THE
GERONTOLOGICAL
SOCIETY OF AMERICA®

OXFORD

Research Article

Making Connections: The Legacy of an Intergenerational Program

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Abstract

Purpose of the Study: On the face of the shrinking opportunities for children and older adults to routinely interact with one another—sometimes the result of adolescent geographies, age-segregated and gated communities, families' geographical mobility—many communities have introduced intergenerational programs within the school curriculum. For more than a decade one Massachusetts community has maintained an intergenerational program that brings fourth grade students together with older adults. The question is, does students' involvement in an intergenerational program lessened ageist beliefs 5–9 years later.
Design and Methods: A quasi-experimental research design examined the "images of aging" held by 944 students who grew up in neighboring towns and attend a regional high school. Participants completed brief questionnaire.
Results: Separate regression analyses of positive and negative images of aging—controlling for students' frequency and self-reported quality of interaction with older adults, ethnicity, age, and gender—reveal a town difference in students' positive, but not negative, images of aging.
Implications: What is certain is that the high school students from one community with ongoing intergenerational programming hold a more positive image of older adults. Further research is needed to parse out exactly how short- and long-term legacy effects arise when young students have an opportunity to interact closely with older adults who are not their grandparents or neighbors.

Key words: Ageism, Intergenerational program, Person perception schema

Age-based prejudices permeate our cultural expectations of older adults, and children are not exempt from championing ageist attitudes and feelings. As Butler described it, ageism is an embodied "deep seated uneasiness on the part of the young and middle aged—a personal revulsion to and distaste for growing old…" (Butler, 1969, p. 243).

Consistent with our nation's stealth ageism, negative portrayals of older adults and aging often appear in illustrations of children's books and movies (cf., Henneberg, 2010; Robinson, Callister, Magoffin, & Moore, 2007), and children establish a distinctive visual representation of both "old people" and aging at very early stages in development

(Gilbert & Ricketts, 2008). However, by the time they are in middle school, preteenagers begin to develop more nuanced thinking about what it means to be "old" (Lichtenstein et al., 2005), probably as a result of more diverse intergenerational contact than solely with grandparents and their developmental move from "concrete" toward more "abstract" thinking (Fair & Delaplane, 2015; Kuhn, 2009; Montepare & Zebrowitz, 2002). In this article we examine high school students' images of aging and weigh if their involvement as fourth graders in an intergenerational program lessened ageist beliefs 5 to 9 years later.

The scant evidence available reveals that in the everyday lives of most of the Millennial generation adolescents, older people are largely invisible and exist on the margins of their home life, recreation activities, and generational identity. It is common for community practices to age-segregate the generations socially and recreationally (Hagestad & Uhlenberg, 2005, 2006; Pain & Hopkins, 2010). There are 55-and-over residential communities that explicitly exclude children. Similarly, adolescent geographies—schools and school buses, recreational favorite places, or Facebook and Twitter networks—become a "mass of small islands" (Aries, 1978) organized separately from the spaces of older adults (Pain & Hopkins, 2010; Vanderbeck, 2007; Weller, 2006). These age ghettos impede intergenerational contact and can be a principal reason why young people generally maintain ageist attitudes. Here is one example: Levy, Chung, Bedford, and Navrazhina (2014) examined the 84 Facebook groups that even mentioned older people within the group's description, and all but one of these groups espoused age prejudices.

Grandparents are the most familiar older people in children's lives, particularly maternal grandmothers (Aldous, 1995; Ivey, 2001). Yet, face-to-face interaction between the grandchild seen most often and a grandparent is, on average, about once a month (Dunifon & Bajracharya, 2012; Reitzes & Mutran, 2004). The frequency of contact diminishes the further away the grandparent lives and as the age gap between the generations widens (Hurme, Westerback, & Quadrello, 2010; Uhlenberg & Hammill, 1998). Grandparent–grandchild interaction is also governed by the relational bridge between the grandparent and parents of the grandchild (Barnett, Scaramella, Neppl, Ontai, & Conger, 2010; Luescher & Pillemer, 1998; Mueller & Elder, 2003; Uhlenberg & Hammill, 1998). By the time grandchildren enter adolescence, most grandparents are in their late 60s or 70s (cf., Bengtson, Rosenthal, & Burton, 1990). As both grandchildren and grandparents age, relational closeness is challenged. Grandchildren invest themselves in peer networks and older grandparents typically transition toward less personal relationships with the grandchildren (Silverstein & Marenco, 2001).

Even when the quality of the grandchild–grandparent relationship is positive, there does not appear to be much self-disclosure or mutual understanding (Harwood, Hewstone, Paolini, & Voci, 2005; Triadó, Villar, Solé, Osuna, & Pinazo, 2005). There is evidence that young people's ambivalence with involving themselves with grandparents has become as normative as long-distance grandparenting: Despite the technological capability of "friending" a grandparent in social media, texting, playing *Scrabble* online, and/or exchanging Skype kisses, grandchildren can choose to not frequently interact with or disclose much to grandparents, particularly older grandparents (Bangerter & Waldron, 2014; Fingerman, Hay, & Birdett, 2004). Strom and Strom (2015) contend that the methods of communication preferred by preteenagers and adolescents, such as texting, tweeting, and sending pictures, have resulted in more age-segregated interaction than intergenerational. When grandchildren talk with grandparents, Harwood (2000) noted "mundane information" is often exchanged, and more than half of the college-aged students in his sample talked with their grandparents no more than a few times a year, whether the method of communication was telephone, face-to-face, or e-mail. As much as many grandparents may wish to "be there" they know the maxim "do not interfere" (Mason, May, & Clarke, 2007).

In a synthesis of research literature, Gilbert and Ricketts (2008) summarized how adolescents' images of aging and the attitudes they maintain toward older adults are shaped by their interaction with older adults, then by their racial/ethnic heritage and gender. The case has also been made that it is the quality of, not the frequency of, intergenerational contact that is associated with young people developing non-prejudicial attitudes toward older people (Schwartz & Simmons, 2001; Tam, Hewstone, Harwood, Voci, & Kenworthy, 2006). Children and preteenagers with close relationships with grandparents—even when living at a distance—hold more positive attitudes toward aging and older people in general than age-peers who have ambivalent or weak ties to grandparents (McGuinn & Mosher-Ashley, 2002; Tam et al., 2006). Similarly, children and adolescents who are given an opportunity to work with an older non-relative on a joint project develop a sense of familiarity with this older person and, in turn, report more favorable attitudes toward older men and women in general than children merely exposed to an older adult in a community or family setting (cf., Bousfield & Hutchison, 2010).

To counteract the dearth of young people's opportunities for interaction with older adults, different forms of community-based intergenerational programs have emerged. The programs share Allport's (1954) contact premise and have been implemented in settings such as schools and colleges, volunteer organizations, community groups, and senior centers (cf., Bales, Eklund, & Siffin,

2000; Carson, Kobayashi, & Kuenhe, 2011; Goodman, 2013; Powers, Gray, & Garver, 2013). Contact theory suggests that under the right circumstances when younger people interact with older adults, they will be less likely to maintain ageist stereotypes. Effectively reducing prejudices depends on the quality of contact—whether it is voluntary, occurs in a venue in which the differing age group members share equal status and engage in gratifying collaborative interaction, and includes self-disclosure (cf., Allport, 1954; Pettigrew & Tropp, 2006, 2008). Studies assessing the efficacy of intergenerational programs lend support to the argument that planned, gratifying intergenerational contact demystifies what later life and "being old" mean to preteenagers and adolescents and brings about more heterogeneous, realistic views toward older people in general (Jarrott, 2011).

But most studies evaluating intergenerational programs trace the immediate effect of a program, and the sample sizes are typically quite small. With very few exceptions (e.g., Femia, Zarit, Blair, Jarrott, & Bruno, 2007) the studies were designed as short-term, pre- and post-test comparisons of participants' attitudes toward the other generation. One notable outlier: Aday, Sims, McDuffie, and Evans (1996) conducted a 5-year follow-up of a small sample (*N* = 24) of upper-middle class fourth grade students from one class in an private elementary school in Chattanooga, *Tennessee*, who had been paired with an older adult volunteer and shared a range of classroom activities over the 9-month school year. There was a matched control group (*N* = 25) from another fourth grade class that was also followed. The ninth graders who participated in the Intergenerational Partners Project recalled their experience as memorable, held more positive attitudes toward older adults than the control group, and had no significant decline in their acquired positive attitudes. However noteworthy, the finding of the legacy of children's experiences within an intergenerational program on their attitudes as teenagers toward older adults and aging, Aday and colleagues (1996) were not able to rule out if other forms of intergenerational interaction during the 5-year interval might have determined the teens' constant positive attitudes.

No study that we could locate in searches of *AgeLine*, *Google Scholar*, and *PsychInfo* has used a large sample and multivariate analysis to assess the possible legacy of children's participation in an intergenerational program. The purpose of the present study is to investigate the extent to which high school students' images of aging might reflect their earlier involvement as fourth graders in an intergenerational program in analyses controlling for several other expected determinants of the high school students' images of aging.

Two Towns, One Intergenerational Program

Lincoln and Sudbury, Massachusetts, are characteristic of many suburban communities near Boston. Most housing is single-family homes. According to realtor.com, the majority (52% and 61%) of each town's population are long-term residents, defined as having lived at the same address for 5 or more years. Nearly 90% of residents in both towns in 2013 who were aged above 25 were married, and 43% and 52% of the households, respectively, had children at home. Esri estimates for 2014 (www.esri.com) indicate that the average age (51.0 and 44.1, respectively) was older than the average for the state (39.6) or nation (37.6), signaling the density of both empty nester couples and couples with children. Close to 70% of residents in each town aged above 25 have a 4-year college degree; nearly 40% have a graduate/professional degree. The racial/ethnic composition of the two towns is also similar—predominantly white (83% and 89%, respectively). These demographic data reveal two upper-middle class towns that are very comparable to one another, despite their sociodemographic differences from national averages or other Massachusetts towns.

One differentiating feature is that Sudbury has a long-standing intergenerational program for fourth graders. Bridges Growing Together has existed for more than 20 years, and since 2000 it has been integrated into the fourth grade curriculum in Sudbury Public Schools (Weaver, 2014) and involved 300–325 students annually. More recently, it also has been implemented in some private schools and community centers, mostly within Massachusetts. Since 2000, there have been 129 older adults (age range 62–93) trained to serve as the classroom volunteers; the 2:1 sex ratio of more women volunteers has remained relatively constant; and all volunteers had careers (see Weaver, 2014, and www.bridgestogether.org for more details).

In Sudbury, the older adult volunteers join the students in the four elementary schools to participate in 6-hr-long, consecutive, weekly sessions that are facilitated by the classroom teachers. The teachers conduct an introductory session to prepare the students for the intergenerational program, and there is a reunion shortly after the last session held at the town's senior center. The classroom sessions and reunion exemplify Allport's (1954) "contact hypothesis" because they are designed to promote meaningful interaction with older people and positive attitudes about aging.

In preparation for each session, there is weekly homework that requires each student to interview an older adult in her/his life, typically a grandparent or another relative. Homework and in-class session themes include "schools then and now," "ethnicities, heirlooms, and traditions," "learning from each other," and "how old is old?". Each session is divided into four parts. It begins with a mini-lesson

conducted by the teacher on the theme of the day, followed by a storytelling discussion within small breakout groups of five students and two older adults about what the students learned from their homework interview and the ways in which the older adults' lives were similar. The lengthy part of the session includes a project in which everyone participates in the small groups, and the session concludes with a discussion on the day's group work led by the teacher. The students meet the same volunteers throughout the program. The homework and in-class programming foster dialogue between people of different generations about topics that are not often discussed. As one fourth grader commented (Weaver, 2014, p. 200):

> "I think it's good to be able to talk about something like death or a celebration or growing up…I know I learned a great deal. [Kids] can learn about what was happening around the time the seniors were my age…They've experienced different parts of history. (Emma)"

From their focused conversations children discover meaningful aspects of a grandparent's life, and they spend class time with stereotype-busting models of "old people" who may run marathons or divulge stories about their experiences with the normative sexism of the 1950s.

Other communities' intergenerational programs have demonstrated that students who participate typically develop more positive images of older people and sometimes less stereotypical thinking about "being old" (Jarrott, 2011). The unanswered question is whether young people's participation in school-based intergenerational programming has any long-term effect. Based on the evidence in studies assessing the short-term salience of participation in an intergenerational program, we expected the high school students who participated in the intergenerational program in fourth grade to hold more positive images of older adults (Hypothesis 1) and less negative, stereotypical images of aging (Hypothesis 2). Furthermore, we followed up on previous research (Gilbert & Ricketts, 2008; Meshel & McGlynn, 2004) that suggested age, gender, and race/ethnicity might be the covariates of students' images of aging.

Method

Design and Participants
In this study, hierarchical linear regression analyses determined whether or not having participated in the intergenerational program was a predictor of the high school students' positive and negative images of aging, beyond the variance accounted for by the teenagers' recent contact with older adults or their age, gender, and race/ethnicity. The study employed a quasi-experimental research design comparing the high school students who had participated

in one town's intergenerational program (Sudbury) to the students in the neighboring town (Lincoln). It was reviewed and approved by the first author's Institutional Review Board and vetted by the Lincoln–Sudbury Superintendent. Participants completed an anonymous two-page questionnaire that took no more than 5 minutes.

The entire high school student population of Lincoln-Sudbury Regional High School in spring 2013 was eligible to participate. However, the actual pool of participants was limited to the students attending classes during the one class period that the questionnaire was distributed by all classroom teachers. Students who had an open period or were engaged in an off-campus project were eliminated from the pool. As well, every student was given the opportunity to opt-out of participation. The cover letter attached to the questionnaire emphasized that participation was strictly the student's choice. Of the 1,600 students enrolled, 1,242 questionnaires were returned to the teachers and made available for the analysis. Twelve questionnaires were later discarded either because they were unfinished or a student completed the Likert scales using a lightening bolt pattern of responses or a single response option for all items (e.g., circling only the left hand response option).

To develop comparable groups, the study was designed to assess students who had attended a Sudbury elementary school in fourth grade and their comparison group, the students who had grown up and attended elementary school in the neighboring town, Lincoln. Thus students who reported that they had attended any other school for fourth grade were not carried forward. Some of these students had recently moved into the Lincoln–Sudbury district from other states or communities; some were students of color who commuted daily from Boston; and some lived in Massachusetts communities that funded "school choice," where parents can send their children to schools outside their own town and the sending school district pays tuition to the receiving district. This exclusion criterion reduced the sample to 1,026.

Chi-square tests and *t*-tests for homogeneity indicated that students who had attended Lincoln and Sudbury elementary schools ($N = 1026$) did not differ in terms of gender, age, or class year from the 177 students who were not long-term residents of the two communities. Not unexpected, they differed ethnically ($\chi^2 = 64.01$, $df = 5$, $p < .001$). There were more white and fewer African American and Asian American students in the Lincoln–Sudbury group.

Measures
Levy, Kasl, and Gill's (2004) 18-item Images of Aging Scale (IAS) was used to assess the dependent variables—students' positive image of older adults and negative images

of aging. The measure charts "person perception schemas" that reflect cultural beliefs yet are individuals' own cognitive images (Hummert, 1999, p. 177; Levy, Sade, May, & Caracciolo, 2006). It yields separate measures for the positive and negative images. Participants rate words or phrases such as "healthy," "senile," or "full of life" on a 7-point Likert-type scale. The instructions ask the participant to "circle the number from 0 to 6 that best shows how well the word matches *your* image or picture of older people in general, with 0 = "does not match my image at all" and 6 = "completely matches my image." Levy and colleagues (2004) reported Cronbach α coefficients of .84 and .82 for the positive and negative scales, respectively. In this study, the α coefficients were .81 and .82 for the positive and negative scales, respectively, and the bivariate correlation, $r = -.48$, revealed that the scales were inversely related.

Participants' background information—class year, age, gender, racial/ethnic background, and the name of the school attended in fourth grade—was assessed at the start of the questionnaire. The elementary school named was used to construct the variable distinguishing who attended Sudbury schools: Lincoln = 0, Sudbury = 1. Responses to racial/ethnic background were coded for analysis into a three categorical dummy variables—white European heritage, African American, and Asian were developed as variables, each coded as 1, with students who self-identified as bi- or multiracial, Latino, or "other" (e.g., Haitian or Persian) selected as the reference group and coded 0. Age was measured as a continuous variable, and gender was coded female = 1, male = 0.

Four questions assessed contact with older adults. A single item measured how often the student had contact with "men and women older than 65" on a 7-point scale ranging from 0 = "almost never," 3 = "about once a month" to 6 = "more than once a week." An open-ended question followed asking the student to identify who were their contacts. Responses were coded into categorical dummy variables to identify the primary contacts as grandparent(s) and other family members, with all other sources of primary contact (e.g., tutors, neighbors, members of a religious congregation, workplace colleagues, or customers) serving as the reference group. Quality of contact was assessed with a two separate items. The first asked participants "what best describes the quality of your contract with those older men and men," and was measured on a 5-point Likert scale ranging from "very unpleasant" to "very enjoyable." Finally, students rated their contact with the older adults in terms of its didactic or instructive value with a single item. On the 7-point scale ranging from "does not match my image at all" to "completely matches my image" was the phrase "these older adults have a lot to teach."

Data Analysis

The positive image of older adults scale showed little evidence of deviation from a normal distribution, skewness = −0.37, *SE* = 0.08; kurtosis = 1.04, *SE* = 0.15. Similarly, the measure of negative images of aging showed no evidence of skewness, 0.05, *SE* = 0.08, and only slight evidence of kurtosis, 0.28, *SE* = 0.15. Both meet the assumptions of linear regression analysis. A pair of hierarchical linear regression analyses examined whether or not having participated in the intergenerational program was a predictor of the high school students' positive and negative images of aging. Using the stepwise procedure, demographic variables, including age, gender and ethnicity, and the measures of contact with older adults (frequency and quality of contact, two categories of who was the primary contact) were collective entered into each regression equation. The second step entered whether the student attended a Sudbury elementary school and participated in the intergenerational programming.

Findings

Demographics

Overall, the sample is predominantly white (81.7%) and includes slightly more bi- or multiracial students (5.8%) than students identifying as Asian (5.4%), African American (3.2%), or Latino (2.5%). The students are almost equally involved in their first through fourth years of high school (25.0%, 26.5%, 27.3%, 21.2%, respectively), ranged in age from 13 to 19, on average age 16.1 (*SD* = 1.15) years, and are represented by nearly as many young men (48.0%) as women (52.0%). Tests for homogeneity comparing students from Lincoln to the students from Sudbury indicated that there were slightly more African American, Asian American, and biracial students from Lincoln, $\chi^2 = 29.09$, $df = 5$, $p < .001$. The χ^2 or *t*-test comparisons indicated that the students from the two towns did not differ in terms of the source of their age, gender, or class year representation.

Intergenerational Experiences

Bivariate correlations revealed that the frequency of contact and perceived enjoyment of their contact with older adults were correlated, $r = .19$, $p < .001$. Frequency of contact was also correlated with students' evaluation that their contact was instructive, $r = .15$, $p < .001$. Table 1 presents descriptive statistics on the high school students' frequency of contact with "men and women older than 65," the older adults they primarily interacted with, and their evaluation of the quality of the interaction. Students' principal intergenerational contact was with their grandparents and other relatives. Nearly one-quarter of the students

(28.3%) reported that their main contacts did not involve their family.

Collapsing the responses for students who identified their primary older adult contacts into family or nonfamily, χ^2 or t-test comparisons indicated that students reporting nonfamily did not differ in terms of race/ethnicity or their hometown, yet they were more often boys, χ^2 (1) = 7.61, $p < .01$, and a bit older, $M = 16.37$ ($SD = 1.05$) and 16.02 ($SD = 1.16$), respectively, t (946) = 4.37, $p < .001$, than students who indicated family members were their primary older adult contacts. When family members were the primary contacts, these students had less frequent interaction than the students who reported nonfamily as their primary older adult contacts, $M = 3.76$ ($SD = 1.55$) and 4.48 ($SD = 1.64$), respectively, t (959) = 6.36, $p < 0.001$, yet reported more enjoyment from the interaction,

$M = 3.94$ ($SD = 0.90$) and 3.81 ($SD = 0.91$), respectively, t (949) = 2.04, $p < .05$.

Students from the two towns differ neither in terms of the source of their primary older adult contacts nor their assessment of the frequency, enjoyment, and didactic value of their relations. These null findings suggest that students' earlier participation in the intergenerational program does not predict distinctive patterns of intergenerational contact.

Images of Aging

Mean scores on the IASs indicate that the high school students as a group held modestly positive images of older people ($M = 3.73$, $SD = 0.82$, range 0–6) and balked a bit at endorsing negative images of aging ($M = 2.77$, $SD = 0.92$, range 0–6). Tables 2 and 3 provide the results of the hierarchal regression of positive and negative images of aging on having participated in a fourth grade intergenerational learning experience, controlling for all the covariates in the model. Participation was significantly associated with the high school students' positive image of older adults, $\beta = 0.126$, $SE = 0.063$, $beta = 0.055$, $p < .05$ (Hypothesis 1), but not their negative image of aging (Hypothesis 2).

Consistent with the literature (e.g., Barrett & von Rohr, 2008), girls were more likely than boys to hold positive images of older adults, $\beta = 0.092$, $SE = 0.044$, $beta = 0.057$, $p < .05$ (see Table 2), and less likely to maintain negative images of aging, $\beta = -0.121$, $SE = 0.057$, $beta = -0.067$, $p < .05$ (see Table 3). However, somewhat at odds with the expected pattern, younger students held more positive images of older adults, $\beta = -0.040$, $SE = 0.019$,

Table 1. Characteristics of Students' Involvement With Older Adults

Type (range)	N	M (SD)
Frequency of contact (0–6)	1,015	3.88 (1.67)
Primary older adult(s)		
Grandparent(s)	573	(59.4%)
Other relative(s)	119	(12.3)
Workplace	58	(6.0)
Volunteering	45	(4.7)
Teacher(s)	26	(2.7)
Other	144	(14.9)
(Missing)	61	
Enjoyment of contact (1–5)	974	3.89 (0.92)
Instructive, lot to teach (0–6)	965	4.65 (1.36)

Table 2. Summary of the Hierarchal Regression Analysis on Positive Images of Older Adults

	Model 1			Model 2		
	B (SE)	beta	t	B (SE)	beta	t
Age	−.041 (.019)	−.058	2.10*	−.040 (.019)	−.057	2.06*
Gender (female)	.090 (.045)	.056	2.02*	.092 (.044)	.057	2.07*
White	−.097 (.079)	−.045	1.23	−.112 (.079)	−.052	1.42
African American	.084 (.157)	.017	0.54	.096 (.157)	.019	0.61
Asian	−.236 (.123)	−.065	1.92+	−.238 (.123)	−.065	1.94+
Frequency of contact	.022 (.014)	.046	1.60	.024 (.014)	.049	1.70
Grandparent(s)	.123 (.048)	.076	2.54*	.120 (.048)	.074	2.49*
Other relatives(s)	.176 (.069)	.075	2.54*	.175 (.069)	.075	2.53*
Enjoyment of contact	.202 (.026)	.228	7.66***	.202 (.026)	.227	7.65***
Instructive, "lot to teach"	.244 (.018)	.404	13.81***	.244 (.018)	.404	13.84***
Participated in IG program				.126 (.063)	.055	1.99*
	R^2 = .305			R^2 = .308		
	F (10,920) = 40.32			F (11,919) = 37.14		

Note: IG = intergenerational.
+$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Summary of the Hierarchal Regression Analysis on Negative Images of Aging

	Model 1			Model 2		
	B (SE)	*beta*	*t*	*B (SE)*	*beta*	*t*
Age	.099 (.025)	.127	4.01***	.099 (.025)	.126	4.00***
Gender (female)	−.120 (.057)	−.067	2.13*	−.121 (.057)	−.067	2.14*
White	−.001 (.100)	.000	0.01	.006 (.100)	.002	0.06
African American	−.195 (.199)	−.034	0.98	−.200 (.199)	−.035	1.00
Asian	.138 (.156)	.034	0.88	.139 (.156)	.034	0.89
Frequency of contact	−.003 (.018)	−.006	0.17	−.004 (.018)	−.007	0.21
Grandparent(s)	−.012 (.061)	−.006	0.19	−.010 (.061)	−.006	0.17
Other relatives(s)	−.069 (.088)	−.026	0.78	−.068 (.088)	−.026	0.78
Enjoyment of contact	−.214 (.034)	−.215	6.39***	−.214 (.034)	−.215	6.38***
Instructive, "lot to teach"	−.097 (.022)	−.142	4.30***	−.097 (.022)	−.143	4.31***
Participated in IG program				.059 (.080)	.023	0.74
	R^2 = .110			R^2 = .110		
	$F (10,920)$ = 11.34			$F (11,919)$ = 10.35		

Note: IG = intergenerational.

$^+p < .10. *p < .05. **p < .01. ***p < .001.$

beta = −0.057, $p < .05$ see Table 2), whereas negative images of aging were directly associated with age, β = 0.099, *SE* = 0.025, *beta* = 0.126, $p < .001$ (see Table 3). Positive and negative images were very strongly associated with students' assessment of the extent to which their existing intergenerational relations were instructive and enjoyable (see Tables 2 and 3 for details). In addition, positive images of older adults were significantly related to having one's grandparents or other older relatives as primary older adult contacts.

Discussion

The primary goal of the current study was to extend empirical evidence on the efficacy of intergenerational programming. A quasi-experimental research design compared one group of high school students who had participated in a fourth grade intergenerational program 5–9 years earlier to students who had not. As anticipated, the high school students who were from the community that has the intergenerational program held more positive images of older adults (Hypothesis 1). However, involvement in the intergenerational program as fourth graders did not help explain students' negative images of aging (Hypothesis 2). These findings are in line with the body of research that shows meaningful intergenerational contact can increase "perspective taking" and empathy (Batson, Early, & Salvarani, 1997), positively influence the views young people hold about older adults (Pettigrew & Tropp, 2008), yet not lessen young people's negativity about aging or being old (Schwalbach & Kiernan, 2002). The findings

also demonstrate the multidimensionality of people's attitudes toward older adults and aging and that people can maintain both positive and negative views of older adults and being old (Kite, Stockdale, Whitley, & Johnson, 2005; Thompson, 2006).

The expectation was that children's structured contact with older adults would begin to promote perspective taking and greater comfort while amongst older adults. The high school students who participated in the Bridges program as fourth graders had worked with the older adult classroom visitors as well as interviewed a significant older adult, typically a grandparent, about topics that were not common to their everyday conversations. These coordinated opportunities to engage in perspective taking could certainly set in motion the students' continued openness to genuinely interacting with older adults (Batson et al., 1997; Galinsky & Moskowitz, 2000). But such a sequenced process must be examined systematically, determining more clearly the salience of intergenerational programs to gaining comfort with intergenerational relations, to perspective taking, and, in turn, to empathic thinking and ageism reduction. These theorized links are not yet persuasively documented.

Another desirable vein of research is one that would empirically determine what social capital is produced through the intergenerational program. The concept of social capital refers to the "aggregate of social connections" that become identity resources and provide shared norms and values (Bourdieu, 1985). Although not often tied to a social capital framework (cf., Newman & Hatton-Yeo, 2008), an underlying rational for many intergenerational

programs is the opportunity for expanding participants' social connections, in addition to fostering more positive perceptions of "the other." The experiences that likely helped (re)shape the norms of who's out of bounds for friendly relations, even through social media, constitute a type of social capital that Sudbury students may have gained. Little research has explicitly examined the efficacy of intergenerational programs on the creation of meaningful, trusting intergenerational relationships for either generation. Studies are needed to determine if the older adult volunteers and the students report greater social capital a year or two after the intergenerational program concluded. Studies also are needed to identify *which* young people might best profit from early intergenerational programming. Developmental psychologists might investigate to what extent children who have histories of an ambivalent attachment as opposed to secure relations with grandparents experience any less pre- to post-change in their openness to interacting with old(er) people.

One unanticipated pair of findings was younger high school girls endorsed positive images of older adults, while negative views of aging were more common among older boys. Although prior studies yield equivocal findings, the expected pattern was that the older high school students, particularly girls, would have had more opportunities for intergenerational contact and developed less stereotypical views toward older adults and aging (cf., Gilbert & Ricketts, 2008; Meshel & McGlynn, 2004). Perhaps the observed findings reveal more about adolescent girls and boys than prior studies have estimated, once differential experience with intergenerational contact is calibrated. Unlike other studies, our analyses controlled for intergenerational contact differences. Finding that younger high school age girls hold more positive views of older adults than boys and older girls may surface only after knowing who has had enjoyable, didactic relationships with older adults and which older adults are included in adolescents' social worlds. If as McGuinn and Mosher-Ashley (2002) reported, adolescents' close relationship with a grandparent contributes to positive attitudes and lessened fear of older adults, perhaps the younger girls maintained close relations with older family members, whereas the adolescents who are nearing the end of high school work part-time and have more public-place encounters with older adults in poorer health, as well as experience their relations with grandparents as more instrumental, less close, and less likely to mitigate cultural stereotypes of old people and aging.

Observing that older boys held a more negative view about aging seems consistent with Lasher and Faulkender's (1993) report that adult men were more anxious about aging than women. It is inconsistent with McGuinn and Mosher-Ashley's (2002) finding that adolescents' concerns over aging were minimal and neither gendered nor age-specific. And it is contrary to Prior and Sargent-Cox's (2014) observation that undergraduate men had more positive expectations of aging than women following imagined contact with a 75-year old man or woman. Because the age-gender finding reflects a pair of bivariate relationships within a regression equation, perhaps it is less about older boys holding greater negative views of aging and is more about younger girls who have not yet faced the anxiety of their own body aging (Barrett & Robbins, 2008). Future research on what determinants high school age boys' and girls' images of older adults and aging needs to more thoroughly assess if adolescents' involvements with older adults affect their anxieties with bodily and functional aging.

In sum, the evidence is that for the high school students who participated in an intergenerational program compared with students from a neighboring suburban town who did not, positive images of older adults increase, but negativity about aging and being old persist. The study's principal findings must be framed in terms of its limitations. First, the high school sample is large but not diverse—most students are white, suburban-based, and from middle- to upper-middle class families. The findings may not be generalizable to other communities. Second, the participants interacted with their primary older adults—grandparents and other older relatives—less than twice a month, which is statistically "normative" for grandchild–grandparent relations. But this does not represent adolescents whose everyday lives are not embedded in the age ghettos that typify suburban communities or who might regularly interact with healthy older adults. Third, as much as Levy and colleagues' (2004) Images of Aging Scale maps ageist views, it is a single measure and does not fully operationalize the ways that adolescents might uphold or abandon ageist views as a result of their intergenerational experiences. Here are two examples: Not charted were adolescents' propensity to avoid older adults and/or preference that young people and older adults not comingle (cf., Rupp, Vodanovich, & Credé, 2005), nor was age-stereotype embodiment explored (cf., Levy, 2009). Only their cognitive images of older adults and aging were charted. It would be constructive to determine the extent to which adolescents' intergenerational experiences, especially with nonfamilial older adults, affect their social distancing and their own body consciousness and antiaging behavior.

This study is one assessment of an intergenerational program's promising legacy, but adds it to the body of scholarship on the short-term effects of school-based intergenerational programming and there is a wealth of evidence to encourage school districts to support gerontology inclusion and integrate programs like Bridges Together

into curriculum. This program not only engaged the fourth graders in a series of structured exercises with older adult visitors, but it also required the students to regularly interview a significant older adult about matters not often part of a grandparent–grandchild conversation. It is uncertain if the effect of participating in the intergenerational program is attributable to the whole or one of the parts. But, it is certain that preteenagers' attitudes toward older adults were primed to be less ageist. Schools play an important role in developing young people's attitudes and understanding, and they can extend their influence by helping to reduce ageism.

References

Aday, R. H., Sims, C. R., McDuffie, W., & Evans, E. (1996). Changing children's attitudes towards the elderly: The longitudinal effects of an intergenerational partners program. *Journal of Research in Childhood Education*, **10**, 143–151. doi:10.1080/02568549609594897

Aldous, J. (1995). New views of grandparents in intergenerational context. *Journal of Family Issues*, **16**, 104–122.

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Aries, P. (1978). The family and the city. In A. S. Rossi, J. Kagan, & T. Hareven (Eds.), *The family* (pp. 221–236). New York: W. W. Norton.

Bales, S. S., Eklund, S. J., & Siffin, C. F. (2000). Children's perceptions of elders before and after a school-based intergenerational program. *Educational Gerontology*, **26**, 677–689. doi:10.1080/03601270050200662

Bangerter, L. R., & Waldron, V. R. (2014). Turning points in long distance grandparent-grandchild relationships. *Journal of Aging Studies*, **29**, 88–97. doi:10.1016/j.jaging.2014.01.004

Barnett, M. A., Scaramella, L. V., Neppl, T. K., Ontai, L. L., & Conger, R. D. (2010). Intergenerational relationship quality, gender and grandparent involvement. *Family Relations*, **59**, 28–44. doi:10.1111/j.1741-3729.2009.00584.x

Barrett, A. E., & Robbins, C. (2008). The multiple sources of women's aging anxiety and their relationship with psychological distress. *Journal of Aging and Health*, **20**, 32–65. doi:10.1177/0898264307309932

Barrett, A. E., & von Rohr, C. (2008). Gendered perceptions of aging: An examination of college students. *International Journal of Aging & Human Development*, **67**, 359–386. doi:10.2190/AG.67.4.d

Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imaging how you would feel. *Personality and Social Psychology Bulletin*, **23**, 751–758. doi:10.1177/0146167297237008

Bengtson, V. L., Rosenthal, C. J., & Burton, L. M. (1990). Families and aging: Diversity and heterogeneity. In R. Binstock, & L. George (Eds.), *Handbook of aging and the social sciences* (3rd ed., pp. 263–287). New York: Academic Press.

Bourdieu, P. (1985). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). New York: Greenwood.

Bousfield, C., & Hutchison, P. (2010). Contact, anxiety, and young people's attitudes and behavioral intentions towards the elderly. *Educational Gerontology*, **36**, 451–466. doi:10.1080/03601270903324362

Butler, R. N. (1969). Age-ism: Another form of bigotry. *The Gerontologist*, **9**, 243–246.

Carson, A. J., Kobayashi, K. M., & Kuenhe, V. S. (2011). The Meadows School Project: Case study of a unique shared site intergenerational program. *Journal of Intergenerational Relationships*, **9**, 405–417. doi:10.1080/15350770.2011.618369

Dunifon, R., & Bajracharya, A. (2012). The role of grandparents in the lives of youth. *Journal of Family Issues*, **33**, 1168–1194. doi:10.1177/0192513X12444271

Fair, C. D., & Delaplane, E. (2015). "It is good to spend time with older adults. You can teach them, they can teach you": Second grade students reflect on intergenerational service learning. *Early Childhood Education Journal*, **43**, 19–26. doi:10.1007/s10643-014-0634-9

Femia, E. E., Zarit, S. H., Blair, C., Jarrott, S. E., & Bruno, K. (2007). Impact of intergenerational programming on child outcomes. *Early Childhood Research Quarterly*, **23**, 272–287. doi:10.1016/j.ecresq.2007.05.001

Fingerman, K. l., Hay, E. L., & Birdett, K. S. (2004). The best of ties, the worst of ties: Close, problematic, and ambivalent social relationships. *Journal of Marriage and Family*, **66**, 792–808. doi:10.1111/j.0022-2445.2004.00053.x

Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology*, **78**, 708–724. doi:10.1037//0022-3514.78.4.708

Gilbert, C. N., & Ricketts, K. G. (2008). Children's attitudes toward older adults and aging: A synthesis of research. *Educational Gerontology*, **34**, 570–586. doi:10.1080/03601270801900420

Goodman, D. (2013). Bringing seniors and kindergarten children together through Qigong. *Journal of Intergenerational Relationships*, **11**, 199–202. doi:10.1080/15350770.2013.782769

Hagestad, G. O., & Uhlenberg, P. (2005). The social separation of old and young: A root of ageism. *Journal of Social Issues*, **61**, 343–360. doi:10.1111/j.1540-4560.2005.00409.x

Hagestad, G. O., & Uhlenberg, P. (2006). Should we be concerned about age segregation? Some theoretical and empirical explorations. *Research on Aging*, **28**, 638–653. doi:10.1177/0164027506291872

Harwood, J. (2000). Communication media use in the grandparent-grandchild relationship. *Journal of Communication*, **50**, 56–78. doi:10.1093/joc/50.4.56

Harwood, J., Hewstone, M., Paolini, S., & Voci, A. (2005). Grandparent-grandchild contact and attitudes toward older adults: Moderator and mediator effects. *Personality & Social Psychology Bulletin*, **31**, 393–406. doi:10.1177/0146167204271577

Henneberg, S. (2010). Moms do badly, but grandmas do worse: The nexus of sexism and ageism in children's classics. *Journal of Aging Studies*, **24**, 125–134. doi:10.1016/j.jaging.2008.10.003

Hummert, M. L. (1999). A social cognitive perspective on age stereotypes. In T. M. Hess, & F. Blanchard-Fields (Eds.), *Social cognition and aging* (pp. 175–196). San Diego, CA: Academic Press.

Hurme, H., Westerback, S., & Quadrello, T. (2010). Traditional and new forms of contact between grandparents and grandchildren. *Journal of Intergenerational Relationships*, **8**, 264–280. doi:10.1080/15350770.2010.498739

Ivey, J. B. (2001). Somebody's grandma and grandpa. Children's responses to contacts with elders. *MCN. The American journal of maternal child nursing*, **26**, 23–27. doi:10.1097/00005721-200101000-00007

Jarrott, S. E. (2011). Where have we been and where are we going? Content analysis of evaluation research of intergenerational programs. *Journal of Intergenerational Relationships*, **9**, 37–52. doi:10.1080/15350770.2011.544594

Kite, M. E., Stockdale, G. D., Whitley, B. E., & Johnson, B. T. (2005). Attitudes toward younger and older adults: An updated metal-analytic review. *Journal of Social Issues*, **61**, 241–266. doi:10.1111/j.1540-4560.2005.00404.x

Kuhn, D. (2009). Adolescent thinking. In R. Lerner, & L. Steinberg (Eds.), *Handbook of adolescence, Volume 1: Individual bases of adolescent development* (3rd ed., pp. 152–186). Hoboken, NJ: John Wiley & Sons.

Lasher, K. P., & Faulkender, P. J. (1993). Measurement of aging anxiety: Development of the anxiety about aging scale. *International Journal of Aging & Human Development*, **37**, 247–259. doi:10.2190/1u69-9au2-v6lh-9y1l

Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, **18**, 332–336. doi:10.1111/j.1467-8721.2009.01662.x

Levy, B. R., Chung, P. H., Bedford, T., & Navrazhina, K. (2014). Facebook as a site for negative age stereotypes. *The Gerontologist*, **54**, 172–176. doi:10.1093/geront/gns194

Levy, B. R., Kasl, S. V., & Gill, T. M. (2004). Image of Aging Scale. *Perceptual and Motor Skills*, **99**, 208–210. doi:10.2466/pms.99.1.208-210

Levy, B. R., Slade, M. D., May, J., & Caracciolo, E. A. (2006). Physical recovery after acute myocardial infarction: Positive age self-stereotypes as a resource. *International Journal of Aging & Human Development*, **62**, 285–301. doi:10.2190/ejk1-1q0d-lhge-7a35

Lichtenstein, M. J., Pruski, L. A., Marshall, C. E., Blalock, C. L., Liu, Y., & Plaetke, R. (2005). Do middle school students really have fixed images of elders? *The journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, **60B**, S37–S47. doi:10.1093/geronb/60.1.s37

Luescher, K., & Pillemer, K. (1998). Intergenerational ambivalence: A new approach to the study of parent-child relations in later life. *Journal of Marriage and Family*, **60**, 413–425. doi:10.2307/353858

Mason, J., May, V., & Clarke, L. (2007). Ambivalence and the paradoxes of grandparenting. *The Sociological Review*, **55**, 687–706. doi:10.1111/j.1467-954X.2007.00748.x

McGuinn, K. K., & Mosher-Ashley, P. (2002). Children's fears about personal aging. *Educational Gerontology*, **28**, 561–575. doi:10.1080/03601270290099769

Meshel, D. S., & McGlynn, R. P. (2004). Intergenerational contact, attitudes, and stereotypes of adolescents and older people. *Educational Gerontology*, **30**, 457–479. doi:10.1080/03601270490445078

Montepare, J. M., & Zebrowitz, L. A. (2002). A social-developmental view of ageism. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 77–125). Cambridge, MA: MIT Press.

Mueller, M. M., & Elder, G. H. Jr. (2003) Family contingencies across the generations: Grandparent-grandchildren relationships in holistic perspective. *Journal of Marriage and Family*, **65**, 404–417. doi:10.1111/j.1741-3737.2003.00404.x

Newman, S., & Hatton-Yeo, A. (2008). Intergenerational learning and the contributions of older people. *Ageing Horizon*, **8**, 31–39.

Pain, R., & P. Hopkins. (2010). Social geographies of age and ageism. In S. Smith, R. Pain, S. Marston, & J. Jones (Eds.), *The SAGE handbook of social geographies* (pp. 78–99). London: Sage Publications.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, **90**, 751–783. doi:10.1037/0022-3514.90.5.751

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, **38**, 922–934. doi:10.1002/ejsp.504

Powers, M., Gray, M., & Garver, K. (2013). Attitudes toward older adults: Results from a fitness-based intergenerational program. *Journal of Intergenerational Relationships*, **11**, 50–61. doi:10.1080/15350770.2013.755067

Prior, K., & Sargent-Cox, K. A. (2014). Students' expectations of ageing: An evaluation of the impact of imagined intergenerational contact and the mediating role of ageing anxiety. *Journal of Experimental Social Psychology*, **55**, 99–104. doi:10.1016/j.jesp.2014.06.001

Reitzes, D. C., & Mutran, E. J. (2004). Grandparenthood: Factors influencing frequency of grandparent-grandchildren contact and grandparent role satisfaction. *The journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, **59B**, S9–S16.

Robinson, T., Callister, M., Magoffin, D., & Moore. J. (2007). The portrayal of older characters in Disney animated films. *Journal of Aging Studies*, **21**, 203–213. doi:10.1093/geronb/59.1.s9

Rupp, D. E., Vodanovich, S. J., & Credé, M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology*, **145**, 335–362. doi:10.3200/SOCP.145.3.335-362

Schwalbach, E., & Kiernan, S. (2002). Effects of an intergenerational friendly visit program on the attitudes of fourth graders toward elders. *Educational Gerontology*, **28**, 175–187. doi:10.1080/036012702753542490

Schwartz, L. K., & Simmons, J. P. (2001). Contact quality and attitudes toward the elderly. *Educational Gerontology*, **27**, 127–137. doi:10.1080/03601270151075525

Silverstein, M., & Marenco, A. (2001). How Americans enact the grandparent role across the family life course. *Journal of Family Issues*, **22**, 493–522. doi:10.1177/019251301022004006

Strom, R. D., & Strom, P. S. (2015). Assessment of intergenerational communication and relationships. *Educational Gerontology*, **41**, 41–52. doi:10.1080/03601277.2014.912454

Tam, T., Hewstone, M., Harwood, J., Voci, A., & Kenworthy, K. (2006). Intergroup contact and grandparent-grandchild communication: The effects of self-disclosure on implicit and explicit biases against older people. *Group Processes & Intergroup Relations*, **9**, 413–429. doi:10.1177/1368430206064642

Thompson, E. H. (2006). Images of old men's masculinity: Still a man? *Sex Roles*, **55**, 633–648. doi:10.1007/s11199-006-9119-7

Triadó, C., Villar, F., Solé, C., Osuna, M. J., & Pinazo, S. (2005). The meaning of grandparenthood: Do adolescent grandchildren perceive the relationship and role in the same way as their grandparents do? *Journal of Intergenerational Relationships*, **3**, 101–121. doi:10.1300/j194v03n02_07

Uhlenberg, P., & Hammill, B. G. (1998). Frequency of grandparent contact with grandchild sets: Six factors that make a difference. *The Gerontologist*, **38**, 276–285. doi:10.1093/geront/38.3.276

Vanderbeck, R. (2007). Intergenerational geographies: Age relations, segregation and reengagements *Geography Compass*, **1**, 200–221. doi:10.1111/j.1749-8198.2007.00012.x

Weaver, A. (2014). Bridges: Growing older, growing together. *Journal of Intergenerational Relationships*, **12**, 197–201. doi:10.1080/15350770.2014.899827

Weller, S. (2006). Situating (young) teenagers in geographies of children and youth. *Children's Geographies*, **4**, 97–108. doi:10.1080/14733280600577517