Children's Variety Seeking in Food Choices

Margaret Echelbarger[a]

Michal Maimaran[b]

Susan A. Gelman[c]

[a]University of Chicago
Booth School of Business
5807 S. Woodlawn Ave.
Chicago, IL 60637-1610
margaret.echelbarger@chicagobooth.edu

[b]Northwestern University
Kellogg School of Management
2211 Campus Dr.
Evanston, IL 60208-0898
m-maimaran@kellogg.northwestern.edu

Corresponding author:
Margaret Echelbarger
University of Chicago
Booth School of Business
5807 S. Woodlawn Age.
Chicago, IL 60637
margaret.echelbarger@chicagobooth.edu

[c]University of Michigan
Department of Psychology
530 Church St.
Ann Arbor, MI 48109-1043
gelman@umich.edu

Word Count: 4,009

Author Note: Portions of this research were included in [author]'s dissertation.

ABSTRACT

Across three studies, we examine the variety selections of 329 children (4-9 years of age) and 81 adults in the food domain. In Studies 1 and 2, we find that, like adults, children (4-9 years) prefer to diversify their selections given no established preference for one item over another. In Study 3, we find that children (4-9 years) diversify their selections more and choose more healthy options when choosing items simultaneously (all on one day) versus sequentially (across several days). Together, our results provide novel insight into the potential for variety to serve as a tool to promote greater well-being in childhood.

Children's Variety Seeking in Food Choices

Across different contexts, adults opt to diversify their selections and seek variety (e.g., Kahn 1995, Ratner and Kahn 2002, Rather, Kahn, and Kahneman 1999, Redden 2007). Given the pervasiveness of this choice strategy among adults, we examine when children adopt adult-like patterns of variety seeking, in a context where diversifying is important to children's well-being, namely, food choices. Exposure to more varied foods during the preschool years is associated with more varied diets in early childhood (Nicklaus, Boggio, Chabanet, and Issanchou 2005). Past research additionally indicates children are responsive in their food choices to the options provided. For example, offering a variety of fruits and vegetables increases preschool-aged children's consumption of both food types (Roe, Meengs, Birch, and Rolls 2013). Among school-aged children, increasing the number of fruits and vegetables offered during lunch increases children's consumption of these items (Just, Lund, and Price 2012). Furthermore, children as young as four and five prefer varied to non-varied sets of novel non-food items (Echelbarger and Gelman 2017). In this paper we examine whether children's tendency to vary their selection of non-foods items extends to the food domain, even after indicating a preference for one food item over another, and if so, whether we can exploit this tendency to encourage children to choose healthier food options.

Examining children's food selections allows us to test the roles of a priori preference and product category in variety selections. As children become more experienced consumers (John 1999), their preferences rely on a broader range of attributes (Bahn 1986; Capon and Kuhn 1980; Ward, Wackman, and Wartella 1977) and more fully influence their choices (Roedder, Sternthal, and Calder 1983). Children also become more skilled in forming and organizing categories (Callanan and Markman 1982; Fisher, Godwin, Matlen, and Unger 2015; Rakison and Oakes

2003; Waxman, Lynch, Casey, and Baer 1997). Given these developmental changes, including developmental changes in food concepts (e.g., Nguyen and Murphy 2003), whether young children will diversify their selections to the same degree as older children and adults remains an open question. In Studies 1 and 2, we test the effect of preferences and product category on variety seeking in children and adults, first measuring preferences for healthy, neutral, and unhealthy foods, and then assessing variety selections.

Because consumers often make repeated choices, especially among snacks, we also ask whether the manner in which these repeated choices are made (simultaneously, i.e., choosing all products at once, or sequentially, i.e., choosing a product each day) can affect children's variety seeking, including their tendency to choose healthier options. Adults tend to choose more variety when choosing items simultaneously rather than sequentially (Mittelman, Andrade, Chattopadhyay, and Brendl 2014; Simonson 1990). In Study 3 we test whether children are similarly influenced by timing. By including healthy (i.e., fruits) and neutral (i.e., crackers) options in the choice set, we further test if increased diversification leads children to choose healthier options.

Together, our research sheds light on the strength and limits of children's variety seeking and offers insight into when children engage in adult-like patterns in their variety selections. Our research further contributes to the literature on children's eating habits (Albuquerque et al. 2019; Maimaran and Salant 2019; Maimaran and Fishbach 2014; Robinson, Borzekowski, Matheson, and Kraemer 2007; Wardle and Houn 2000) by identifying novel ways to encourage children to choose healthier foods.

STUDY 1: THE ROLE OF PREFERENCE WHEN CHOOSING FOOD ITEMS WITHIN CATEGORIES

In Study 1, we examine the role of a priori preference and food category on variety selections. Specifically, we test whether four- to nine-year-olds (and adults as a comparison group) will forego an additional unit of a preferred food item in order to obtain variety.

Method

Participants. Participants included 120 children: four- and five-year-olds (n = 41, M = 5.17 years, SD = 0.60 years, 61% females), six- and seven-year-olds (n = 41, M = 6.93 years, SD = 0.59 years, 51% females), and eight- and nine-year-olds (n = 38, M = 8.94 years, SD = 0.63 years, 66% females), and 41 adults (M = 19.17 years, SD = 1.14 years, 61% females). See web appendix 2 for race and exclusion information. Children were recruited from laboratory spaces in museums in a city in the midwestern US; adults were recruited from a university psychology subject pool in the same city. Children were compensated with a small thank-you gift; adults received course credit.

Child Procedure. Children in this and all studies were tested individually. Children then completed an easy warm-up task (see web appendix 1) designed to ensure they were comfortable expressing their preferences.

The main task consisted of six experimental trials, each including a different pair of food items, subdivided into healthy, neutral, and unhealthy (see Table 1; see web appendix 1 for pretest information).[1] In each trial, children first saw two items [A and B] on a computer and were asked, “Which do you like better: [label for left item], [label for right item], or are they about the same?” We counterbalanced the left-right placement of the individual food items

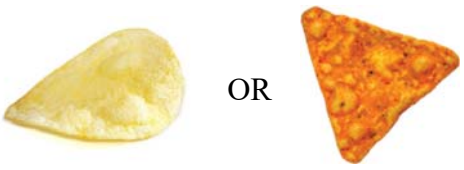
[1] We thank an anonymous reviewer for suggesting we categorize our food pairs in this way.

across participants. On the next screen, children saw three sets of items from which to choose [AA, BB, AB] and were asked, "Choose one set that you would like for yourself." We counterbalanced the placement of the varied set within participants (left, center, right) and randomized trial order. See Figure 1A for a sample trial.

Adult Procedure. After providing consent, adults completed the same task as children.

Table 1: Pairs of food used in Study 1.

	Healthy	Neutral	Unhealthy
Pair 1	carrot + broccoli	animal cracker + graham cracker	potato chip + Dorito
Pair 2	apple slice + orange slice	snack cracker + cheese cracker	gummy bear + marshmallow



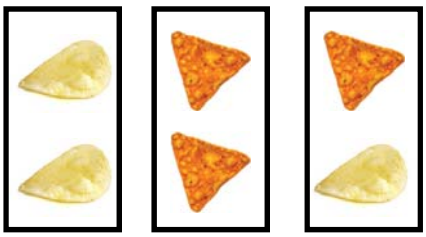


Figure 1A. Sample Study 1 food trial.

Results and Discussion

Variety Selections by Preference, Pair Type, and Age Group. First, we analyzed the data via a generalized linear model-effects model with preference (whether a participant indicated preferring one item to another in a trial), pair type (i.e., healthy, neutral, unhealthy), and age group (i.e., 4-5 years, 6-7 years, 8-9 years, adults), and the interactions among these three variables as our primary fixed effects of interest, with random intercepts by participant ID; the dependent variable was whether participants selected a variety set (1 = variety, 0 = non-variety). This model yielded only a significant main effect of preference such that when participants did not indicate preferring one item to another, they were more likely to select variety ($M = 1.68$, $SD = 1.41$) than when they did indicate preferring one item to another ($M = 0.79$, $SD = 0.96$), $F(1, 785) = 203.80$, $p < .001$, $OR = 13.76$. See Figure 1B for an overview of the proportion of variety selections by preference status and age group; see web appendix 3 for an overview of selections made by preference status, age group, and individual pair; see web appendix 4 for a an additional analyses offering converging evidence, highlighting the influence of preference on variety selections.

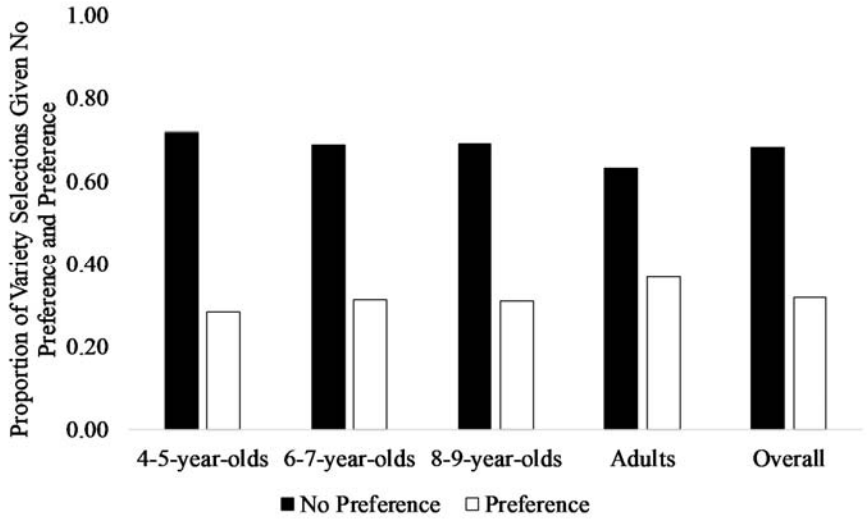


Figure 1B: Children and adults choose more variety when they have no preference.

Preference Strength by Pair Type and Age Group. We next tested whether the degree to which participants indicated preferring one item to another differed by pair type and age group. To do so, we conducted a repeated-measures ANOVA with pair type as the within-participants variable, age group as the between-participants variable, and whether the participant indicated a preference as the dependent measure. Because we had two trials per pair type, scores per pair type ranged from 0 (no preference in both trials) to 2 (preference in both trials). Results revealed only a main effect of pair type, $F(2, 314) = 8.19$, $p < .001$, $\eta_p^2 = .05$. Participants were more likely to display a preference when asked to choose between two healthy foods ($M = 1.42$, $SE = .06$) than when asked to choose between two foods that are either neutral ($M = 1.16$, $SE = .06$) or unhealthy ($M = 1.16$, $SE = .06$) (ps = .001). See Figure 1C for an overview of preference strength by pair type and age group. Though rare, see web appendix 6 for analyses assessing the degree to which participants' choices were inconsistent with their preferences (i.e., showed a reversal).

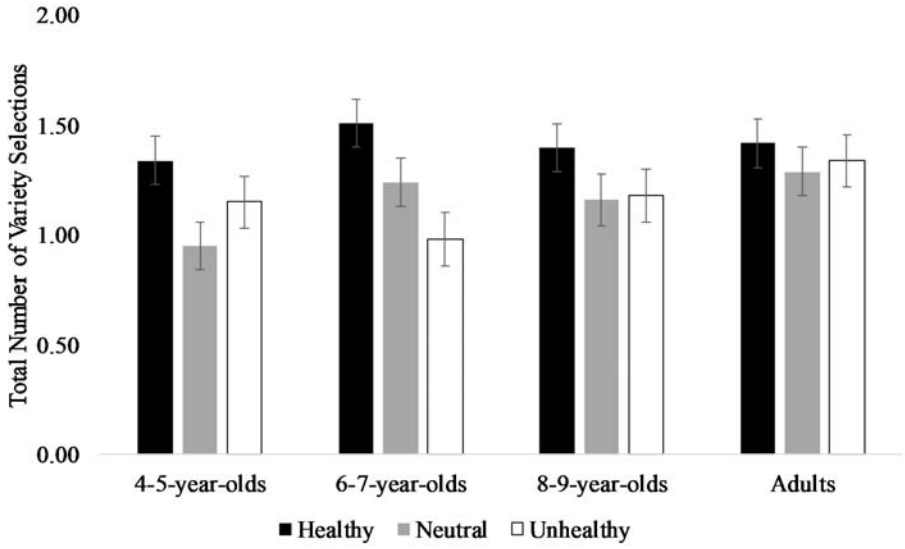


Figure 1C: Children and adults have stronger preferences when choosing between healthy options. Here and below, error bars indicate standard errors.

Taken together, results from Study 1 demonstrate that variety selection differs as a function of initial preference but not age. When participants did not prefer one item to the other, they were more likely to subsequently select a variety set. Participants were also more likely to indicate a preference when choosing between two foods that were healthy versus neutral or unhealthy. In Study 2, we test for these same trends when pairing foods from different categories.

STUDY 2: THE ROLE OF PREFERENCE WHEN CHOOSING FOOD ITEMS ACROSS CATEGORIES

The purpose of this study was to examine whether response patterns observed in Study 1 extend to contexts where food pairs cross categories. In Study 1, foods were paired together by

category (fruits with fruits, chips with chips, etc.). In Study 2, we crossed category boundaries by pairing a cracker with either a fruit or vegetable.[2] Doing so provides a stronger test of whether children's tendency to select variety can be used to promote healthier decision making, as now selecting variety requires selecting a fruit or vegetable.

Participants. Participants included 118 children: four- and five-year-olds (n = 39, M = 5.09 years, SD = 0.51 years, 54% females), six- and seven-year-olds (n = 42, M = 7.02 years, SD = 0.51 years, 50% females, 2% unreported), and eight- and nine-year-olds (n = 37, M = 9.04 years, SD = 0.57 years, 65% females), and 40 adults (M = 19.16 years, SD = 1.17 years, 60% females). See web appendix 2 for race and exclusion information. Participants were recruited and compensated as in Study 1.

Procedure. Recruitment and procedure were the same as that used in Study 1 (see web appendix 7 for a sample trial). The cross-category pairs were: sandwich cracker + carrot, cheese cracker + broccoli, animal cracker + apple slice, and graham cracker + orange slice.

Results and Discussion

Variety Selections by Preference and Age Group. We analyzed the data via a generalized linear model-effects model with preference (whether a participant indicated preferring one item to another in a trial) and age group (i.e., 4-5 years, 6-7 years, 8-9 years, adults), and the interaction between these two variables as our primary fixed effects of interest, with random intercepts by participant ID; the dependent variable was whether participants selected a variety set (1 = variety, 0 = non-variety). This model yielded significant effects of preference, $F(1, 504)$

[2] We did not fully cross the categories healthy, neutral, and unhealthy, because the conceptualization of the food types changed post data collection in response to reviewer feedback. As such, healthy and neutral foods were completely crossed, but not unhealthy foods. We therefore analyzed the data two ways: with all six trials of re-paired foods and with only those four trials pairing healthy and neutral foods from Study 1. We obtain similar results in both methods of analysis.

= 123.69, $p < .001$, $OR = 15.18$, and age group, $F(3, 504) = 5.00$, $p = .002$, which were qualified by a significant interaction involving preference and age group, $F(3, 504) = 6.34$, $p < .001$. Post-hoc analyses revealed that the youngest age group (4-5 years) indiscriminately selected variety irrespective of preference status ($M_{\text{Preference}} = 0.48$, $SD = 0.91$; $M_{\text{No Preference}} = 0.44$, $SD = 0.82$) whereas older children (6-9 years) and adults were more likely to select variety after indicating no preference for either food item (6-7 years: $M_{\text{Preference}} = 0.45$, $SD = 0.71$, $M_{\text{No Preference}} = 0.98$, $SD = 1.18$; 8-9 years: $M_{\text{Preference}} = 0.46$, $SD = 0.90$, $M_{\text{No Preference}} = 0.86$, $SD = 0.89$; Adults: $M_{\text{Preference}} = 0.43$, $SD = 0.75$, $M_{\text{No Preference}} = 1.05$, $SD = 0.93$). We obtained similar results using all six pairs. See Figure 1A for an overview of the proportion of variety selections by preference status and age group; see web appendix 3 for an overview of selections made by preference status, age group, and individual pair; see web appendix 5 for a an additional analyses offering converging evidence, highlighting the influence of preference on variety selections.

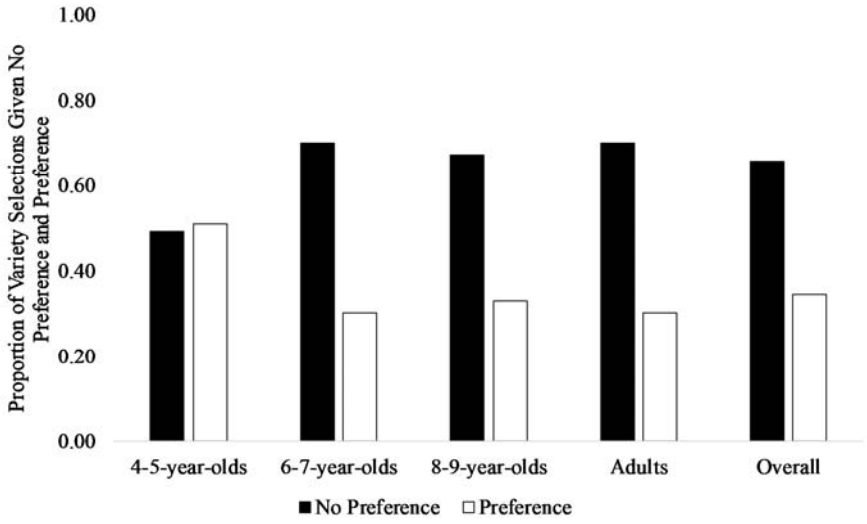


Figure 2A: Older children and adults choose more variety when they have no preference.

Preference Strength by Age Group. We next tested whether the degree to which participants indicated preferring one item to another differed by age group. To do so, we tallied the number of trials in which participants indicated preferring one item to another (scores ranging from 0-4). A one-way ANOVA revealed the degree to which items were preferred did not differ across age groups, $F(3, 154) = 1.19$, $p = .316$, $\eta_p^2 = .02$. Overall, participants indicated a preference in an average of 2.80 trials ($SD = 1.10$). We obtained similar results using all six pairs. See web appendix 6 for an overview of choice reversals by age group.

Taken together, results from Study 2 largely replicate those from Study 1, demonstrating that variety selection largely differs as a function of initial preference. Again, when participants did not prefer one item to the other, they were more likely to select a varied set, even when foods were paired across categories; however, here we observed that our youngest children (4-5 years) did not prefer variety at different rates given preference status. This may reflect a different conceptualization of the food categories in light of items being crossed and/or a more general finding that children in this age range tend to select variety at lower rates (see also Echelbarger and Gelman 2017).

STUDY 3: HOW TIMING OF CHOICE AFFECTS CHILDREN'S VARIETY SEEKING AND HEALTHY FOOD CHOICES

Here, we ask how the way in which food choices are repeated, either simultaneously (choose all snacks in advance) or sequentially (choose a snack each day; Simonson 1990) affects children's variety seeking. The choices included fruits and crackers, allowing us to further test whether variety seeking can increase children's well-being, by leading them to choose more fruits over crackers.

Method

Participants. Participants included 91 children: four- and five-year-olds (n = 38, M = 5.20 years, SD = 0.33 years, 53% females) and six- to nine-year-olds (n = 53, M = 7.75 years, SD = 1.14 years, 49% females), attending the same facility in the midwestern US (see web appendix 7 for additional information regarding recruitment and procedures). We compensated children with the snacks they chose as part of the study, as described below.

Procedure. Children were invited to choose a snack out of six choices: an apple, a banana, a mandarin orange, and individual bags of Cheez-It, Goldfish, and Wheat Thins crackers (see Figure 3A). These snacks contrast healthy (fruits) and less healthy (crackers) items, while avoiding clearly unhealthy items such as sweets and cookies, for ethical reasons.

Children were assigned to one of two conditions: simultaneous or sequential. On the first day of the study, Monday, children in the simultaneous condition chose all five snacks, one snack for each day (Monday–Friday). The experimenter told the children before making each choice which day they were choosing for, and used a separate tray for each selection round to ensure children were able to select up to five of the same item. Afterward, they rank ordered the options and indicated which food items they had tried in the past.

In the sequential condition (Monday–Friday), children chose only one snack each day. On Monday, they ranked ordered the options and indicated which food items they had tried in the past. To assess recall consumption levels, we asked children on Tuesday–Friday, after choosing their snack, if they remembered what they had chosen the day before, as well as if they ate the snack they chose the day prior. We did not ask these questions of children in the simultaneous condition, because they did not have repeated interviews.

Figure 3A. Snack set from which children chose in Study 3.

Results and Discussion

Food-Choice Analysis. We analyzed the effect of condition, age group, and their interaction on the number of different options children chose (ANOVA), whether the child chose five different options or not (logistic regression), and the number of fruits children chosen (ANOVA). First, the number of different foods chosen was higher in the simultaneous (M = 4.16, SE = .15) than the sequential (M = 3.19, SE = .15) condition, $F(1, 87) = 21.39$, $p < .001$, η_p^2 = .20, and higher among the four-and five-year-olds (M = 3.90, SE = .16) than the six- to nine-year-olds (M = 3.45, SE = .14), $F(1, 87) = 4.43$, $p = .038$, η_p^2 = .05); we observed no interaction. Also, children in the simultaneous condition were more likely to choose five different options than those in the sequential condition (.49 vs. .09; β = -1.86, SE = .74, $p = .012$), with no age group or interaction effects. Finally, the number of fruits children chose was higher in the simultaneous (M = 1.87, SE = .15) than in sequential (M = 1.08, SE = .15) condition, $F(1, 87) = 13.16$, $p < .001$, η_p^2 = .13, with no age group or interaction effects. See appendix 7 for additional analyses, including choice reversals and food ranking, where we report a main effect of food type (children ranked crackers higher than fruits) for the latter, discuss results involving food

trial (no effect of age group or condition), and report recall and consumption levels, as reported by children in the sequential condition.

GENERAL DISCUSSION

Across three studies we examined children's variety selections to discern when they adopt adult-like patterns of variety seeking, and to inform our understanding of how variety can be used to promote better well-being in childhood. Studies 1 and 2 found that four- to nine-year-olds (and adults) generally diversified their food selections, particularly when they had no established preference for one item over another, though crossing food categories attenuated this effect for our youngest children (4-5 years). Study 3 revealed that four- to nine-year-old children were more likely to diversify their food selections when asked to select items all at once rather than across several days, and as a result chose more fruits. Together, these results contribute to our broader understanding of variety seeking in childhood and point to ways that variety can be leveraged to help children engage in more optimal decision making.

When considering children's preference for variety when they have no established preference for either of the individual items, introducing children to new foods in pairs may be beneficial. First, this approach increases the likelihood that children will like at least one of the food items offered. Second, experimenting with food in this way may have downstream consequences for later food exploration, leading to a diet that is overall more varied. Subsequent work is needed to test this possibility. Given that exposure to a wider variety of foods is associated with lower levels of food neophobia in early adulthood (Nicklaus et al. 2005), this approach could leverage children's preference for, and added value placed on, variety.

When children do have a preference, we may look to timing as a strategy to increase

variety and healthier selections. In Study 3, children who chose simultaneously chose more varied baskets that included more fruits than did those who chose sequentially. Thus, children are more likely to diversify their selections, and perhaps even try new things, when making decisions for the week in advance. Though we only tested children's selections of food, children's tendency to diversify their selections given simultaneous timing could promote more diverse selections of activities as well. For example, children may be more likely to diversify their selected activities (e.g., swimming, going to the library, playing video games) when planning activities for the week as opposed to each day. This empirical question requires additional work.

Altogether, our results suggest variety can be used as a tool to promote greater well-being in childhood. By examining the contexts in which variety is preferred (and why) as well as factors influencing variety selections, we have provided a step toward better understanding the efficacy of this decision strategy.

References

Albuquerque, Paulo, Merrie Brucks, Margaret C. Campbell, Kara Chan, Michal Maimaran, Anna R. McAlister, and Sophie Nicklaus (2018), "Persuading Children: A Framework for Understanding Long-Lasting Influences on Children's Food Choices," *Customer Needs and Solutions*, 5 (1/2), 38-50.

Bahn, Kenneth D. (1986), Cognitively and Perceptually Based Judgments in Children's Brand Discriminations and Preferences," *Journal of Business and Psychology*, *4* (2), 183-197.

Callanan, Maureen A., and Ellen M. Markman (1982), "Principles of Organization in Young Children's Natural Language Hierarchies," *Child Development*, *53* (4), 1093-1101.

Capon, Noel, and Deanna Kuhn (1980), "A Developmental Study of Consumer Information-Processing Strategies," *Journal of Consumer Research*, *7* (3), 225-233.

Echelbarger, Margaret, and Susan A. Gelman (2017), "The Value of Variety and Scarcity across Development," *Journal of Experimental Child Psychology*, 156, 43-61.

Fisher, Anna V., Karrie E. Goodwin, Bryan J. Matlen, and Layla Unger (2015), "Development of Category-Based Induction and Semantic Knowledge," *Child Development*, *86* (1), 48-62.

John, Deborah Roedder (1999), "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research," *Journal of Consumer Research*, 26 (3), 183-213.

Just, David R., Jesse Lund, and Joseph Price (2012), "The Role of Variety in Increasing the Consumption of Fruits and Vegetables among Children," *Agricultural and Resource Economics Review,* 41 (1), 72-81.

Kahn, Barbara E. (1995), "Consumer Variety-Seeking among Goods and Services: An Integrative Review," *Journal of Retailing and Consumer Services*, 2 (3), 139-48.

Maimaran, Michal, and Ayelet Fishbach (2014), "If It's Useful and You Know It, Do You Eat? Preschoolers Refrain from Instrumental Food," *Journal of Consumer Research,* 41 (3), 642-55.

Maimaran, Michal, and Yuval Salant (2019), "The Effect of Limited Availability on Children's Consumption, Engagement, and Choice Behavior," *Judgment and Decision Making,* 14 (1), 72-79.

Mittelman, Mauricio, Eduardo B. Andrade, Amitava Chattopadhyay, and C. Miguel Brendl (2014), "The Offer Framing Effect: Choosing Single versus Bundled Offerings Affects Variety Seeking," *Journal of Consumer Research*, 41 (4), 953-64.

Nicklaus, Sophie, Vincent Boggio, Claire Chabanet, and Sylvie Issanchou (2005), "A Prospective Study of Food Variety Seeking in Childhood, Adolescence and Early Adult Life," *Appetite*, 44 (3), 289-97.

Nguyen, Simone P., and Gregory L. Murphy (2003), "An Apple is More Than Just a Fruit: Cross-Classification in Children's Concepts," *74* (6), 1783-1806.

Rakison, David H., and Lisa M. Oakes (Eds.) (2003), "Early Category and Concept Development: Making Sense of the Blooming, Buzzing Confusion," New York: Oxford University Press.

Ratner, Rebecca K., and Barbara E. Kahn (2002), "The impact of Private versus Public Consumption on Variety-Seeking Behavior," *Journal of Consumer Research*, 29 (2), 246-57.

Ratner, Rebecca K., Barbara E. Kahn, and Daniel Kahneman (1999), "Choosing Less-Preferred Experiences for the Sake of Variety," *Journal of Consumer Research*, 26 (1), 1-15.

Redden, Joseph P. (2008), "Reducing Satiation: The Role of Categorization Level," *34* (5), 624-

634.
Robinson, Thomas, N., Dina L. G. Borzekowski, Donna M. Matheson, and Helena C. Kraemer (2007), “Effects of Fast Food Branding on Young Children’s Taste Preferences,” *Archives of Pediatrics and Adolescent Medicine*, *161* (8), 792-797.
Roe, Liane S., Jennifer S. Meengs, Leann L. Birch, and Barbara J. Rolls (2013), "Serving a Variety of Vegetables and Fruit as a Snack Increased Intake in Preschool Children," *The American Journal of Clinical Nutrition*, 98 (3), 693-99.
Roedder, Deborah L., Brian Sternthal, and Bobby J. Calder (1983), “Attitude-Behavior Consistency in Children’s Responses to Television Advertising,” *Journal of Marketing Research*, *20* (4), 337-349.
Simonson, Itamar (1990), "The Effect of Purchase Quantity and Timing on Variety-Seeking Behavior," *Journal of Marketing Research*, 27 (2), 150-62.
Ward, Scott, Daniel B. Wackman, and Ellen Wartella (1977), “How Children Learn to Buy,” Beverly Hills, CA: Sage Publications.
Wardle, Jane, and Gail Houn (2000), “An Experimental Investigation of the Influence of Health Information on Children’s Taste Preferences,” *Health Education Research*, *15* (1), 39-44.
Waxman, Sandra R., Elizabeth B. Lynch, K. Lyman Casey, and Leslie Baer (1997), “Setters and Samoyeds: The Emergence of Subordinate Level Categories as a Basis for Inductive Inference in Preschool-Age Children,” *Developmental Psychology*, *33* (6), 1074-1090.

Web Appendix 1: Warm–Up Task and Pretesting Food Items (Study 1 Pretest)

Warm-Up Task. Prior to completing the main experiment, children first completed an easy warm-up task designed to ensure they were comfortable expressing their preferences. In each of the two warm-up trials (order randomized), we asked children to indicate which of two items they preferred, or whether they liked them about the same (e.g., two pictures of the same pencil: one whole, one broken).

Pretest. A separate group of eighteen four- to five-year-olds (M = 5.07 years, SD = 0.51 years, 33% females) participated in a pretest designed to identify which food items were familiar to young children. Parents identified their children as White (61%), Asian (11%), and Multiracial (6%); the remaining parents did not report their child's race.

We pretested 16 pictures of food items to select a set of 12 items that even the youngest children (4-5 years) could correctly identify by sight. We selected those items that had the highest familiarity, as indicated by children either correctly labeling the item, or agreeing with a correct label provided by the experimenter. Familiarity of the 12 items included in Study 1A ranged from 83%–100% (M = 94%, SD = 5%).

Web Appendix 2: Race and Exclusion Information of Participants

Study 1. Parents identified their children as White (58%), Black (3%), Asian (8%), Multiracial (11%), and other (5%); the remaining parents did not identify their children's race. Adults identified themselves as White (54%), Black (2%), Asian (32%), Multiracial (5%), and other (5%); the remaining adults did not report their race.

To children were excluded: one due to parental interference and one due to experimenter error.

Study 2. Parents identified their children as White (54%), Black (4%), Asian (8%), Multiracial (8%), and other (6%); the remaining parents did not identify their children's race. Adults identified themselves as White (58%), Black (3%), Asian (20%), Multiracial (5%), and other (8%); the remaining adults did not report their race.

Nine additional children were excluded: five due to parental interference, two due to comprehension issues, and two due to experimenter error.

Study 3. We did not collect race information in this study; no children were excluded.

Web Appendix 3: Selections by Age Group, Preference Status, and Individual Pair for Study 1 and Study 2

Tables 1 and 2 include information regarding the selections for each individual pair given a participant's preference status and age group. In each case, the denominator reflects the number of participants eligible for each analysis; the numerator reflects the number of participants who made a particular choice (i.e., indicated having a preference).

For example, consider the pair "Carrot + Broccoli" for four- and five-year-olds. The "Have Preference" column reflects the number and percentage of total participants in that age group who indicated preferring one of the food items to the other. Thus, percentages calculated for "Have Preference" and "No Preference" reflect the number of participants who did (n = 31) and did not (n = 10) have a preference in this trial given the number of participants in that age group (n = 41). The other columns reflect what participants subsequently chose conditioned on having or not having a preference. In this example, approximately 23% (7/31) of participants who indicated preferring either the carrot or broccoli then chose a variety set containing one piece of broccoli and one carrot. By contrast, approximately 71% (22/31) of participants who

indicated having a preference chose a set containing two of their preferred food item, and approximately 7% (2/31) chose a set containing two of their non-preferred item (which we consider choice reversals). Lastly, 60% (6/10) of children who indicated not having a preference for either food item subsequently chose a variety set containing one piece of broccoli and one carrot, and the remaining 40% (4/10) chose a set containing two of the same food item.

Pairs denoted with an asterisk include those that do not contain food items from different categories as described in Study 1.

Web Appendix 4: Additional Study 1 Analyses (Converging Evidence)

Variety Selections on No-Preference Trials. We calculated the proportion of trials in which participants selected varied sets after first indicating they had no preference for one of the two food items the pair comprised. To be included in this analysis, participants must have indicated having no preference on at least one of two trials per pair type (n = 41; 25% of participants). A repeated-measures ANOVA with pair type (healthy, neutral, unhealthy) as the within-participants variable, age group (4-5 years, 6-7 years, 8-9 years, adults) as the between-participants variable and the number of varied sets selected as the dependent measure revealed these rates did not differ by pair type (p = .528) or age group (p = .393).

We next tested whether the proportion of trials in which participants selected varied sets after indicating no preference for either food item differed from chance (chance = .33 given three sets from which to choose per trial). This analysis was completed by pair type to include as many participants as possible (i.e., not restricting the sample to only include participants who indicating having no preference in at least one trial per pair type as done above). In this analysis, participants selected each varied set of each pair type (healthy, neutral, unhealthy) significantly

above chance (Healthy: $n = 75$, $M = 0.72$, $SE = .05$; Neutral: $n = 104$, $M = .78$, $SE = .04$; Unhealthy: $n = 102$, $M = 0.74$, $SE = .04$; ps $< .001$).

Variety Selections on Preference Trials. We next calculated the proportion of trials in which participants selected varied sets after first indicating a preference for one of the two food items the pair comprised. To be included in this analysis, participants must have indicated having a preference in at least one of two trials per pair type ($n = 41$; 49% of participants). A repeated-measures ANOVA with pair type (healthy, neutral, unhealthy) as the within-participants variable, age group (4-5 years, 6-7 years, 8-9 years, adults) as the between-participants variable, and the number of varied sets selected as the dependent measure revealed these rates differed by only pair type, $F(2, 146) = 6.67$, $p = .002$, $\eta_p^2 = .08$. After first indicating a preference for one of the two items the set comprised, participants were more likely to do so when that set included unhealthy ($M = 0.40$, $SE = .06$) versus healthy ($M = 0.22$, $SE = .04$) and neutral ($M = 0.19$, $SE = .04$) items (ps $\leq .017$).

We next tested whether the proportion of trials in which participants selected varied sets after indicating a preference for one of the two food items differed from chance (chance = .33 given three sets from which to choose per trial). This analysis was completed by pair type to include as many participants as possible (i.e., not restricting the sample to only include participants who indicating having a preference on at least one trial per pair type as done above). In this analysis, participants selected varied sets of healthy ($n = 142$, $M = 0.19$, $SE = .03$) and neutral ($n = 130$, $M = 0.20$, $SE = .03$) items below chance (ps $< .001$); varied sets of unhealthy items ($n = 96$, $M = 0.38$, $SE = .05$) were selected at chance ($p = .297$).

Web Appendix 5: Additional Study 2 Analyses (Converging Evidence)

Variety Selections on No-Preference Trials. We calculated the proportion of trials in which participants selected varied sets after first indicating they had no preference for one of the two food items the pair comprised. To be included in this analysis, participants must have indicated having no preference on at least one of the four trials (n = 124; 79% of participants). A one-way ANOVA with age group (4-5 years, 6-7 years, 8-9 years, adults) as the between-participants variable and the number of varied sets selected as the dependent measure revealed these rates differed by age group, $F(3, 120) = 7.80$, $p < .001$, $\eta_p^2 = .16$. Setting the alpha to .013 (.05/4 age groups) to account for multiple comparisons, post-hoc analyses revealed that four- to five-year-olds (n = 25, M = 0.21, SE = .05) and six- to seven-year-olds (n = 34, M = 0.33, SE = .05) selected varied sets significantly less than adults (n = 33, M = 0.60, SE = .06; ps ≤ .005). Eight- and nine-year-olds (n = 32, M = 0.42, SE = .06) did not differ from any group. Similar results are obtained when we analyze data from all six trials.

We next tested whether the proportion of trials in which participants selected varied sets after indicating no preference for either food item differed from chance (chance = .33 given three sets from which to choose per trial). In this analysis, only adults selected varied sets significantly above chance ($p < .001$), whereas the four- and five-year-olds selected varied sets significantly below chance ($p = .032$). Six- to nine-year-olds did not differ from chance. Similar results are obtained when we analyze data from all six trials.

Variety Selections on Preference Trials. We calculated the proportion of trials in which participants selected varied sets after first indicating they had no preference for one of the two food items the pair comprised. To be included in this analysis, participants must have indicated having no preference in at least one of the four trials (n = 154; 98% of participants). A one-way

ANOVA with age group (4-5 years, 6-7 years, 8-9 years, adults) as the between-participants variable and the number of varied sets selected as the dependent measure revealed these rates did not differ by age group (p = .829). The same result is obtained when we analyze data from all six trials.

We next tested whether the proportion of trials in which participants selected varied sets after indicating no preference for either food item differed from chance (chance = .33 given 3 sets from which to choose per trial). In this analysis, participants selected varied sets significantly below chance, $t(151) = 7.93$, $p < .001$. The same result is obtained when we analyze data from all six trials.

Web Appendix 6: Study 1 and Study 2 Choice Reversals

Study 1. Although not the focus of the paper, measuring preferences and choice allows us to test whether we obtain age differences in the degree to which participants' choices were inconsistent with their preferences (i.e., showed a reversal). That is, given a preference for one item over another, did the number of trials in which participants selected non-varied sets of their non-preferred item differ by age group? To do so, we tallied the number of trials in which a participant indicated preferring one of the two items and then chose a non-varied set of the non-preferred item. For example, the participant indicated preferring A to B but chose set BB. Though overall choice reversals were rare, the one-way ANOVA revealed a significant effect of age group, $F(3, 157) = 2.93$, $p = .035$, $\eta_p^2 = .05$. Post-hoc analyses revealed the youngest children (4-5 years; $M = 0.37$, $SE = .15$, 11% of trials overall) displayed more choice reversals than older children (6-7 years: $M = 0.17$, $SE = .09$, 5% of trials overall; 8-9 years: $M = 0.03$, $SE = .03$, 1%

of trials overall) and adults (M = 0.05, SE = .03, 1% of trials overall) (ps ≤ .003). See Figure 1 for an overview of choice reversals by age group.

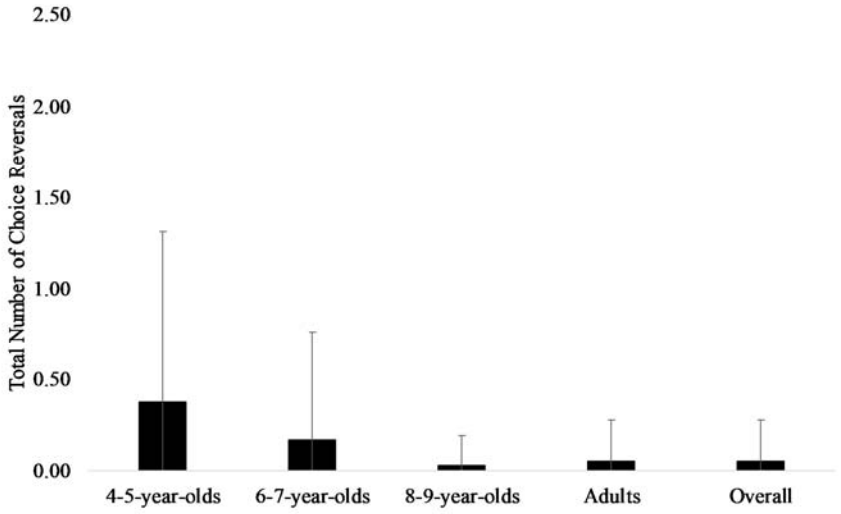


Figure 1: Children ages 4-5 display more choice reversals than older children and adults.

Study 2. We tested whether the degree to which participants' choices were inconsistent with their preferences differed by age, as in Study 1. Though choice reversals were again rare, the one-way ANOVA revealed a significant effect of age group, $F(3, 154) = 8.54$, $p < .001$, $\eta_p^2 = .14$. Post-hoc analyses revealed the youngest children (4-5 years; M = 0.72, SE = .20, 17% of trials overall) displayed more choice reversals than older children (6-7 years: M = 0.10, SE = .05, 4% of trials overall; 8-9 years: M = 0.08, SE = .05, 3% of trials overall) and adults (M = 0.08, SE = .06, 3% of trials overall) (ps ≤ .001). We obtained similar results using all six pairs. See Figure 2 for an overview of choice reversals by age group.

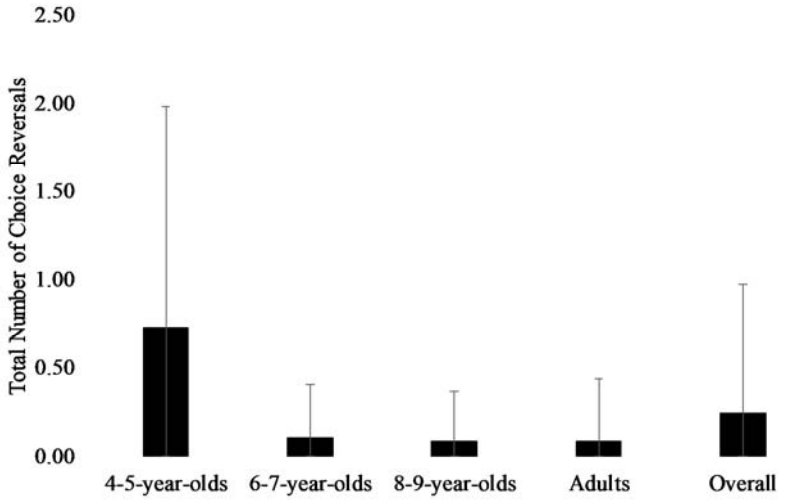
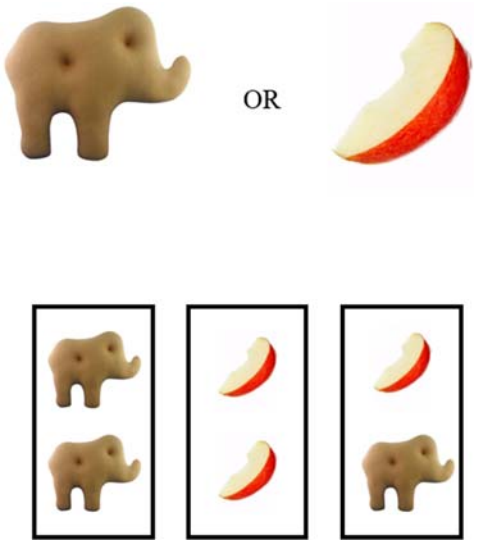


Figure 2: Children ages 4-5 display more choice reversals than older children and adults.

Web Appendix 7: Sample Study 2 Trial



Web Appendix 7: Study 3 Recruitment and Procedure Notes

Recruitment. The 4- and 5-year-olds were enrolled in two classrooms in the preschool program and the 6- to 9-year-olds were enrolled in four classrooms in an after-school program in the same facility. The six- and seven-year-old age group included 33 children, and the eight- and nine-year-old age group included 20. We combine these age groups in the analysis due to the small sample of the latter group. Results are similar when analyzing with the three age groups. Further, the data for the four- and five-year-old group were collected on April 2019, and the data for the six- to nine-year-old group were collected on October 2019. The youngest children also chose among temporary tattoos, which are not discussed here.

Procedure. Due to absences in the six- to nine-year-old group, four children made their choice in the simultaneous condition on Tuesday and four on Wednesday. In the sequential condition, one child started her choices on Tuesday, and 15 children made their fifth choice on the following Monday because they were absent one day during the week of data collection.

To minimize interruption to the class schedule and the likelihood of children sharing information with each other about the different conditions, with few exceptions due to absences, we assigned all children in a given classroom either to the simultaneous or sequential condition.

In both conditions, we thanked children at the end of the session. They then put the snacks they received in their locker or backpack and returned to their classroom. Children from the simultaneous condition put all snacks in their locker on Monday, and children from the sequential condition put a snack in their locker every day.

Web Appendix 8: Additional Study 3 Analyses

Food Choice Analysis. Consistent with the idea that simultaneous choice increases the likelihood of choosing fruits, we find children in the simultaneous condition were more likely to choose bananas than those in the sequential condition ($M_{simultaneous}$ = .70, *SE* = .08, $M_{sequential}$ = .25, *SE* = .07), $F(1, 87) = 15.37$, $p < .001$, $\eta_p^2 = .15$, and less likely to choose Cheez-It crackers ($M_{simultaneous}$ = 1.13, *SE* = .12, $M_{sequential}$ = 1.89, *SE* = .18), $F(1, 87) = 9.98$, $p = .002$, $\eta_p^2 = .10$. The effect on choosing Cheez-It crackers was further qualified by an interaction with age, $F(1, 87) = 5.88$, $p = .017$, $\eta_p^2 = .06$, such that the effect of condition was stronger among the six- to nine-year-olds ($M_{simultaneous}$ = 1.00, *SE* = .17, $M_{sequential}$ = 2.20, *SE* = .27), $t(87) = 4.32$, $p < .001$, than the 4-5 years ($M_{simultaneous}$ = 1.32, *SE* = .23, $M_{sequential}$ = 1.47, *SE* = .21). The manipulation did not significantly affect individual choice of other food items.

Food Ranking. In a repeated-measures ANOVA with average food ranking of the fruits and crackers as the repeated measure, and age group, condition, and their interaction as the independent variables, we find no effect of condition but a significant effect of food type, such that overall children ranked crackers higher than fruits (Crackers: *M* = 2.81, *SE* = .08; Fruits: *M* = 3.74, *SE* = .10; 1 = most preferred, 6 = least preferred), $F(1, 84) = 49.42$, $p < .001$, $\eta_p^2 = .37$. We additionally find a significant interaction involving age group and food type, $F(1, 84) = 7.96$, $p = .006$, $\eta_p^2 = .09$, such that children across groups ranked fruits similarly (4-5 years: *M* = 3.62, *SE* = .16; 6-9 years: *M* = 3.86, *SE* = 13), whereas crackers were ranked differently (4-5 years: *M* = 3.07, *SE* = .12; 6-9 years: *M* = 2.55, *SE* = .10). We also observed a three-way interaction involving food type, age group, and condition, $F(1, 84) = 4.17$, $p = .044$, $\eta_p^2 = .05$, such that four- and five-year-olds ranked crackers lower in the sequential (*M* = 3.23, *SE* = 17) versus simultaneous (*M* = 2.90, *SE* = .18) condition ($p = .045$), whereas they ranked the fruits similarly

across conditions. By contrast, the six- to nine-year-olds ranked the fruits lower in the sequential (M = 4.09, SE = .19) versus simultaneous (M = 3.62, SE = .18) condition (p = .002), whereas they ranked the crackers similarly. No other significant effects or interactions were obtained.

Trying Foods. We found no differences in the frequency, as reported by children, of trying each food between conditions or among age groups, and all snacks were tried by most children (87% and up), except for Wheat Thins, which only 37% of the children tried. The number of different foods selected was not associated with the number of foods children reported trying.

Choice Reversals. To test whether age group or condition affected children's tendency to choose a food item they ranked low, we tallied all cases in which a child chose a food they ranked low (4, 5, or 6 out of 6, where higher numbers indicate less preferred foods). In an ANOVA with age group, condition, and their interaction as the independent variables, we find only a main effect of age, such that, on average, four- and five-year-olds chose more food items they ranked low than did six- to nine-year-olds, consistent with the choice-reversal results reported in Studies 1 and 2 (4-5 years: M = 1.29, SE = .15; 6-9 years: M = 0.85, SE = .12), $F(1, 87) = 5.97$, p = .017, η_p^2 = .06.

Recall and Usage Levels. Only children in the sequential condition were interviewed about usage and recall level, because we did not have repeat interviews with the children in the simultaneous condition. The majority of the children correctly recalled what they chose (88%–93%, depending on the day) and consumed the snack they chose (86%–88%, depending on the day).

Table 1. Overview of selections by age group, preference status, and individual pair for Study 1. Includes *n*s for each selection type.

		4-5 years						
Pair Type	**Pair**	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
"Healthy"	Carrot + Broccoli	31/41 = 75.61%	7/31 = 22.58%	22/31 = 70.97%	2/31 = 6.45%	10/41 = 24.39%	6/10 = 60.00%	4/10 = 40.00%
	Apple + Orange	24/41 = 58.54%	5/24 = 20.83%	12/24 = 50.00%	7/24 = 29.17%	17/41 = 41.46%	11/17 = 64.71%	6/11 = 35.29%
"Neutral"	Animal Cracker + Graham Cracker	18/41 = 43.90%	7/18 = 38.89%	9/18 = 50.00%	2/18 = 11.11%	23/41 = 56.10%	16/23 = 69.57%	7/23 = 30.43%
	Sandwich Cracker + Cheese Cracker	21/41 = 51.22%	1/21 = 4.76%	18/21 = 85.71%	2/21 = 9.52%	20/41 = 48.78%	14/20 = 70.00%	6/20 = 30.00%
"Unhealthy"	Chip + Dorito	31/41 = 75.61%	5/31 = 16.13%	26/31 = 83.87%	0/31 = 0.00%	10/41 = 24.39%	6/10 = 60.00%	4/10 = 40.00%
	Gummy + Marshmallow	16/41 = 39.02%	3/16 = 18.75%	11/16 = 68.75%	2/16 = 12.50%	25/41 = 60.98%	18/25 = 72.00%	7/25 = 28.00%
		6-7 years						
Pair Type	**Pair**	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
"Healthy"	Carrot + Broccoli	32/41 = 78.05%	3/32 = 9.38%	28/32 = 87.50%	1/32 = 3.13%	9/41 = 21.95%	7/9 = 77.78%	2/9 = 22.22%
	Apple + Orange	30/41 = 73.17%	5/30 = 16.67%	22/30 = 73.33%	3/30 = 10.00%	11/41 = 26.83%	8/11 = 72.73%	3/11 = 27.27%
"Neutral"	Animal Cracker + Graham Cracker	23/41 = 56.10%	6/23 = 26.09%	16/23 = 69.57%	1/23 = 4.35%	18/41 = 43.90%	12/18 = 66.67%	6/18 = 33.33%
	Sandwich Cracker + Cheese Cracker	28/41 = 68.29%	6/28 = 21.43%	22/28 = 78.57%	0/28 = 0.00%	13/41 = 31.71%	10/31 = 76.92%	3/13 = 23.08%
"Unhealthy"	Chip + Dorito	24/41 = 58.54%	5/24 = 20.83%	18/24 = 75.00%	1/24 = 4.17%	17/41 = 41.46%	14/17 = 82.35%	3/17 = 17.65%
	Gummy + Marshmallow	16/41 = 39.02%	6/16 = 37.50%	9/16 = 56.25%	1/16 = 6.25%	25/41 = 60.98%	17/25 = 68.00%	8/25 = 32.00%

Table 1 continued.

		8-9 years						
Pair Type	**Pair**	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
"Healthy"	Carrot + Broccoli	28/38 = 73.68%	4/28 = 14.29%	24/28 = 85.71%	0/28 = 0.00%	10/38 = 26.32%	6/10 = 60.00%	4/10 = 40.00%
	Apple + Orange	25/38 = 65.79%	4/25 = 16.00%	21/25 = 84.00%	0/25 = 0.00%	13/38 = 34.21%	10/13 = 76.92%	3/13 = 23.08%
"Neutral"	Animal Cracker + Graham Cracker	21/38 = 55.26%	3/21 = 14.29%	18/21 = 85.71%	0/21 = 0.00%	17/38 = 44.74%	14/17 = 82.35%	3/17 = 17.65%
	Sandwich Cracker + Cheese Cracker	23/38 = 60.53%	8/23 = 34.78%	15/23 = 65.22%	0/23 = 0.00%	15/38 = 39.47%	14/15 = 93.33%	1/15 = 6.67%
"Unhealthy"	Chip + Dorito	24/38 = 63.16	5/22 = 22.73%	19/24 = 86.36%	0/24 = 0.00%	14/38 = 36.84%	9/14 = 64.29%	5/14 = 35.71%
	Gummy + Marshmallow	21/38 = 55.26%	6/21 = 28.57%	14/21 = 66.67%	1/21 = 4.76%	17/38 = 44.74%	14/17 = 82.35%	3/17 = 17.65%
		Adults						
Pair Type	**Pair**	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
"Healthy"	Carrot + Broccoli	27/41 = 65.85%	10/27 = 37.04%	16/27 = 59.26%	1/27 = 3.70%	14/41 = 34.15%	12/14 = 85.71%	2/14 = 14.29%
	Apple + Orange	31/41 = 75.61%	6/31 = 19.35%	25/31 = 80.65%	0/31 = 0.00%	10/41 = 24.39%	8/10 = 80.00%	2/10 = 20.00%
"Neutral"	Animal Cracker + Graham Cracker	26/41 = 63.41%	6/26 = 23.08%	19/26 = 73.08%	1/26 = 3.85%	15/41 = 36.59%	13/15 = 86.67%	2/15 = 13.33%
	Sandwich Cracker + Cheese Cracker	27/41 = 65.85%	3/27 = 11.11%	24/27 = 88.89%	0/27 = 0.00%	14/41 = 34.15%	12/14 = 85.71%	2/14 = 14.29%
"Unhealthy"	Chip + Dorito	22/41 = 53.66%	5/22 = 22.73%	17/22 = 77.27%	0/22 = 0.00%	19/41 = 46.34%	6813/19 = .42%	6/19 = 31.58%
	Gummy + Marshmallow	33/41 = 80.49%	8/33 = 24.24%	25/33 = 75.76%	0/23 = 0.00%	8/41 = 19.51%	7/8 = 87.50%	1/8 = 12.50%

Table 2. Overview of selections by age group, preference status, and individual pair for Study 2. Includes *n*s for each selection type.

	4-5 years						
Pair	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
Chip + Gummy*	25/39 = 64.10%	6/25 = 24.00%	15/25 = 60.00%	4/25 = 16.00%	14/39 35.90%	6/14 = 42.86%	8/14 = 57.14%
Dorito + Marshmallow*	24/39 = 61.54%	6/24 = 25.00%	13/24 = 54.17%	5/24 = 20.83%	15/39 = 38.46%	7/15 = 46.67%	8/15 = 53.33%
Sandwich Cracker + Carrot	26/39 = 66.67%	4/26 = 15.38%	14/26 = 53.85%	8/26 = 30.77%	13/39 = 33.33%	8/13 = 61.54%	5/13 = 38.46%
Cheese Cracker + Broccoli	31/39 = 79.49%	3/31 = 9.68%	24/31 = 77.42%	4/31 = 12.90%	8/39 = 20.51%	3/8 = 37.50%	5/8 = 62.50%
Animal Cracker + Apple	24/39 = 61.54%	7/24 = 29.17%	13/24 = 54.17%	4/24 = 16.67%	15/39 = 38.46%	4/39 = 26.67%	11/39 = 73.33%
Graham Cracker + Orange	29/39 = 74.36%	5/29 = 17.24%	21/29 = 72.41%	3/29 = 10.34%	10/39 = 25.64%	2/10 = 20.00%	8/10 = 80.00%
	6-7 years						
Pair	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
Chip + Gummy*	24/42 = 57.14%	7/24 = 29.17%	17/24 = 70.83%	0/24 = 0.00%	18/42 = 42.86%	14/18 = 77.78%	4/18 = 22.22%
Dorito + Marshmallow*	17/42 = 40.48%	4/17 = 23.53%	13/17 = 76.47%	0/17 = 0.00%	24/42 = 59.52%	17/24 = 68.00%	8/24 = 32.00%
Sandwich Cracker + Carrot	32/42 = 76.19%	3/32 = 9.38%	27/32 = 84.38%	2/32 = 6.25%	10/42 = 23.81%	9/10 = 90.00%	1/10 = 10.00%
Cheese Cracker + Broccoli	29/42 = 69.05%	5/29 = 17.24%	24/29 = 82.76%	0/29 = 0.00%	13/42 = 30.95%	9/13 = 69.23%	4/13 = 30.77%
Animal Cracker + Apple	27/42 = 64.29%	8/27 = 29.63%	19/27 = 70.37%	0/27 = 0.00%	9/42 = 21.43%	7/9 = 77.78%	2/9 = 22.22%
Graham Cracker + Orange	24/42 = 57.14%	3/24 = 12.50%	19/24 = 79.17%	2/24 = 8.33%	18/42 = 42.86%	15/18 = 83.33%	3/18 = 16.67%

*Pairs denoted with an asterisk include those that do not contain food items from different categories as described in Study 1.

Table 2 continued.

	8-9 years						
Pair	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**	**CHOICE: Have Preference + Choose Variety**
Chip + Gummy*	21/37 = 56.76%	5/21 = 23.81%	16/21 = 76.19%	0/21 = 0.00%	16/37 = 43.24%	13/16 = 81.25%	3/16 = 18.75%
Dorito + Marshmallow*	20/37 = 54.05%	7/20 = 35.00%	13/20 = 65.00%	0/20 = 0.00%	17/37 = 45.95%	14/17 = 82.35%	3/17 = 17.65%
Sandwich Cracker + Carrot	26/37 = 70.27%	5/26 = 19.23%	21/26 = 80.77%	0/26 = 0.00%	11/37 = 29.73%	8/11 = 72.73%	3/11 = 27.27%
Cheese Cracker + Broccoli	31/37 = 83.78%	5/31 = 16.13%	24/31 = 77.42%	2/31 = 6.45%	6/37 = 16.22%	5/6 = 83.33%	1/6 = 16.67%
Animal Cracker + Apple	28/37 = 75.68%	5/28 = 17.86%	22/28 = 78.57%	1/28 = 3.57%	9/37 = 24.32%	7/37 = 77.78%	2/37 = 22.22%
Graham Cracker + Orange	24/37 = 64.86%	2/24 = 8.33%	22/24 = 91.67%	0/24 = 0.00%	13/37 = 35.14%	12/13 = 92.31%	1/13 = 7.69%
	Adults						
Pair	**Have Preference**	**CHOICE: Have Preference + Choose Variety**	**CHOICE: Have Preference + Choose Preference**	**CHOICE: Have Preference + Choose Non-Preference**	**No Preference**	**CHOICE: No Preference + Choose Variety**	**CHOICE: No Preference + Choose Non-Variety**
Chip + Gummy*	29/40 = 72.50%	6/29 = 20.69%	23/29 = 79.31%	0/29 = 0.00%	11/40 = 27.50%	9/11 = 81.82%	2/11 = 18.18%
Dorito + Marshmallow*	31/40 = 77.50%	2/31 = 6.45%	29/31 = 93.55%	0/31 = 0.00%	9/40 = 22.50%	7/9 = 77.78%	2/9 = 22.22%
Sandwich Cracker + Carrot	26/40 = 65.00%	5/26 = 19.23%	19/26 = 73.08%	2/26 = 7.69%	14/40 = 35.00%	14/14 = 100.00%	0/14 = 0.00%
Cheese Cracker + Broccoli	29/40 = 72.50%	4/29 = 13.79%	25/29 = 86.21%	0/29 = 0.00%	11/40 = 27.50%	7/11 = 63.64%	4/11 = 36.36%
Animal Cracker + Apple	30/40 = 75.00%	4/30 = 13.33%	26/30 = 86.67%	0/30 = 0.00%	10/40 = 25.00%	9/10 = 90.00%	1/10 = 10.00%
Graham Cracker + Orange	26/40 = 65.00%	4/26 = 15.38%	21/26 = 80.77%	1/26 = 3.85%	14/40 = 35.00%	12/14 = 85.71%	2/14 = 14.29%

*Pairs denoted with an asterisk include those that do not contain food items from different categories as described in Study 1.