the exception of regular interactions between mating partners in a few primate species (e.g., Small, 1995). In humans' two genetically closest living relatives, chimpanzees (*Pan troglodytes*) and bonobos (*Pan paniscus*), while sex-segregation begins after infancy, patterns of cooperation between non-kin differ markedly for each sex (Boesch and Boesch-Achermann, 2000; de Waal, 2001; Kano, 1992; White and Burgman, 1990; White and Chapman, 1994; Wrangham, 1986; Wrangham, Clark, and Isabirye-Basuta, 1992). Whereas female bonobos form alliances with unrelated females, male bonobos rarely form alliances with unrelated males. In marked contrast, male chimpanzees form alliances with unrelated males, whereas female chimpanzees rarely form alliances with unrelated females. Female bonobos' alliances facilitate food sharing and protection from male aggression, allowing females to dominate males. Male chimpanzees' alliances prove valuable for hunting monkeys, meat sharing, and intercommunity aggression, activities which rarely if ever occur in bonobo communities. Male chimpanzees' alliances also permit them to dominate females.

Like chimpanzees, but unlike bonobos, across diverse societies human males engage in frequent hunting (Marlowe, 2007), meat sharing (Hawkes, O'Connell, and Blurton-Jones, 2001) and intercommunity aggression (LeBlanc and Register, 2003), and males almost universally dominate females (Rosaldo and Lamphere, 1975). Further, like chimpanzees, beginning in middle childhood and continuing into adulthood, human males form large cooperative structures with unrelated males, whereas human females more often associate with one unrelated female at a time or in small cliques (Benenson, 1990; Benenson, Apostoleris and Parnass, 1997; Gabriel and Gardner, 1999; Markovits, Benenson, and Dolenszky, 2001; Savin-Williams, 1980; Seeley, Gardner, Pennington, and Gabriel, 2003).

Theoretically, human males appear to benefit from mutualism in which each individual's genetic fitness is enhanced through cooperation with one another (Alexander, 1987; Tiger, 1969; Wrangham, 1999). Geary (1998) argues specifically that human males have evolved to form coalitions with other males of similar ages, whereas females focus exclusively on kinship and hold high standards for friends. Although researchers disagree as to whether human societies are male philopatric (for a review, Alvarez, 2004), researchers concur that humans' closest genetic relatives, chimpanzees (Wrangham, 1999)

and bonobos (de Waal, 2001; Kano, 1992), form coalitions primarily with genetically unrelated individuals with the exception of mothers and offspring.

In human society, compared to females, males more frequently pursue goals whose success relies on large numbers of participants, in particular intercommunity aggression, creation and distribution of resources, and establishment of governing bodies (Alexander, 1987; Tiger, 1969; Wrangham, 1999). Recent research indicates that males are more concerned than females with the skills (intelligence, athleticism, financial potential, creativity) as well as the social connections of friends (Vigil, 2007). By contrast, females focus on maximizing the welfare of their own children, a goal shared with close kin, but few others (Geary, 1998). Taken together, this suggests that males should be more invested in large numbers of males and less invested in kin relations.

Supporting this theoretical prediction, cross-cultural research from diverse societies demonstrates that beginning in middle childhood males spend more time with unrelated same-sex peers than females do, whereas females spend more time with family members (Belle, 1989; Wenger, 1989; Whiting and Edwards, 1988). In her extensive review of the research on sex differences in childhood peer relations, Maccoby (1998) concludes the “forces drawing boys together ... appear to be stronger than the own-gender forces binding groups of girls” (Maccoby, 1998, pp. 51-52). Empirical studies in the US have demonstrated that even in preschool classrooms, compared to females, males spend more time away from female teachers and in closer proximity to same-sex peers (Huston and Carpenter, 1985; Huston, Carpenter, Atwater, and Johnson, 1986). Empirical studies of children’s free time in the United States, Canada, and Sweden showed that males spent more time than females with same-sex peers relative to family members (Benenson, Morganstein, and Roy, 1998; Bryant, 1985; Tietjen, 1982). From early childhood onwards, young human males are more drawn to same-sex peers, strongly implying that male peers provide greater benefits.

Which benefits accrue from cooperation with same-sex peers for males remains unknown. Vigil’s (2007) recent research indicates that intelligence, athleticism, financial potential, creativity, and social connections are more valued in same-sex friends by males than females. Researchers who study chimpanzees estimate that it takes 20 years of practice for a male to become a skilled hunter (Goodall, 1986), and much of a male’s time is spent with unrelated adult males. Human males too require almost 30 years to peak in skill at hunting (Walker, Hill, Kaplan, and McMillan, 2002), and much of their time too is spent with adult male company.

Further, research humans demonstrates that across diverse cultures, although mothers request help with child care and food preparation from both daughters and sons, only daughters respond (Whiting and Edwards, 1988). In both chimpanzee and human cultures, it appears that females more than males learn skills from mothers, whereas males spend increasing amounts of time away from their mothers and with unrelated males. Research has demonstrated that only female chimpanzees learn from their mothers to hunt for termites, although both female and male juveniles accompany mothers to the same extent during her termite fishing expeditions (Lonsdorf, Eberly, and Pusey, 2004). Across primate species, child care skills are acquired by females by observing mothers as well as through practice caring for younger siblings, while males spend increasing amounts of time with the male peer group (Smith, 2005).

Not surprisingly then, studies comparing the behavior of human males and females typically characterize males as more agentic, instrumental or achievement-oriented (Bakan, 1966; Barry, Bacon, and Child, 1957; Parsons, Bales, and Shils, 1953) despite much cross-cultural research showing that females generally spend longer hours working than males do (Hochschild, 1989; Whiting and Edwards, 1988). The most obvious explanation for this conclusion stems from the more public nature of human males' work and the hidden sphere of females' domestic duties (Bronstein, 2001; Ember, 1981; Hochschild, 1989).

Research specifically designed to compare human males' and females' relationships with unrelated same-sex peers supports the public/societal versus domestic distinction. Studies indicate that males compete and cooperate to complete culturally valued public tasks more than females do. From childhood through adulthood, compared to females, males' same-sex peer relations are considered more competitive (e.g., Ahlgren and Johnson, 1979; Bem, 1974) and more cooperatively task-oriented (for reviews, Aries, 1996; Bakan, 1966; Parsons et al., 1953; Tiger, 1969). In contrast, females' peer relationships are distinguished by their emotional expressiveness, intimacy, and vulnerability (for reviews, Aries, 1996; Bakan, 1966; Benenson, 1996; Buhrmester and Prager, 1995; Verkuyten and Masson, 1996; Winstead and Griffin, 2001), foci critical to successful child-rearing and caring for dependent family members (Best, 2001). Females' relationships with same-sex peers therefore resemble those with mothers and other kin. By contrast, males' relationships with unrelated peers rely to a greater extent on acquiring skills not learned from mothers or within the family (for reviews, Barry et al., 1957; Bronstein, 2001). In advanced societies, females may even acquire societal skills through family members or those resembling them such as female mentors (e.g., Blake-Beard, 2001). If this conclusion proves accurate, then sex differences in the value of genetically unrelated same-sex peers relative to family members should be greater for human males than females. The goal of the present study was to test this hypothesis.

Materials and Methods

Participants

Thirty-nine children, 61 early adolescents, 51 late adolescents, and 43 adults working at a local transport office in Brussels, Belgium participated in the study. Table 1 displays the mean ages and number of participants at each age level (see Table 1). Permission to conduct the study was obtained from the heads of one primary and one secondary school and from the director of the local transport office. In both the primary and secondary schools, students participated in their classrooms. At the transport office, individuals were approached and asked to participate during their free time. All participants were Caucasian in descent and from middle socioeconomic status (SES) backgrounds.

Table 1: Mean Ages of Participants in Study 1

Age level	Males			Females		
	<i>n</i>	<i>M</i>	(<i>SD</i>)	<i>N</i>	<i>M</i>	(<i>SD</i>)
Children	20	10.30	(0.57)	19	10.21	(0.42)
Early adolescents	29	12.55	(0.51)	32	12.38	(0.55)
Older adolescents	24	17.63	(0.71)	27	17.30	(0.47)
Adults	21	32.71	(7.49)	22	25.14	(3.47)

Procedure

A procedure was developed and pilot tested that permitted direct comparisons of the helpfulness of kin versus peers and that could be understood by individuals varying in age from childhood through adulthood. Because past research suggests that females consistently report more positive views of relationships in general than males do (Chodorow, 1978; Gilligan, 1982), it was critical to develop a procedure that required comparing the benefits of different kinds of relationships. Of all genetic ties, parents generally provide the most support (Campbell, 1999; Trivers, 1972). Typically, mothers provide more support than fathers do (Campbell, 1999; Konner, 2005), but fathers can constitute important sources of support as well (for examples, Hewlett, 1992). Therefore, both parents were selected to represent the family, though participants were instructed to focus on the parent that provided the most support.

The relative impact of same-sex peers to parents constituted the focus of the present study. Therefore, same-sex peers served as the comparison. Because researchers in primatology distinguish between friends and valuable allies (Preuschott, Wang, Aureli, and de Waal, 2002), we included two types of same-sex peers: a best friend and a friend with whom the target individual works well.

Individuals at the four age levels were asked to consider a scenario in which a hypothetical target individual of their sex and age required help over the course of a week. Constructing a hypothetical target permitted individuals to access the mental models they hold of help-seeking for individuals of their same sex and age and thus should be more generalizable than simply accessing individual's estimates of their own behavior (Markovits et al., 2001). The kind of help the target individual required was left unspecified, so that participants could imagine the kinds of help would prove most beneficial for someone of their same age and sex.

After the hypothetical target individual who required help was introduced, four potential helpers were described: the target individual's mother, father, same-sex best friend, and same-sex friend with whom the target individual worked well. All four potential helpers were described as being equally able and willing to help. The sequence in which the four potential helpers were presented was varied, such that half the male and female participants of each age level received one sequence (mother, father, best friend, friend who works well with target) and the other half received the reverse sequence (friend who works well with target, best friend, father, mother).

The target individual then was described as having 18 free time intervals during the coming week during which she or he could receive help from any of the four potential helpers. The instructions specified that the target individual could solicit help from just one of the four potential helpers for all 18 intervals, from two of the four potential helpers for either equal or unequal numbers of intervals, or from three or four of the potential helpers. The task for the participant was to predict how many time intervals a typical individual of their age and sex who needed help would solicit help from each of the four potential helpers. The participant had to write the number of time intervals on a line following each potential and ensure that the total number added to 18. Eighteen time intervals were selected, so as to discourage participants from simply predicting that each of the four individuals would be asked to help for the same number of intervals. Although a small number of participants (8/194 or 4%) nonetheless distributed the time intervals equally for

each individual (4.5 intervals/helper), the results remained unchanged when these participants were excluded, so the final results include all participants.

Because time intervals distributed between helpers were not independent, for each participant one score was computed for parents by adding the number of time intervals allocated to the mother and father, and one score was created for same-sex peers by adding the number of time intervals allocated to the best friend and friend with whom the target individual worked well. The final score for each participant consisted of subtracting the number of intervals predicted for same-sex peers from those for parents. A positive score indicated a predicted preference for help from parents over peers, whereas a negative one indicated a predicted preference for help from peers over parents.

Results

An analysis of variance (ANOVA) was conducted on the final scores with sex and age level as the independent variables. Results showed a significant effect of sex, $F(1, 186) = 5.96, p < .02$, but no effect of age level, $F(3, 186) = 1.78, n.s.$, nor Sex X Age interaction, $F(3, 186) = 1.19, n.s.$ Across all ages, participants predicted males ($M = -3.02, SD = 6.91, n = 94$) would solicit more help from same-sex peers relative to parents than females ($M = -0.79, SD = 6.03, n = 100$) would. Table 2 displays the results by age level (see Table 2).

Table 2: Mean Difference in Predicted Desire for Help from Parents relative to Same-Sex Peers for Males and Females at four Age Levels in Study 1

Age level	Males		Females	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
Children	-1.60	(7.16)	-1.00	(6.39)
Early adolescents	-1.52	(6.41)	-0.88	(5.20)
Older adolescents	-6.00	(6.30)	-1.41	(6.44)
Adults	-3.05	(7.39)	0.27	(6.60)

Note. Negative numbers indicate preference for help from peers.

Study 2

Introduction

Study 1 confirmed the hypothesis that males would solicit more help than females from same-sex peers relative to parents. What remains unexplained is what kind of benefit males derive more from same-sex peers relative to parents. The goal of the second study therefore was to examine which benefits males obtain more than females from same-sex peers relative to parents.

Three categories of fundamental needs that parents and peers could help individuals satisfy were identified: physical needs, socioemotional needs, and acquisition of societal skills. Meeting physical needs is essential to survival and hence should be most important to parents whose goal is to keep their children alive (Campbell, 1999). Socioemotional needs also strongly influence an individual's functioning, though they are less relevant to

an individual's immediate survival and may exact a lower cost from those helping an individual to satisfy them (Stewart-Williams, 2007). Acquisition of societal skills is necessary for an individual to participate successfully in the local culture.

Parents almost certainly satisfy physical needs more than peers do. Because providing food, clothing, shelter, and medical care inflict large costs, it is unlikely that either males' or females' same-sex peers will play a large role in satisfying these needs (e.g., Stewart-Williams, 2007). Parents likely also satisfy socioemotional needs of younger children, whereas peers play more of a role with increasing age. Because females traditionally focus on these types of needs and female peers' relationships are distinguished by their emotional expressiveness, intimacy, and vulnerability, (Aries, 1996; Bakan, 1966; Benenson, 1996; Buhrmester and Prager, 1995; Verkuyten and Masson, 1996; Winstead and Griffin, 2001), relative to parents, the same-sex peers of older females would be expected to contribute more than those of males to satisfying socioemotional needs. At the same time, given the greater amount of time that males compared with females spend with same-sex peers (Belle, 1989; Benenson et al., 1998; Bryant, 1985; Huston and Carpenter, 1985; Huston et al., 1986; Tietjen, 1982; Wenger, 1989; Whiting and Edwards, 1988), it may be that unrelated same-sex peers do satisfy males' socioemotional needs as much or more than females' using other means. Thus, no prediction was made about sex differences in the role of same-sex peers versus parents in satisfying socioemotional needs.

Finally, given the frequent characterization of males as more agentic, instrumental and achievement-oriented than females (Bakan, 1966; Barry et al., 1957; Parsons et al., 1953) and of males' peer relationships as more task-oriented than those of females' (Aries, 1996; Bakan, 1966; Parsons et al., 1953; Tiger, 1969) and more distant from families (Belle, 1989; Benenson et al., 1998; Bryant, 1985; Huston and Carpenter, 1985; Huston et al., 1986; Tietjen, 1982; Whiting and Edwards, 1988), it was hypothesized that the same-sex peers of males would provide more benefits with acquiring societal skills than the same-sex peers of females.

For the second study, only individuals in late adolescence were included. Although the interaction between sex and age level was not significant in Study 1, the benefits of same-sex peers over parents increased with age, peaking in absolute magnitude in late adolescence, although the relative magnitude of the sex difference continued to increase into adulthood. It is during late adolescence however that individuals in Western societies begin marrying, forming their own families, developing working skills, and for males, joining the military. Thus, it would be expected that if same-sex peers provide greater benefits than families to males compared with females, this sex difference should be apparent by late adolescence.

Materials and Methods

Participants

Fifty students (25 males and 25 females) from a local college in Montreal, Canada who lived with their parents and were between 18-22 years of age were recruited for participation. Over 95% of the students were Caucasian and from lower to middle socioeconomic status (SES) backgrounds. None had children. Each student was approached individually, asked to complete a brief questionnaire about social benefits, and offered a candy bar in return.

Procedure

The instructions specified that the researchers were interested in the extent to which each participant believed that they obtained real benefits from their parents and same-sex peers over the past year. Peers were defined as unrelated, familiar individuals of the same sex who were within five years of the participant's age. Participants were instructed not to assume that they received any benefits from either parents or peers in the past year, as others (such as siblings, more distant relatives, or romantic partners) may have provided these benefits instead. Participants also were instructed not to respond to any measures concerning benefits that did not apply to them. For example, help with paid work did not apply if they did not work, or help with a serious medical condition did not apply if they had not had one in the past year. If participants believed they had received benefits however, then they were to consider the individual within each category (parents and peers) who had helped them the most in the past year, and respond to the measures while thinking about that individual.

The questionnaire asked participants to consider how much their parents and their same-sex peers helped them in the past year with 3 types of needs: physical needs, socioemotional needs, and acquisition of societal skills. These needs were based on the need for survival (Cambpell, 1999), as well as for communion (socioemotional needs) and for agency and status in society (Bakan, 1966).

For physical needs, four measures assessed how much benefit parents and peers provided in satisfying the individual's needs for food, clothing, a residence, and care during a serious medical illness. The measures were as follows: "How beneficial was each of these people in providing you with food (such as giving you food or money to purchase food or buying you food or preparing food for you)?" "How beneficial was each of these people in providing you with clothing (such as buying clothes for you or giving you money to purchase clothing or buying or repairing or making clothing for you or providing instruction in how to do so)?" "How beneficial was each of these people in providing you with a residence (such as letting you stay in their house, giving you money to pay for a residence, or providing aid with repairs or renovations of a residence)?" "How beneficial was each of these people in providing care to you when you endured a serious medical condition requiring prolonged recovery time, major care, or resulting in a major disability? (Care consists of helping to satisfy your basic needs for survival.)"

After each measure was presented, participants were asked to indicate how much benefit their mother/father provided, then on a separate scale how much benefit their same-sex peer(s) provided. All scales ranged from 1 = *No Benefit* to 5 = *Large Benefit*. For each participant, the number of measures on which same-sex peers provided more benefits than parents was counted, then divided by the total number of measures to which the participant responded. This generated a percentage of measures of physical needs in which same-sex peers provided more benefits than parents. No participant responded to fewer than three of the four measures of physical needs.

For socioemotional needs, five measures assessed how much benefit parents and peers provided to the individual during recovery from a serious emotional upheaval, in helping the individual to maintain a positive emotional state, in providing companionship to the individual to prevent loneliness, in ensuring pleasurable activities for the individual, and in celebrating important events in the individual's life. The measures stated "How

beneficial was each of these people in providing care to you when you suffered a serious emotional upheaval (such as the death of an important figure in your life, major move, loss of a job, or other dramatic negative change in life circumstances)?” “How beneficial was each of these people in providing you with maintenance of a positive emotional state (such as money or encouragement to take classes or seek professional advice, insistence that you engage in activities to alleviate your negative emotional states, or identification of and assistance in carrying out positive steps that you could take)?” “How beneficial was each of these people in providing you with companionship to prevent loneliness (such as being there to talk, to keep you company, or to accompany you to a difficult situation like a medical appointment or funeral)?” “How beneficial was each of these people in providing you with pleasurable activities (such as money for vacations, meals, films, games, sports, or other entertainment or fun activities, or sharing those activities that would be less pleasurable without another person’s company)?” “How beneficial was each of these people in celebrating your life with you (such as by providing money for or sharing with you important events in your life- your birthday, graduation, engagement, marriage, birth of a child, special accomplishment)?”

As before, following each measure, participants were asked to indicate how much benefit their mother/father provided, then how much benefit their same-sex peers provided using separate 5-point scales. Again, for each participant, the number of measures on which same-sex peers provided more benefits than parents was counted, then divided by the total number of measures to which the participant responded, producing a percentage of measures of socioemotional needs in which same-sex peers provided more benefits than parents. No participant responded to fewer than four of the five measures of socioemotional needs.

For acquisition of societal skills, five measures assessed how much benefit parents and peers provided with the individual’s education, paid work, making professional connections, training for a serious talent or interest, and acquiring important skills. The measures were as follows: “How beneficial was each of these people in providing you with educational assistance (such as money for tuition or technology supplies, tutoring or help with a class, use of their technology or supplies, or negotiation with educators on your behalf)?” “How beneficial was each of these people in providing you with assistance with paid work (such as completing work for you, substituting for you, or training you)?” “How beneficial was each of these people in helping you to make professional connections (such as networking, helping you find a job, or introducing you to powerful people)?” “How beneficial was each of these people in providing you with training for a serious talent/interest of yours such as athletic, musical, artistic, hobby? (Training could consist of providing lessons, explicit modeling, or serving as a practice partner).” “How beneficial was each of these people in providing you with you important skills (such as vocational skills relating to obtaining a job, negotiation skills to attain a higher salary- either directly through training you or by being a role model you could learn from)?”

Again, after each measure, participants indicated how much benefit their mother/father provided, then how much benefit their same-sex peers provided using the same scales. For each participant, the number of measures on which same-sex peers provided more benefits than parents was counted, then divided by the total number of measures to which the participant responded, producing the percentage of measures of acquisition of societal skills in which same-sex peers provided more benefits than parents.

Same-Sex Peers

Table 3: Number of Males and Females who received Greater Benefits from Same-Sex Peers than Parents out of Total Number who Responded to each Measure

Physical Needs			Socioemotional Needs			Acquisition of Societal Skills		
Measure	Males	Females	Measure	Males	Females	Measure	Males	Females
Food	0/25 (0%)	0/25 (0%)	Emotional upheaval	10/21 (48%)	5/25 (20%)	Education	6/24 (25%)	3/25 (12%)
Clothing	1/24 (4%)	0/25 (0%)	Positive emotional state	9/25 (36%)	6/24 (25%)	Paid work	11/23 (48%)	5/18 (28%)
Residence	0/25 (0%)	1/24 (4%)	Companionship	15/25 (60%)	10/25 (40%)	Professional connections	9/25 (36%)	5/24 (21%)
Medical care	0/18 (0%)	1/19 (5%)	Pleasurable activities	12/25 (48%)	7/25 (28%)	Talent or interest	13/23 (57%)	5/19 (26%)
			Life celebrations	3/24 (13%)	2/25 (8%)	Skills	2/23 (9%)	1/23 (4%)

Two females responded to only three of the five measures. The remainder of the participants responded to at least four of the five measures of acquisition of societal skills. Table 3 displays the number of percentage of males and females who responded to each measure within each type of need (see Table 3).

Results

A repeated measures ANOVA was calculated on mean percentage of measures within each category of need in which participants received greater benefits from same-sex peers than parents with type of need (physical, socioemotional, and acquisition of societal skills) as the repeated factor, and sex as the independent variable. The effect of type of need, $F(2, 96) = 34.50, p < .001$, sex, $F(1, 48) = 5.96, p < .02$, and Type of need X Sex interaction, $F(2, 96) = 3.24, p < .05$, all attained significance. Table 4 displays the means (see Table 4).

Table 4: Mean Percentage of Measures within each Type of Need in which Same-Sex Peers Provided more Benefits than Parents for Male and Female Young Adults in Study 2.

Type of Need	Males		Females	
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)
Physical needs	0.01	(0.05)	0.02	(0.10)
Socioemotional needs	0.41	(0.28)	0.25	(0.28)
Societal skills	0.34	(0.26)	0.17	(0.23)

Across the three types of needs, the mean percentage of needs satisfied by same-sex peers more than parents was significantly greater for males ($M = .25, SD = .15$) than females ($M = .15, SD = .15$). Tukey's test, $p < .05$, further indicated that compared to parents, same-sex peers satisfied a significantly higher percentage of socioemotional needs ($M = .33, SD = .29$) and help with acquisition of societal skills ($M = .25, SD = .26$) than physical needs ($M = .02, SD = .08$), the latter being satisfied almost exclusively by parents. The percentage of peers that satisfied socioemotional needs and acquisition of societal skills did not differ significantly. Finally, Tukey's test demonstrated that compared with females, males obtained significantly more benefits from same-sex peers relative to parents in satisfying socioemotional needs and in acquiring societal skills, but not in fulfilling physical needs.

General Discussion

Results from Study 1 confirmed the hypothesis that compared with females, at four age levels males predicted greater benefits from same-sex peers relative to parents. Study 2 specified that young adult males received more help than females of the same age from same-sex peers relative to parents in satisfying socioemotional needs and in acquiring societal skills. Although it was predicted that same-sex peers relative to parents would be more valuable in the acquisition of societal skills to males than females, surprisingly males also reported that same-sex peers fulfilled more socioemotional needs than females did. This finding appears to contradict consistent research demonstrating that females' peer relationships are distinguished by their emotional expressiveness, intimacy, and

vulnerability (Aries, 1996; Bakan, 1966; Benenson, 1996; Buhrmester and Prager, 1995; Verkuyten and Masson, 1996; Winstead and Griffin, 2001), characteristics which should be particularly well-suited to the fulfillment of socioemotional needs. If females' relationships with parents also are distinguished by these qualities however, then females' same-sex peers simply resemble their parents in providing these benefits with parents providing significantly more benefits than same-sex peers to females than males. Consistent with this interpretation, research suggests that both mothers and fathers spend more time with daughters than sons discussing emotions, particularly those that concern intimacy and vulnerability (Reese, Haden, and Fivush, 1996). Nonetheless, researchers may have underestimated males' same-sex peers' capacities to satisfy socioemotional needs. Research frequently measures socioemotional support by relying on verbal revelations of personal feelings, which may not assess accurately other means of satisfying socioemotional needs. The current study did not specify the means by which socioemotional needs were satisfied, thereby permitting individuals to focus on the outcome rather than the means. Further research is necessary to specify the ways in which unrelated males satisfy one another's socioemotional needs.

Past research on altruism has focused more on the benefits provided by kin as opposed to genetically unrelated individuals. Nonetheless, mathematical models demonstrate that cooperation between non-kin provides benefits through a number of mechanisms (Nowak, 2006). Research with mammals has provided rich information on fundamental variables that likely impact degree of cooperation, such as an individual's age, sex, and social structure (de Waal and Tyack, 2003; Harcourt and de Waal, 1992). Further, humans' pattern of social structure indicates that males form larger networks with same-sex peers than females do (Benenson, 1990; Benenson et al., 1997; Gabriel and Gardner, 1999; Savin-Williams, 1980; Seeley et al., 2003). Suggestive developmental research with humans also indicates that daughters acquire more skills than sons from mothers, whereas sons spend more time with same-sex peers. The present research demonstrated explicitly that in the current sample males of all ages, though particularly after puberty, reported greater benefits than females did from same-sex peers relative to parents.

Should further studies with diverse populations using additional methods replicate the current results, this would suggest that males should be relatively more predisposed than females to behave altruistically towards same-sex peers relative to parents. Widely accepted theoretical claims that females value relationships more than males do (Chodorow, 1978; Gilligan, 1982) therefore would have to be tempered by the relative weight that individuals of each sex place on differing forms of relationships. While it is possible that females do value both parents and same-sex peers more than males value either, it is more plausible that in certain domains males value same-sex peers compared to parents relatively more highly than females do. Research with five samples of German adults from early adulthood through old age showed that women more than men reported receiving a larger percentage of physical and socioemotional support from kin as opposed to non-kin (Neyer and Lang, 2003). In late adolescence and continuing into early adulthood, in many societies unrelated males sacrifice their lives for one another to defend their own or invade other communities (Wrangham, 1999). Further, from early adulthood to old age, unrelated males form cooperative group structures to accomplish a variety of community goals (Tiger, 1969). Local conditions, such as the means by which community members satisfy needs for survival, resource availability, marital patterns, and presence of

hostile neighbors, therefore likely influence the relative value of relationships with parents versus same-sex peers and subsequent sex-role training in the community (e.g., Barry et al., 1957; Whiting and Whiting, 1975). Studies from across diverse cultures in general indicate however that from a young age males may be more likely than females to rely on same-sex peers to provide skills necessary for success in society and for interacting with one another, whereas females may be more able to acquire these skills from parents, particularly female kin. More research on the types of needs important to males and females will further inform understanding of sex differences in relationships with same-sex peers versus parents.

The current study provided evidence that compared with females, males report receiving greater benefits from same-sex peers relative to parents, and the benefit appears to take the form of satisfying socioemotional needs and the acquisition of local societal skills. Further research is required to replicate the current findings across diverse cultures with more naturalistic methods and with individuals from a variety of age levels.

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