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Research report

“Our” food versus “my” food. Investigating the relation between childhood shared food practices and adult prosocial behavior in Belgium

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ABSTRACT

This study focuses on the connection between prosocial behavior, defined as acting in ways that benefit others, and shared meals, defined as meals that consist of food(s) shared with others. In contrast to individual meals, where consumers eat their own food and perhaps take a sample of someone else's dish as a taste, shared meals are essentially about sharing all the food with all individuals. Consequently, these meals create situations where consumers are confronted with issues of fairness and respect. One should not be greedy and consume most of a dish; instead, rules of polite food sharing need to be obeyed. It is therefore proposed that those who have often engaged in shared meals during childhood will have a more prosocial personality, as compared to those who less often took part in shared meals during childhood. To test this hypothesis, data about frequency of shared meals during childhood and altruistic personality in early adulthood were collected using a cross-sectional survey in Belgium ($n = 487$). Results confirm that higher levels of shared meal consumption correspond to higher scores on the self-report altruism scale among students.

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Introduction

From an evolutionary point of view, food and cooperation are closely connected (Kaplan & Gurven, 2005). Studies of hunter-gatherer societies demonstrate that sharing food is associated with principles of cooperation and trust (Allen-Arave, Gurven, & Hill, 2008). In ancestral times, the acquisition of food was unpredictable and food often came in portions that were too large to be consumed within one family. Various theories explaining the sharing of food (Gurven, Hill, Kaplan, Hurtado, & Lyles, 2000; Patton, 2005) suggest that food sharing, and meat sharing in particular, occurs beyond the family, to members of a social network based on reciprocal actions. Accumulating and summarizing all the evidence, Mamei (2013) concluded that especially meat might have made us moral. The sharing of meat resulted in the evolution of a moral system that nowadays sustains human fairness in general. Between families, cooperation is not only a means to acquire food resources, but also a means to celebrate the outcome of such actions. Throughout human evolutionary history, commensality has always been a way to collectively celebrate the benefits of shared food acquisition (Jones, 2008). Focusing on food transfers within families,

evolutionary theories predict that parent–child conflicts may arise over the distribution of food among multiple siblings. As Trivers (1974) explained in his parent–offspring theory, parents want to distribute resources evenly over all of their children, while a child will want more investment than his/her siblings. Thus, while parents may demand an equal distribution of food among all of their children, each child may protest this decision, demanding a bigger share than all other siblings. Today food is still the first, and a very effective, way for parent–offspring conflicts to arise (Seymour, 1983). In sum, if the acquisition, distribution and consumption of food were closely tied to cooperation and morality within and across families throughout human history, one should expect that, even today, food must still be a strong elicitor of cooperative behavior. Indeed, recent studies show that food increases cooperation because of satiation effects; hunger makes people behave less cooperatively (Briers, Pandelaere, Dewitte, & Warlop, 2006; Petersen, Aarøe, Jensen, & Curry, 2013). These studies focused on short-term behavioral effects, and less is known if food consumption may also influence the development of an altruistic personality in the long run. Of course, people are born with (individually different) capacities of empathy and care toward others; works from the field of moral cognitive neuroscience demonstrate a neural, innate, basis of empathy, prosocial behavior and human moral cognition in general (Moll, Zahn, de Oliveira-Souza, Krueger, & Grafman, 2005). Still, apart from this biological predisposition, several theories and research also confirm

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an important place for socialization in the development of prosocial behavior (for an overview see e.g. Hastings, Utendale, & Sullivan, 2007). Food sharing might be one of several acts of socialization that contributes to the development of prosocial behavior. In addition, the abovementioned experimental studies show that the mere consumption of food influences prosocial behavior, and it is not yet known whether the way in which food is consumed also plays a role in this process.

It may be assumed that sharing of food may also contribute to a prosocial effect, as prior works show that people perceive those who do so as being 'closely connected' (Alley, 2012; Kniffin & Wansink, 2012; Miller, Rozin, & Fiske, 1998). However, there has seemingly been no research on whether food sharing relates to prosocial behavior in modern societies. This topic is particularly of interest to those working in the fields of social food studies and moral research. Framing it within the context of a growing trend of subjective individualization in affluent societies, Fischler (2011) argued that it is necessary to investigate the connection between prosocial behavior and commensality, defined as eating together. Reviewing emerging trends in moral research, it has been explicitly stated that researchers need to study how morality is being shaped in everyday communication and mealtimes in particular (Saxena & Babu, 2013).

The central goal of this paper is to explore the inherent moral features of shared food in the context of modern, everyday meals, and to determine whether sharing of food is linked to the development of an altruistic personality and prosocial behavior. Prosocial behavior is defined as actions that benefit one or more people other than oneself, thereby including behaviors such as sharing, helping, and cooperating (Batson & Powell, 2003). To meet these goals, a theoretical framework is presented, which explains the link between food sharing, in the context of everyday meals, and the socialization of prosocial behavior during adolescence. This proposal is then tested by means of a cross-sectional study in which the interrelatedness between childhood food sharing practices and adult prosocial behavior is tested among students in Belgium. The paper concludes with suggestions for future research.

Eating together and shared meals

Eating is often a social event that involves active training and embodiment of communicative norms and commensality values (Ochs & Shohet, 2006). Mealtimes are one of the first social occasions at which children are required to learn and express self-control, and are socialized as 'moral' human beings (Gallegos, Dziurawiec, Tilbury, & Abernethie, 2006; Ochs & Shohet, 2006; Seymour, 1983). So far, most of the research in this domain has focused on structural variables related to the presence of others at the table. More specifically, considerable attention has been paid to language socialization during mealtimes (Blum-Kulka, 1997; Bossard, 1943; Brumark, 2010). Verbalizations are, for example, used to directly socialize children according to desired norms and standards (Sterponi, 2009), and are often aimed at younger children (Brumark, 2010). Mealtime conversations may often result in parent-child conflicts (Paugh & Izquierdo, 2009), but then again, mealtimes are also occasions to discuss sensitive topics that may spark discussion. Given the presence of food, people can talk about what is on their plate and at any given time "food assessments can produce alternative trajectories of talk and provide for a closing of 'delicate' moments" (Mondada, 2009, p. 567).

Next to this verbalized form of socialization, mealtimes also offer an arena for non-verbal training of manners. These "[u]sually take the form of unspoken, almost subconscious guidelines and constraints – a basic substratum or minimum standard which the majority of use carefully observes" (Visser, 1991, p. 341). Non-verbal socialization is less direct and overt. Children and novices

at the table are apprentices who learn through observation and participation with more knowledgeable others (Ochs & Shohet, 2006). Different elements of mealtime habits offer potential for this form of socialization. For example, across communities, mealtime comportment includes rules about order (i.e., who eats before, after, or at the same time as whom) and rules about the social (i.e., fair) distribution of food (Ochs & Shohet, 2006). The presence of others around the table necessitates an order in which food can be served; typically, the order is not random, as guests and older people are commonly served first. In this sense, the order in which food is served signals the prestige and power of those seated around the table (Seymour, 1983), such that patience and obedience are required for those who are served last.

Mealtimes are also an arena for power negotiations (Grieshaber, 1997). Small children, who have little power in general, are part of these negotiations, as rejecting food is one of the first and most effective ways in which they can display their power toward their parents and other adults (Seymour, 1983). The negotiations that emerge become the tools to socially construct the daily rituals of family living and in establishing domestic order (Grieshaber, 1997). Typically, the end of the meal also entails a potential conflict situation where parents might apply rules of obedience. The child might reach satiety before the end of the meal, or the child might resist the food before being satiated (Laurier & Wiggins, 2011; Wiggins & Hepburn, 2007).

For all of the above examples, the *presence of others* around the table is crucial. Mealtimes are arenas for moral socialization because the presence of other people entails rituals and verbalizations that teach novices about polite behavior. However, one aspect of the meal that has remained unmentioned is the actual food that is being consumed. We believe that some, though not all meals, inherently bring forth aspects of morality, and fair play in particular, because of the way in which food is offered and consumed, and not so much because of the presence of other people. We propose that specific foods may have the power to enforce fairness on consumers, perhaps even when there is no one else in close proximity when the food is being eaten.

To investigate this possibility, it is necessary to make the distinction between *eating together* and *shared meals*. Consider two groups, each with four people, having dinner in the same restaurant. Both groups are eating 'together.' That is, they are consuming food in the presence of others, which is a structural variable. In the first group all four individuals have ordered their own, personal, favorite dish. They share food experiences in each other's presence, and some might even take a bite of another person's food in order to sample the taste of a different dish. In essence, though, these people are not truly sharing their food when compared against the second group. Seated in the same environment, this group ordered several dishes to share. These dishes are placed centrally on their table, and need to be divided into portions for all four people. In this group the meal is genuinely 'shared,' which we label as a *shared meal*. Like the first group, the members of this second group eat together, in each other's presence, and therefore the shared aspect of the meal is not about this structural variable, but the food itself.

Issues such as the division of food are absent when people consume their individual food together. Shared meals need to be divided, preferably into roughly equal portions, and the food needs to be served, which necessitates an order and the power negotiations we described earlier. Indeed, the creation of equal or unequal portions is an inherent and unique feature of shared meals and may occur in the absence of other consumers. Consider, for instance, a family of four living together. A meal has been prepared, yet due to different time schedules it is not possible to consume this meal as a group. The one who prepared the dish eats first, followed by the three others who each eat at different times. Given that this meal is sufficient to satisfy the hunger of all four, yet barely more than

that, all four will be confronted with issues of fairness. Each will likely think about how much food he or she can fairly take, and how much should be left for the others. The last person will presumably consider how much has been left for her/him. Novices, and children in particular, are trained not to be greedy, and parents may find it necessary to remind them about the rules of sharing (Barlow, 2010; Busch, 2012). Verbal reminders may be unnecessary, though, as serving food and dividing portions are unspoken signals of fairness and order that occur on a subconscious level (Visser, 1991).

In sum, we believe that sharing meals has the power to train children to become fair-minded, not only because of the presence of other people around the table (eating together, structural variable), but perhaps even more so because of the dishes that need to be divided in multiple portions (food sharing). If this is true, it can be assumed that those who have frequently engaged in meal sharing during childhood will score higher with respect to prosocial behavior and altruistic tendencies than those who have less frequently consumed shared meals. In addition, we want to investigate what matters most when consuming a meal together; the food sharing part or the eating together part.

Materials and methods

To test these predictions, a cross-sectional survey was conducted among a student population in Belgium. This study was carried out in full compliance with the American Psychological Association (APA) guidelines on the conduct of research involving human subjects. Ethical approval was obtained from the Ethical Committee of Social Sciences and Humanities, University of Antwerp. Participants were fully informed about the general aims of the study and that their anonymity was guaranteed. All participants provided written informed consents.

Sample

In total, 487 surveys were collected. Some respondents neglected to complete personal data, such as age and sex, which were grounds to exclude them from the sample ($n = 11$). In abidance with the APA ethical guidelines, five participants were also excluded, as they were under 18 years of age. After this, ages ranged from 18 to 77, with five participants being older than 30. These were also excluded from the sample, to keep the age range between 18 and 30. The final sample therefore included 466 Belgian students, with a mean age of $M_{\text{age}} = 19.89$ ($SD = 2.24$) and 65.9% being 20 years of age or younger. There were more female (63.7%) than male respondents. A student population in Belgium may appear atypical compared to, for instance, a student sample in the United States, with many more students still living with their parents. Therefore a summarizing overview of some other descriptive variables is presented in Table 1.

Materials

Participants were first surveyed about their childhood eating habits and events through a statement where the questions pertain to family habits during their childhood time. Childhood was defined as the period when they were under full custody of their parents, until the age of 18. This timeframe has been successfully used in the collection of retrospective recall data about food habits (Unusan, 2006). It is also supported by the research of Branen and Fletcher (1999) who showed that adult respondents have no difficulties in recalling food-related events from when they were as young as 4 years of age.

Table 1
Sociodemographic profile of participants in this sample ($N = 471$).

Sociodemographic variables	% of total	% of males ($n = 169$)	% of females ($n = 297$)
<i>Type of education (n = 453)</i>			
Vocational university	5.8	4.1	6.7
University bachelor	65.0	69.8	62.3
University master	20.0	18.9	20.5
Other	6.4	4.7	7.4
<i>Educational level father (n = 455)</i>			
Elementary school	5.1	4.3	5.6
Vocational secondary	6.9	5.5	7.6
Secondary education	27.2	25.0	28.5
Polytechnic/Vocational university	28.1	28.7	27.8
University bachelor	3.1	4.9	2.1
University master	21.7	23.2	20.8
Post-university (e.g., PhD)	3.5	3.7	3.5
Not known	4.4	4.9	4.2
<i>Educational level mother (n = 465)</i>			
Elementary school	4.5	4.2	4.7
Vocational secondary	8.0	8.3	7.7
Secondary education	28.0	27.4	28.3
Polytechnic/Vocational university	40.6	42.9	39.4
University bachelor	2.6	2.4	2.7
University master	13.3	11.3	14.5
Post-university (e.g. PhD)	.4	3.6	.7
Not known	2.6	3.6	2.0
<i>Living situation during the week (n = 465)</i>			
Living alone	13.8	11.8	14.9
Living with partner	5.4	3.0	6.8
Living with roommates	13.1	13.0	13.2
Living with parent(s)	64.3	68.6	61.7
Other	3.4	3.6	3.4
<i>Living situation during the weekend (n = 463)</i>			
Living alone	1.7	1.8	1.7
Living with partner	5.4	3.6	6.5
Living with roommates	1.7	3.0	1.0
Living with parent(s)	86.4	86.9	86.0
Other	4.8	4.7	4.8

Shared meals measures

Home-cooked family meals were used as a proxy for shared meals, with home-cooked meals defined as "meals prepared by, and especially for, the family, and consisting of food to be shared". The frequency of consuming home-cooked meals was measured on 9-point Likert-type scale, where 1 = *never*, 2 = *less than once a month*, 3 = *about once a month*, 4 = *a few times a month*, 5 = *about once a week*, 6 = *2-3 times a week*, 7 = *4-5 times a week*, 8 = *almost daily*, and 9 = *daily*. Because of anticipated gender differences in the preparation of home cooked meals in Belgium, and to compare the descriptive results with previous research (Daniels, Glorieux, Minnen, & van Tienoven, 2012; De Backer, 2013), respondents were asked separately how frequently their mother and their father prepared home-cooked meals during childhood. These data yielded two predictors to measure the influence of the frequency of childhood shared meals: Home Cooked by Mother and Home Cooked by Father.

Eating together measures

To examine the effect of the presence of others around the table (i.e., a structural variable) on shared meals, respondents were asked how often during childhood they had breakfast and dinner in the presence of their mother and father. Questions were again asked separately for their mother and father, as previous research has indicated mothers' presence at the table to be more prominent in Belgium (De Backer, 2013) and this allowed comparison of these

results. These scales varied from 0 = never to 7 = every day of the week. No questions were asked for lunch times, since lunch is most frequently consumed at schools (De Backer, 2013). In the end, this yielded four variables to measure eating together, on a scale of 0 = never to 7 = daily, of eating childhood breakfasts in the presence of their mother, childhood breakfasts in the presence of their father, childhood dinners in the presence of their mother, and childhood dinners in the presence of their father.

Prosocial behavior measures

Prosocial behavior was measured using the 20-item Self Report Altruism scale (SRA; Rushton, Chrisjohn, & Fekken, 1981), which we developed (using back-translation) in Dutch. The scale comprises 20 items that describe everyday acts of prosocial behavior (see Table 2). Respondents rate the frequency with which they have engaged in these behaviors, using the scale 1 = never, 2 = once, 3 = more than once, 4 = often, and 5 = very often. A sum score for the SRA was computed to use as a dependent variable in the regression analysis. The items show good internal consistency, with $\alpha = .82$.

Data analyses

Descriptive analyses to look at the reported frequencies of home cooked meals (as a proxy for shared meals) were done via a within-subjects Repeated Measures Analysis of Variance (ANOVA) to contrast parent (mother vs. father), while controlling for sex of the respondent, which were added as between-subjects factors. Next, to analyze the structural variables with regard to eating together as a family, a within-subjects ANOVA (Repeated Measures) was created to contrast meal type (breakfast vs. dinner) and parent (mother vs. father), controlling for sex of the respondent, which was added as between-subjects factors. To compare general levels of prosocial behavior among male and female students in Belgium, a Factorial Analysis of Variance (ANOVA) model was created, with the total score

Table 2
Mean scores for each of the 20 items of the Self Report Altruism Scale among a Belgian student sample ($N = 471$).

	M	SD
1. I have assisted someone with car or bike troubles	1.70	.78
2. I have given directions to a stranger	2.87	.84
3. I have made change for a stranger	2.38	1.04
4. I have given money to a charity	2.22	1.03
5. I have given money to a stranger who needed it (or asked me for it)	2.06	.97
6. I have donated goods or clothes to a charity	2.29	1.08
7. I have done volunteer work for a charity	1.81	1.22
8. I have donated blood	1.19	.60
9. I have helped carry a stranger's belongings (books, parcels etc.)	2.48	1.01
10. I have delayed an elevator or held the door open for a stranger	3.44	1.10
11. I have allowed someone to go ahead of me in a lineup	2.27	1.06
12. I have given a stranger a lift in my car/on my bike	2.09	1.20
13. I have pointed out a clerk's error in undercharging me for an item	1.58	.80
14. I have let someone whom I didn't know too well borrow an item of some value to me	2.25	.99
15. I have bought charity goods because I knew it was a good cause	1.84	.89
16. I have helped a classmate who I did not know that well with a homework assignment	2.91	.99
17. I have looked after someone's plants, pets, house, or children without being paid for it.	2.09	1.05
18. I have offered to help someone cross a street (handicapped or elderly person)	1.55	.82
19. I have offered my seat on public transport	2.67	1.14
20. I have helped someone to move households	1.68	.85

Note: Measured on 1–5 Likert-type scales ranging from 1 = never to 5 = very often. * $p < .05$; ** $p < .01$; *** $p < .001$.

for the Self Report Altruism scale as the dependent variable, and sex as the fixed factor.

To test the prediction if the consumption of shared meals during childhood relates to adult scores of prosocial behavior, a regression analysis was performed. Using a Hierarchical Regression, the effects of the following blocks of variables were tested: (1) the shared meals variables: frequency of mother's home cooking as a child and frequency of father's home cooking as a child, and (2) the eating together variables: frequency of having childhood dinners with mother, frequency of having childhood breakfasts with mother, and frequency of having childhood dinners with father, frequency of having childhood breakfasts with father. In model 1 the shared meals variables only were selected, in model 2 the eating together variables only were selected and, in model 3 all variables were entered (see Table 3). To investigate the connection between childhood food sharing frequencies and adult scores on the Self-Report Altruism scale, one-tailed correlations were analyzed to see how every increase in home-cooked meals by the mother corresponds to an increase in any of 20 separate items of the SRA scale.

Results

Descriptive findings

Mothers' and fathers' childhood home cooking in Belgium

Results show a main effect of parent, $F(1, 446) = 612.30$, $p < .001$, $\eta^2 = .579$ and no significant interaction effect of parent X sex of the respondents, $F(1, 446) = 1.99$, $p = .16$, $\eta^2 = .004$. Looking at the detailed descriptive results (see Table 4), it shows that mothers more often provide home cooked meals ($M = 7.91$, $SD = .08$, $MIN = 1$, $MAX = 9$) compared to fathers ($M = 3.75$, $SD = .12$).

Eating together with parents in Belgian families

Results show a main effect of meal type, $F(1, 392) = 196.37$, $p < .001$, $\eta^2 = .333$, and no interaction effect of meal type X sex of the respondents, $F(1, 392) = .77$, $p = .38$, $\eta^2 = .002$. For both male and female students, childhood dinners appear to be eaten more often in the company of a parent, compared to childhood breakfasts (see Table 4). There is also a main effect of parent, $F(1, 392) = 97.98$, $p < .001$, $\eta^2 = .200$, and a significant interaction effect of parent X sex of the respondents, $F(1, 392) = 6.10$, $p < .05$, $\eta^2 = .015$. In general, break-

Table 3

Hierarchical regression of shared meal variables and eating together variables as independent measures to predict differences in adult prosocial behavior.

	B	SE B	Beta
<i>Shared meal variables^a</i>			
Constant	35.33	3.50	
Home-cooked mother	.93	.37	.15*
Home-cooked father	.00	.23	.00
<i>Eating together variables^b</i>			
Constant	42.62	2.74	
Breakfast mother	.14	.27	.03
Dinner mother	-.21	.49	-.03
Breakfast father	.19	.24	.05
Dinner father	-.01	.32	.00
<i>Shared meals and eating together variables^c</i>			
Constant	37.43	3.90	
Home-cooked mother	1.06	.39	.18**
Home-cooked father	-.03	.24	-.01
Breakfast mother	.02	.27	.01
Dinner mother	-.67	.51	-.09
Breakfast father	.22	.24	.06
Dinner father	.05	.32	.01

Note: ^a $F(2, 366) = 4.41$, $p = .01$, $R^2 = .02$, $\Delta R^2 = .02$.

^b $F(4, 364) = .38$, $p = .82$, $R^2 = .004$, $\Delta R^2 = .004$.

^c $F(6, 362) = 1.96$, $p = .07$, $R^2 = .03$, $\Delta R^2 = .03$.

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

Table 4

Student reported frequencies of parents' home cooking (shared meal) and eating in the presence of their parents (eating together) in Belgium.

	Females M (SD)	Males M (SD)
<i>Shared meals^a</i>		
Home cooked by mother	7.99 (1.56)	7.81 (1.55)
Home cooked by father	3.63 (2.37)	3.88 (2.59)
<i>Eating together^b</i>		
Breakfast with mother	5.49 (2.13)	5.27 (2.29)
Dinner with mother	6.46 (1.29)	6.54 (1.22)
Breakfast with father	3.99 (2.48)	4.37 (2.42)
Dinner with father	5.58 (2.01)	6.01 (1.70)

Note: ^aMeasured on a scale from 1 (never) to 9 (daily).

^b Measured on a scale from 0 (never) to 7 (every day of the week).

fast and dinner appears to be eaten most often in the presence of a mother. Yet, compared to female students, male students report higher scores for eating breakfast and dinner with their father (see Table 4). There is also a significant interaction effect of parent X meal type, $F(1, 392) = 15.25, p < .001, \eta^2 = .037$, with dinners eaten in the presence of their mother gets the highest score, while breakfast eaten with their father gets the lowest scores (see Table 4). No significant interaction effect of parent X meal type \times sex of the respondents was found, $F(1, 392) = 1.02, p = .31, \eta^2 = .003$.

Prosocial behavior among Belgian students

The average score on the sum score of the SRA scale was $M = 43.18, SD = 9.30$ (MIN = 23, MAX = 75). Given that the sum score of the SRA can range from 20 to 100, this mean score is significantly lower than the midpoint (60), $t(439) = -37.94, p < .001$. No significant effect appeared for sex $F(1, 438) = 3.50, p = .06, \eta^2 = .01$. Female students score as high ($M = 42.56, SD = 9.05$) as male students ($M = 44.27, SD = 9.65$).

The scores for each of the 20 items individually (see Table 2) show that delaying an elevator or holding a door for a stranger is done most often ($M = 3.44, SD = 1.10$), followed by helping a classmate on an assignment ($M = 2.91, SD = .99$), giving directions to a stranger ($M = 2.87, SD = .84$), offering a seat on public transport ($M = 2.67, SD = 1.14$) and carrying a stranger's belongings ($M = 2.48, SD = 1.01$). For more details on all scores, see Table 2.

Sharing meals and eating together during childhood and adult prosocial behavior

The first model, with both food sharing variables as independent measures was significant, $F(2, 366) = 4.41, p = .01$, Durbin-Watson = 1.99. Examining both variables separately, only home-cooked meals by the mother appear to have a significant impact on the adult prosocial behavior ($\beta = .15, p < .05$, see Table 2). The second model, with all eating together variables as independent measures was not significant, $F(4, 364) = .38, p = .82$, Durbin-Watson = 1.99. Looking at the coefficients, none of the independent eating together measures could significantly predict any difference in adult prosocial behavior (see Table 3). Finally, the last model, with all shared meals and eating together variables entered together, was also not significant, $F(6, 362) = 1.96, p = .07$, Durbin-Watson = 1.99. With respect to the coefficients, only home-cooked meals by the mother could predict a difference in adult prosocial behavior, with $\beta = .18, p < .01$ (see Table 3 for further details). In sum these results show that a shared meal measure can predict differences in prosocial behavior, whereas measures related to eating together cannot do this.

Results of the correlational analyses on the 20 SRA items separately show that an increase in the frequency of home-cooked meals by the mother corresponds to an increase in giving directions to a

stranger, $r = .12, p < .01$, giving money to a charity, $r = .10, p < .05$, donating goods to a charity, $r = .12, p < .01$, buying charity goods, $r = .10, p < .05$, offering a seat on public transport, $r = .08, p < .05$, and helping someone to move households, $r = .11, p < .05$.

Discussion

Over the years, researchers have concluded that there is great diversity in the context and frequency of family meals, despite the fact that these family meals benefit the physical and psychological health of adolescents (Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010). The current study adds to this literature by showing that some family meals might even benefit the well-being of individuals other than merely the adolescents who are seated around the table. Meals have the power to endorse the message that there shall be no greed. That is, if family members share food with each other, they create a context wherein issues of fairness and equality arise, because food needs to be shared among members. Dividing portions is more than a way to satisfy hunger, it is a way to train children and adolescents to become prosocial adults. To test whether this is correct, we investigated if frequencies of home cooked meals, used as proxies for sharing food (shared meals), during childhood corresponded to levels of an altruistic personality and prosocial behavior among adults. And, we tested if the effect of shared meals was equal or greater to the effect of parents' presence at the table (eating together). Prosocial personality and behavior was measured by the Self-Report Altruism scale (Rushton et al., 1981). The scores for this scale were generally rather low, with an average mean score below midpoint, which is lower than the average mean score reported by Rushton and colleagues. Our sample of Belgian students were most likely to engage in smaller acts of prosocial behavior; holding a door for, giving directions to, offering a seat on public transport for, or carrying something for strangers, and helping a classmate with an assignment received the highest scores. Results of our regression analyses showed that the frequency of mothers' home cooking during childhood (as a proxy for shared meals) was positively related to students' overall score on the Self-Report Altruism scale. Looking into detail how mothers' home cooking corresponded to each of the 20 items, we noticed that two of the five most popular acts of prosocial behavior were significantly related to mothers' home-cooked meals: giving directions to a stranger and offering a seat on public transport. In addition, correlations were found for acts that received lower scores in general, like helping someone to move households and most items related to charity work. The mean scores for all of these items were generally below midpoint, and the correlation results showed that those who frequently consumed mothers' home-cooked meals scored higher on these items, compared to those who did not. The effect sizes remain rather small, but still these results confirm the assumptions that mealtimes may be important everyday actions that shape our morality (Saxena & Babu, 2013).

The idea that mealtimes are crucial sites for the socialization of children and adolescents is not new (e.g., Ochs & Shohet, 2006). Previous research in this domain has mainly described how mealtime conversations are loaded with verbalized and unspoken moral instructions to those seated around the table, and in their opinion, structural variables related to others' presence around the table should matter (e.g., Gallegos et al., 2006; Ochs & Shohet, 2006; Sterponi, 2009; Paugh & Izquierdo, 2009). According to Fischler (2011), this eating together is a crucial aspect of mealtimes' power to increase prosocial tendencies. Based on these findings, it was assumed that the presence of parents at the table during childhood meals would also be positively associated with more prosocial behavior among adult students in this study. Parents reward their children's moral behavior during mealtimes, and thus it can even be assumed that those who often ate with their parents would be

1 trained to over-rate their moral actions in later life as well. However,
 2 in contrast to these arguments, no relationship was found between
 3 how frequently mothers' and fathers' presence was reported to be
 4 during childhood mealtimes and students' current ratings of their
 5 own altruistic personality and prosocial behavior. Moreover, the
 6 results of this study suggest that the mere presence of parents during
 7 mealtimes may not matter that much, and instead, the key issue
 8 is the way the food being consumed is presented, as in sharing it
 9 with others or having it all to oneself. For example, at a children's
 10 party it will be more beneficial, in terms of prosocial socialization,
 11 to bring one cake to the table to be shared than to offer a plate of
 12 cupcakes. When the cake needs to be cut, children will carefully pay
 13 attention to the size of each portion and the order of the servings.
 14 These issues prime them to think about fairness. Offering a cupcake
 15 is missing out on this opportunity. Given the limited research on
 16 this aspect of mealtimes and sharing food, and the promising find-
 17 ings of this study, further investigations in this area are necessary.

18 For future research, it will be interesting to further investigate
 19 if and how food sharing and levels of prosocial behavior are uni-
 20 versally connected, studying these phenomena across different
 21 cultures, for example by analyzing anthropological records. Fur-
 22 thermore, it will be interesting to investigate if not only food sharing
 23 practices relate to prosocial behavior and altruistic personalities
 24 (measured as trait), but also to see if food sharing in general can
 25 be connected to instant prosocial behavior (measured as state). For
 26 instance, receiving food, or even receiving an invitation to a meal,
 27 often triggers a clear desire to reciprocate, which is in line with the
 28 long evolutionary history of reciprocity in the context of food trans-
 29 fers (e.g. Kaplan & Gurven, 2005). Previous experimental studies have
 30 already shown that the consumption of food leads to positive short-
 31 term behavioral effects in terms of cooperation (Briers et al., 2006;
 32 Petersen et al., 2013). It will be interesting to investigate if similar
 33 effects can be found for food sharing. Moreover, this would also show
 34 more insight into the potential causality of the relation between food
 35 sharing and prosocial behavior. Theoretically we assume that the
 36 frequent sharing of food has shaped the altruistic personality of the
 37 respondents in this study, but our design does not allow us to derive
 38 any conclusions of causality. Nor can this study guarantee any short-
 39 term effects of food sharing on state altruism. Therefore, it needs to
 40 be determined whether a single event of food sharing may influ-
 41 ence state altruism, or whether repeated events are necessary. It
 42 is also possible that only specific types of food sharing events in-
 43 fluence state altruism. Moreover, this study looked at food sharing
 44 in a context of family meals. There is no guarantee that the mecha-
 45 nisms described in this paper can be translated to any occasion of
 46 food sharing. For instance, it is known that when people eat in the
 47 presence of family or friends, their eating behavior is different com-
 48 pared to occasions where people eat with strangers, with people
 49 eating less in the presence of strangers (e.g. Salvy, Jarrin, Paluch,
 50 Irfan, & Pliner, 2007). Thus, it might be the case that issues of fair
 51 food shares play less in a context of strangers sharing food, com-
 52 pared to family and friends sharing food, because the latter will eat
 53 more compared to the first. These will be important issues to keep
 54 in mind when experimentally testing the potential causality between
 55 food sharing and state altruism.

56 The present study is subject to some limitations. A first limita-
 57 tion of this study is the use of self-report measures. Self-reports may
 58 be subject to response distortions (e.g., extreme or central tenden-
 59 cy responding, negative affectivity bias, socially desirable responding)
 60 that might inflate the associations between independent and
 61 outcome variables (Podsakoff, MacKenzie, & Podsakoff, 2012; Ponnet
 62 et al., 2013). The self-report altruism scale used in this study was
 63 developed by Rushton et al. (1981) and shown to be internally con-
 64 sistent across five samples. These authors also showed that the self-
 65 report scores correspond with peer-ratings of altruism, and to actual
 66 prosocial behavior (e.g., being an organ-donor). It has been argued

67 that retrospective self-report measures of food behavior during child-
 68 hood are reliable as well (Branen & Fletcher, 1999; Unusan, 2006).
 69 An alternative way to measure childhood eating habits and adult
 70 prosocial behavior would be through reports of independent evalu-
 71 ators (e.g., parent reports or sibling reports). Second, the mere focus
 72 on the home-cooked family meal does not take other shared meal
 73 occasions into account. Eating together and food sharing occurs
 74 beyond the realm of the family meal (Julier, 2013) and it would be
 75 interesting to examine the full range of other shared meal occa-
 76 sions. Third, of course home-cooking can also entail personalized
 77 dishes for individuals who then eat together at the same time. In
 78 most occasions, home-cooking will relay on foods to be shared by
 79 multiple people, as defined and measured in this study, because ca-
 80 tering for individual demands is a daunting task for home cooks
 81 unless they rely on ready-made meals or take-out (Jabs & Devine,
 82 2006). In future studies it would be interesting to also take home-
 83 cooked individual meals, take-out, ready-meals and eating out into
 84 account. In all of these occasions, individuals eat personalized dishes
 85 together in the group, but without some of the burdens of a shared
 86 meal, such as having to compromise on choice. Of course, these meals
 87 may also be consumed alone, or in separate groups. Difficulties to
 88 coordinate different food preferences and tastes is even one of the
 89 many reasons why families today not always succeed in eating to-
 90 gether as a family on a frequent basis (Brannen, O'Connell, & Mooney,
 91 2013). Yet, eaten together or apart, based on this study, it can be
 92 assumed that frequencies in the consumption of take-out, ready
 93 meals and eating out will not correspond to frequencies of prosocial
 94 behavior.

95 Lastly, there were sex differences in the findings that need to be
 96 examined by a broader scientific context. Male and female stu-
 97 dents reported more frequent home cooking during childhood
 98 by mothers compared to fathers. This finding reconfirms previous
 99 reports of a female dominance in the realm of an everyday cooking
 100 role (Charles & Kerr, 1988; DeVault, 1991; Murcott, 1982), which
 101 appears to still exist in Belgium today (De Backer, 2013). Mothers
 102 also appeared to outscore fathers in terms of their presence at
 103 the table, the dinner table in particular. Yet, compared to female
 104 students, male students did report higher frequencies of eating
 105 in company of their father. Perhaps this indicates that for young
 106 boys, fathers not only serve as a role model for how food is
 107 being prepared (De Backer, 2013), but is how it is being con-
 108 sumed as well.

109 In sum, sharing food appears to be more than just the shared
 110 intake of calories. The repercussions of a shared meal may appear
 111 well beyond the social gathering that may (or may not) accompa-
 112 ny the consumption of this meal. Sharing food as a family helps
 113 educate children into becoming prosocial young adults. It is assumed
 114 that this is because sharing food primes people to think about fair-
 115 ness and equality, and further research is needed to examine cause
 116 and effect, focusing on long-term and short-term time spans.

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