American Psychological Association

Journal of Experimental Psychology: General

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0096-3445/18/$12.00

2018, Vol. 147, No. 10, 1521–1530
http://dx.doi.org/10.1037/xge0000469

Social Influence Shifts Valuation of Appetitive Cues in Early Adolescence and Adulthood

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Other people can profoundly affect one's opinions and decisions. In the current study, we compared the effects of peer influence on responses to a primary reward—food—in both young adolescents and adults. Food is critical for survival, and in addition to its rewarding properties, habits and practices surrounding eating are heavily influenced by social and cultural norms. To address the impact of peer influence on food valuations, young adolescents ages 10–14 and young adults ages 18–22 rated the desirability of foods before and after seeing peer opinions about those foods. We then compared the degree to which participants changed their ratings of food desirability as a function of the type of social information received (e.g., peers liking a food more or less than did the participant). We found that all participants' ratings conformed to the peer ratings and that adolescents had less stable valuations across all conditions over time. These results provide evidence for the effectiveness of peer influence in shifting valuations of appetitive stimuli and can inform interventions aimed at improving healthy eating choices.

Keywords: conformity, adolescence, reward, social influence, food

Supplemental materials: http://dx.doi.org/10.1037/xge0000469.supp

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For better or for worse, the opinions of other people shape one's beliefs and actions. This phenomenon—known as social influence—has been heavily documented in social and evolutionary psychology; behavioral economics; cultural anthropology; sociology; and more recently, social neuroscience. Studies have shown, for example, that social influence, including knowledge of social norms, can change a variety of behaviors, ranging from basic perceptual judgments (Asch, 1952) to more complex attitudes and moral beliefs (Borsari & Carey, 2003). A growing body of work has demonstrated how, in addition to changing individuals at the behavioral level, social influence facilitates robust changes at the neural level as well in regions and networks associated with conflict monitoring, valuation, and reinforcement learning (Campbell-Meiklejohn & Frith, 2012; Cascio, Scholz, & Falk, 2015; Izuma, 2017; Klucharev, Hytönen, Rijpkema, Smidts, & Fernández, 2009; Welborn et al., 2016; Zaki, Schirmer, & Mitchell, 2011). It is important to note that social influence can have important consequences for one's physical health. Indeed, work in applied psychology has shown that social norms can influence a wide variety of health-related behaviors, from decreasing heavy drinking, smoking, and drug use to increasing safe sex practices (Hansen & Graham, 1991; Perkins, Linkenbach, Lewis, & Neighbors, 2010; Sheeran & Taylor, 1999).

Some work in developmental psychology has suggested that social influence may be especially salient during adolescence, a time period that has been characterized by increased sensitivity to social information (Blakemore & Mills, 2014; Chein, Albert, O'Brien, Uckert, & Steinberg, 2011; Nelson, Leibenluft, McClure, & Pine, 2005). Adolescents are believed to be more likely to take risky actions as a result of social influence, particularly by their peers (Gardner & Steinberg, 2005), including smoking, drinking, drug use, unprotected sex, and reckless driving (Chein et al., 2011; Hawkins, Catalano, & Miller, 1992; Krosnick & Judd, 1982; Mizuno, Seals, Kennedy, & Myllyluoma, 2000; Steinberg, 2011). This heightened propensity to engage in risky behaviors in conjunction with social influence has also been observed in animal

Editor's Note. Oriel FeldmanHall served as the action editor for this article.—NC

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This work was presented at the Society for Research on Adolescence Biennial Meeting, in March 2014, and the Flux Congress Annual Meeting, in September 2014. Analysis code for this article is available at https://github.com/beckmart/SocialInfluenceBehavioralStudy and data are available by request.

This work was supported by National Institutes of Health Grants R01 HD069178 and R01 AG043463 to Kevin N. Ochsner and F31 NIMH 107119 to Rebecca E. Martin. We thank Jochen Weber and Jamil Zaki for help with the task design; Suneet Goraya and Athena Bochanis for help with data collection; Niall Bolger, Greg Jensen, and Jared P. Lander for advice on statistical analyses; and Daphna Shohamy, Nim Tottenham, Jennifer Silvers, Katherine Duncan, and members of the SCAN and Learning Labs at Columbia University for helpful discussions throughout the project.

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models. For instance, adolescent rats are more likely to consume alcohol and nicotine in the presence of peers relative to adults (Logue, Chein, Gould, Holliday, & Steinberg, 2014; Thiel, Sanabria, & Neisewander, 2009).

Although it is known that social influence may lead teens to make riskier choices, one area that has been less explored—yet is a significant public health concern—is how knowledge of others' attitudes toward food may shape one's own eating choices. At its most basic level, food is a primary reward that is critical for survival (Schultz, 2000), and habits and practices surrounding eating and food choice are heavily mediated by social and cultural norms (Robinson, Thomas, Aveyard, & Higgs, 2014). As with other reward-inducing behaviors, eating is prone to abuse and dysregulation. One third of children and adolescents and an even larger proportion of adults are overweight or obese, which carries heavy health costs (Lobstein et al., 2015; Ogden, Carroll, Kit, & Flegal, 2012). Obesity can contribute to heart disease—the leading cause of death in the United States—as well as to other leading causes of death, including diabetes and certain types of cancers (National Institutes of Health, 1998).

Despite these facts, little work has asked how peer influence impacts responses to primary rewards such as food during adolescence, and even fewer studies have directly compared adolescents with adults. Although some survey-based and field research is consistent with the idea that social factors, including one's community and social network, contribute to obesity (de la Haye, Robins, Mohr, & Wilson, 2010; Valente, Fujimoto, Chou, & Spruijt-Metz, 2009), to our knowledge, no experimental studies have directly examined the effects of peer influence on adolescents' food preferences in comparison with adults.

Here, we used a variant of an established paradigm (Klucharev et al., 2009) to ask how social norms influence valuation of a variety of palatable foods in young adolescents and young adults. Two questions were of primary interest. The first was whether young adults and adolescents differ in their baseline food preferences. Establishing baselines for food preference as a function of age is a necessary precursor to addressing the second question, which was whether and how social influence can shift an individual's food valuations. This is because differences in the average level of desire for foods—or the amount of variability or instability of these desires—could potentially mask age-related differences in social influence. Turning to the second question, emerging work has suggested that social influence can impact food preferences in adults (Croker, Whitaker, Cooke, & Wardle, 2009; Nook & Zaki, 2015), although little is known about adolescent susceptibility to such influence. As such, our aim was to assess how social influence shapes responses to primary appetitive food cues in adolescents and to compare how their responses might compare with those of adults. Specifically, in light of work showing increases in risky decision-making and reward seeking during adolescence with peer influence, we were interested in whether adolescents would also be more sensitive than adults to peer influence over nonrisky reward-based decisions. Finally, a third exploratory question of secondary interest was whether there would be individual difference factors, such as gender or body mass index (BMI), that would crosscut answers to the first two questions such that some individuals would show greater or lesser susceptibility to social influence.

Method

Participants

We tested 94 participants: 47 young adults ages 18–22 (23 female; $M = 20.98$, $SD = 1.58$) and 47 young adolescents ages 10–14 (24 female; $M = 12.38$, $SD = 1.40$) recruited from the New York City metropolitan area. These two age groups were carefully chosen based on previous work suggesting that conformity behaviors may peak in the late childhood to early adolescent period and taper off linearly from later adolescence into adulthood (Costanzo & Shaw, 1966; Steinberg & Monahan, 2007). By choosing an early adolescent cohort, we sought to capture a developmental period when individuals are believed to be most susceptible to peer influence and contrast it with an adult comparison group with whom the effects of peer influence may be more stabilized. On the basis of a prior study in adults using the paradigm we used in the current study (Zaki et al., 2011), we expected that a sample size of 47 participants per age group would achieve approximately 98% power to detect a social influence effect of comparable size ($d = .62$) assuming an α of .05. The Columbia University Institutional Review Board approved the study. All participants gave informed consent. Participants were screened to exclude for psychiatric, developmental, and eating disorders prior to participating in the experiment. Five additional participants were excluded: three for not following the instructions correctly and two because of task interruptions related to computer malfunctions.

Stimuli

Food stimuli were collected and normed from prior studies on food craving (Kober et al., 2010; Silvers et al., 2014). Care was taken to ensure that the images were selected to be palatable; to depict a variety of foods, both savory and sweet; and to span the spectrum of energy density and healthiness (e.g., from fruit and salads to desserts and fried foods).

Procedure

Social influence task. Participants were told they were taking part in a study on food preference and that a sample of approximately 100 people in their respective age group had rated a set of food pictures. Participants were then told that they would rate their preferences for the same foods and, in most cases, would be shown the average rating made by the participants who had already completed the study.

For each trial, participants viewed a food image and were then asked to rate their food preference using a 7-point scale ranging from 1 (*not at all*) to 7 (*a lot*). The participants' ratings were highlighted by a green square. They then saw the average group rating for that food, highlighted by a red square. They also saw a number indicating the difference between their rating and the group rating (see Figure 1).

Group ratings were generated by a pseudorandom adaptive algorithm that assigned each trial to one of four peer response conditions based on initial ratings: peers want more, peers want less, peers agree, and the control condition in which no feedback was given (no feedback). For each participant, approximately 25% of the trials were assigned to each peer condition. In the *peers want*

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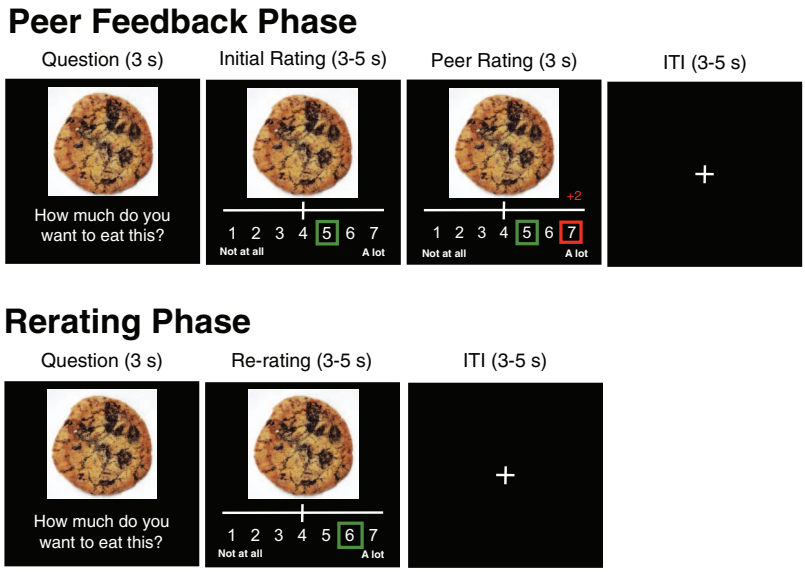

Figure 1. Trial structure for the social influence task. On each trial, participants rated how much they wanted to eat the pictured food on a 7-point Likert scale. Their rating was shown to them in green, and shortly after making their response, they saw the peer rating for that trial in red. Thirty minutes later, participants rerated the images to assess the effects of the prior peer ratings. Participants completed 90–180 trials for each phase. Image courtesy of Vijay Pandurangan. See the online article for the color version of this figure.

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more and *peers want less* trials, peer responses could be 1−2 points above or below participants' ratings. Trials were run in 15-item blocks where within each block feedback based on the participants' response would include approximately three no-feedback responses, four agree responses, four responses 1 point above or below participants' response, and four responses 2 points above or below participants' response. To counteract potential floor and ceiling effects (e.g., individuals who consistently gave 1 ratings and thus had fewer *peers want less* responses), we chose a multilevel model analysis approach to best capture both within- and between-subjects variance, and we also included initial ratings as a covariate in all of our regression analyses. After rating the complete set of images, participants took a 30-min break. They then rerated the same images a second time, this time without seeing peer ratings. These procedures are modeled after prior studies using similar methods of social influence on preferences for other types of stimuli in adults (Klucharev et al., 2009; Zaki et al., 2011).

Individual difference measures. We collected a battery of assessments on a subset of the sample measuring potential factors we thought might affect participants' responses to peer influence. The sample subset consisted of participants who were able to stay for an extended testing session following the experiment. Additionally, we added questionnaires to our study after the first cohort of adults was tested ($N = 25$), and therefore our adult sample is reduced for some measures (see the online supplemental materials for *N*s).

These measures covered three main domains: general individual differences, social behaviors, and health behaviors. When adolescent-specific scales were available, they were used on our young adolescent sample, and *z* scores were used in age group comparisons. General individual difference measures included gender, age, IQ (Canivez, Konold, Collins, & Wilson, 2009); pubertal status (Tanner & Whitehouse, 1976); and socioeconomic status (McLoyd, 1998), as well as standard assessments of mental health, including depression (Beck, Steer, & Carbin, 1988; Helsel & Matson, 1984) and anxiety (Spielberger & Edwards, 1973; Spielberger, Gorsuch, & Lushene, 1970). Social measures included resistance to peer influence (Steinberg & Monahan, 2007), rejection sensitivity (Downey & Feldman, 1996; McLachlan, Zimmer-Gembeck, & McGregor, 2010), need to belong (Baumeister & Leary, 1995), and social desirability (Crandall, Crandall, & Katkovsky, 1965; Crowne & Marlowe, 1960; Reynolds, 1982). Food-related measures included hunger levels at the time of testing and the time participants last ate, as well as body mass index (BMI; percentiles for young adolescents Kuczmarski et al., 2002; BMI for young adults; and categorical weight status for group comparisons; see the online supplemental materials for more details), disordered eating using the SCOFF eating disorder screening test (Morgan, Reid, & Lacey, 1999; Walsh, Wheat, & Freund, 2000), body image with the Body Esteem Scale (Mendelson, Mendelson, & White, 2001), media influence (Cusumano & Thompson, 2001), and body weight and healthy eating subscales from the Youth Risk Behavior Survey (Eaton et al., 2012), which included questions about self-described weight, dieting status, and healthy eating (see the online supplemental materials for further description of measures).

Analysis

We used the R statistical software language (R Core Team, 2014), and in particular, its lme4 (Bates, Maechler, Bolker, & Walker, 2014) and lmerTest (Kuznetsova, Brockhoff, & Christensen, 2013) packages, to model the effects of peer influence on food preference within age groups. Using lme4, we estimated

multilevel models that allowed for subject-specific random intercepts and peer influence slopes. To account for potential effects of regression to the mean, we used initial ratings as a covariate in our models testing social influence (Yu & Chen, 2015). Additionally, we conducted secondary exploratory analyses (described in the online supplemental materials) to test individual differences that might impact one's likelihood of being socially influenced (e.g., gender, hunger level, question type, age, body weight, and dieting status).

Results

Age-Related Differences in Baseline Food Preferences

Young adolescent participants showed different patterns from those of young adults in their initial food preferences, the distribution of their ratings, and the stability of those preferences across phases.

Average valuations for foods. Young adolescents and young adults demonstrated different baseline patterns of food valuations (see Figure 2A). Age group was a significant predictor of initial ratings, with young adolescents reporting lower levels of craving compared to young adults ($b = -.60$, 95% confidence interval [CI: $-.91$, $-.28$], $p = .003$; mean initial ratings: young adolescents 4.28 [1.02]; young adults 4.87 [.85]).

Distribution of food valuations. We found that the distribution of food valuations differed between age groups (two-sample Kolmogorov–Smirnov test, $D = .13$, $p = 2.2 \times 10^{-16}$; see Figure 2B). Additionally, young adolescents rated a higher proportion of foods on the negative end of the scale compared to young adults (percentage of negative ratings: young adolescents 39%; young adults 25%), $t(92) = 3.53$, $p = .0006$, $d = .73$. Conversely, young adults showed a stronger positive skew and rated a larger proportion of foods on the positive end of the scale (percentage of positive ratings: young adolescents 50%; young adults 62%), $t(92) = 2.88$, $p = .005$, $d = .59$.

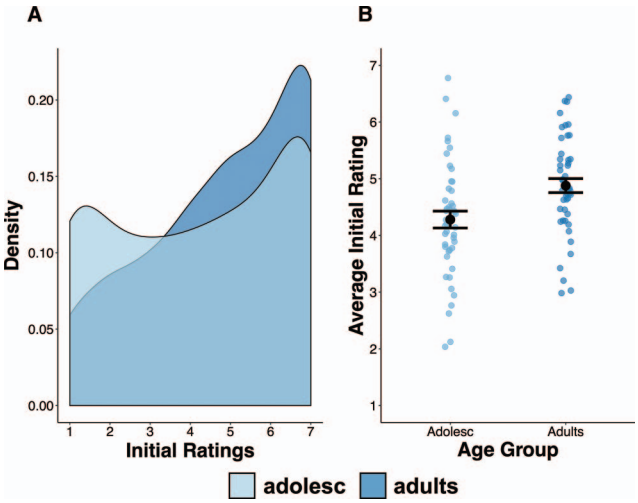

Figure 2. Panel A: Multikernal density estimate of distribution of initial ratings. The *x*-axis represents initial ratings (1–7), and the *y*-axis represents the proportion of trials given a particular rating. Young adolescents (adolesc) are depicted in the lighter shade, and young adults in darker shade. Young adults had higher overall initial ratings of foods, whereas young adolescents had stronger, more bimodal initial ratings. Panel B: Average initial ratings by age group. See the online article for the color version of this figure.

Stability of Baseline Food Valuations

In assessing the overall stability of valuations over time, we measured how age group predicted absolute change in ratings. Using the absolute value measurement of the change score allowed us to see how much individuals changed their ratings, regardless of sign. We found young adolescents demonstrated more volatility in general, and changed their ratings to a greater degree, than did young adults across all conditions, including the control and peers agree conditions (see Figure 3, Panels A and B; $b = .11$, 95% CI [.00, .21], $p = .03$).

Social Influence on Food Valuations

Overall, we found a conformity effect in both age groups such that when peers preferred foods more or less, participants changed their ratings in the direction of the peer ratings (see Figure 4; young adolescents: $b = .14$, 95% CI [.08, .19], $p = .0001$; young adults: $b = .16$, 95% CI [.12, .20], $p = 8.04 \times 10^{-14}$). We did not find a significant interaction with age group, suggesting that neither group was more likely to conform than the other ($b = -.009$, 95% CI [$-.06$, .08], $p = .80$).

Interactions With Individual Difference Factors

Individual difference factors including age and gender did not strongly account for differences in susceptibility to social influence between subjects. First, a full regression model including all measured individual differences (i.e., gender, age, depression, anxiety, resistance to peer influence, rejection sensitivity, social desirability, hunger level, time participants last ate, body mass index, body image, and healthy and disordered eating habits) as covariates did not reduce the degree to which social influence changed ratings ($b = .16$, 95% CI [.10, .22], $p = 2.42 \times 10^{-06}$). Second, we looked at each individual difference measure separately and assessed how they related to one's likelihood of conforming during the task. We found that for young adolescents, at an alpha level of .05, higher anxiety correlated with greater conformity, $r(64) = .30$, $p = .01$; however, no results from this exploratory analysis survived Bonferroni correction for multiple comparisons (see Table 1; see the online supplemental materials for more summary statistics and plots).

Discussion

The study began with the question of how social influence shapes appetitive valuations in young adolescents and young adults. To address it, both groups of participants first expressed their ratings for a set of food stimuli, received feedback on normative peer ratings for them, and later revalued their own ratings. Three key findings were obtained. First, analysis of the initial baseline (i.e., preinfluence) ratings demonstrated that young adolescents had stronger negative initial opinions about more foods. Young adults had more positive initial ratings of more foods, as demonstrated by their left-skewed distribution of ratings toward the positive end of the scale. Second, adolescents changed their food ratings more across all conditions,

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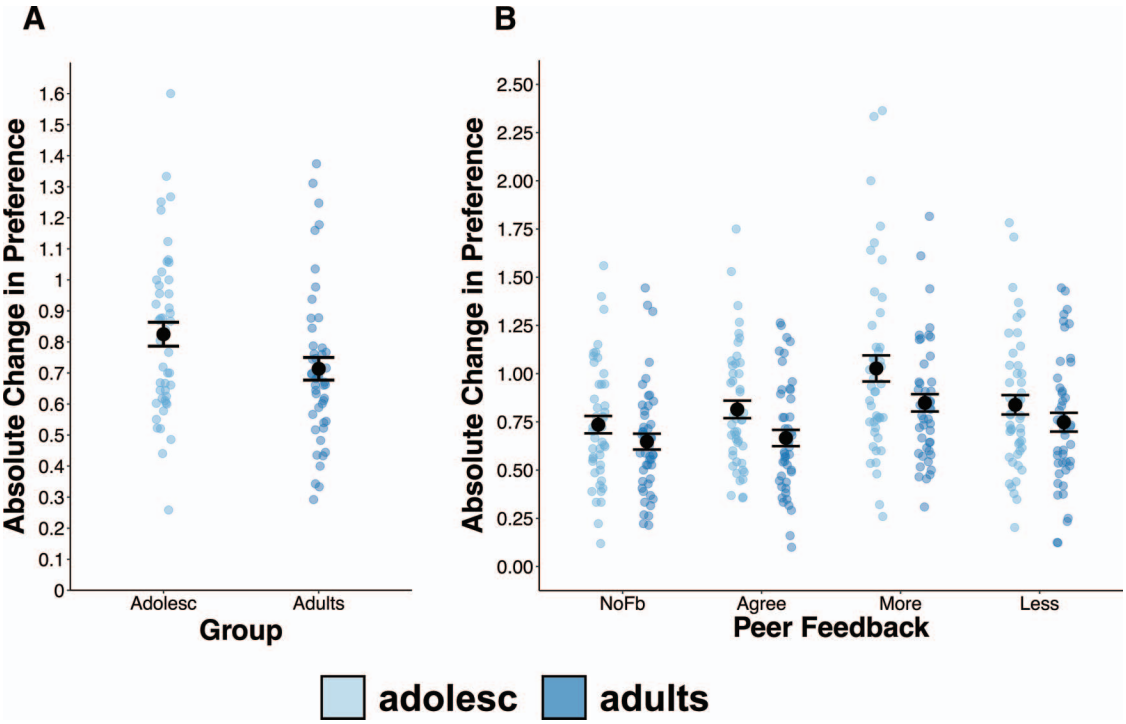

Figure 3. Panel A: Overall average change in ratings across all four conditions (i.e., absolute value of the change score for the peers want more, peers want less, peers agree, and the control conditions). Young adolescents demonstrated greater volatility across all peer response types in that they changed their ratings more than adults did on average and demonstrated greater variability. Panel B: Absolute change in ratings broken down by peer feedback condition. NoFb = no feedback; Agree signifies that peer rating and participant ratings matched; More signifies that peers rated foods higher; Less signifies that peers rated foods lower. Error bars represent the standard error of the mean. See the online article for the color version of this figure.

irrespective of whether they were socially influenced. Third, comparing preinfluence ratings to postinfluence ratings showed that exposure to group norms changed reported food valuations in both age groups to a similar extent. Finally, we found that social influence effects were robust to individual differences, including gender and other variables related to social processing and health behaviors. These data have significant implications for basic research on adolescent appetitive reactivity and social behavior as well as for translational research on improving health behaviors.

First, with respect to age-related differences in baseline food valuation, there could be at least three factors at play. First, young adults may have wanted to eat more foods by virtue of their having had more exposure to the foods over time because of their age (Ventura & Worobey, 2013). Future work could assess how familiarity and experience with food interacts with one's ability to be influenced by others' food valuations across different developmental time points. Second, young adolescents may have more sensitive palates and may generally prefer the tastes of fewer foods (Birch, 1999). Finally, differences in initial ratings may be a more general phenomenon of younger individuals' having a negative response bias compared to adults as a function of their cognitive maturity. This theory, however, has been tested mainly in children and may not generalizable to young adolescents (Chambers & Johnston, 2002; Marsh, 1986).

Second, with respect to the finding that young adolescents were more likely to change their ratings across all conditions, including when peers agreed and when no feedback was given, the fact that this effect was not specific to the social influence conditions suggests young adolescents' food valuations show more volatility and less stability than do adult food valuations, even if they are not more susceptible to peer influence. Although young adolescents started out with more extreme ratings in both the positive and negative direction, their rate of change was also greater than that of the young adults'. This instability has been described in research on adolescent valuations more generally (Campbell, 1961) and also specifically with food habits (Nu, MacLeod, & Barthelemy, 1996; von Post-Skagegård et al., 2002). As noted previously, this could be because young adolescents have had less experience with the foods presented and thus have less stable opinions about the foods compared to adults. This begs the question of whether future studies could further tease apart the effects of social influence and food valuation stability by examining social influences across different types of stimuli—including some that are equivalently or even more familiar to adolescents than to adults, such as social media—or across a broader age range, spanning continuously from children to older adults.

Third, with respect to susceptibility to social influence, we found that the effects of social influence on appetitive valuations were robust in both young adolescents and young adults across a wide range of food types, both healthy and unhealthy. This finding replicates prior work in adults using similar experimental manip-

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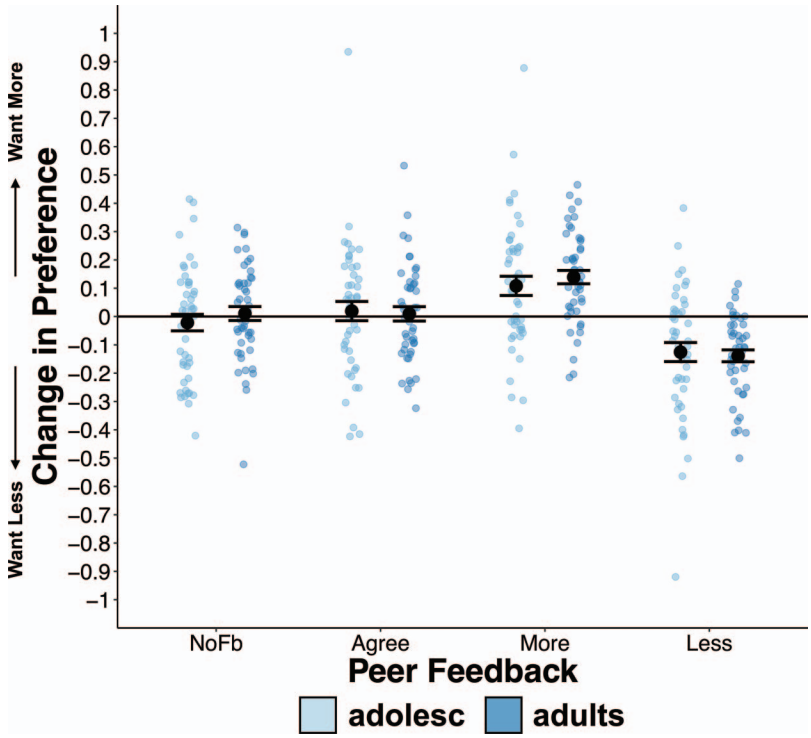

Figure 4. The effect of social influence on food preference. Adjusted change in rating from Phase 1 to Phase 2 (i.e., residualized change score when controlling for Phase 1 ratings). Both young adolescents and adults changed their ratings in the direction of the peer ratings when peers wanted to eat foods more or less. Changes in preference when peers agreed with participants or no feedback was given did not differ on average from 0. NoFb = no peer rating; Agree signifies that peer rating and participant ratings matched; More signifies that peers rated foods higher; Less signifies that peers rated foods lower. Error bars represent the standard error of the mean. See the online article for the color version of this figure.

ulations (Klucharev et al., 2009; Nook & Zaki, 2015; Zaki et al., 2011) and extends such work by demonstrating that young adolescent populations are also similarly affected by such influence. This finding also supports a host of studies that have found an effect of social influence on food choices (Neumark-Sztainer, Story, Perry, & Casey, 1999; Robinson, Blissett, & Higgs, 2013). However, our study is unique in that rather than being survey- or focus group−based, we assessed real-time behavior in the lab, and whereas most studies have examined one age group or the other, we directly compared young adolescents to young adults.

Notably, although both young adolescents and young adults showed robust social influence effects, it could be argued that this study diverges from the theory that adolescence may be a period of increased sensitivity to social influence (Blakemore & Mills, 2014). One reason that adolescents did not show larger social influence effects in this task compared to adults may be because of the social manipulation used. Most social influence studies on adolescents include the presence, or the belief of a presence, of one to five same-sex peers (Chein et al., 2011; Jones et al., 2014; Masten et al., 2009; Silva, Shulman, Chein, & Steinberg, 2016). Our task used a majority influence, norms-based manipulation where participants believed that about 100 peers in the same age group had previously rated the food images. Indeed, although there are many studies on majority influence effects in adults, studies with adolescents have been mixed (Berndt, 1979; Costanzo & Shaw, 1966; Walker & Andrade, 1996) and developmental patterns of social conformity effects from adolescence to adulthood have yet to be discovered. Two studies assessing the effects of social influence on judgments of risky behaviors found that young adolescents were more susceptible to peer influence compared to older adolescents and adults (Knoll, Leung, Foulkes, & Blakemore, 2017; Knoll, Magis-Weinberg, Speekenbrink, & Blakemore, 2015). These differing results from ours and others' (Lourenco et al., 2015; Rosenblau, Korn, & Pelphrey, 2018) may be due to the stimulus type used—risk judgments. Food is a stimulus all participants have had experience with on a day-to-day basis, whereas risk assessments may be more novel and less familiar. Although future studies could test further boundary conditions of the adolescent social sensitivity hypothesis, our findings suggest that appetitive reactivity to food cues can be shifted by peers to a similar degree in both adolescents and adults. Furthermore, future work could measure developmental differences in the degree to which adolescents are swayed by few versus many influencers.

Fourth, with respect to individual differences in susceptibility to social influence, we found that social influence effects were robust even when accounting for numerous factors. This finding is in concert with a recent meta-analysis on a similar social construct—social modeling of food consumption—which in addition to not finding interactions with age and social modeling also found that

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Table 1
Correlations Between Conformity Index Score and General, Social, and Eating Behavior-Related Individual Difference Measures

Variable	Teens	Adults	Full sample
General			
Age	−.01	.02	.03
Gender	.09	.03	.06
IQ	−.13		
Pubertal status	.07		
Parent education level	−.13	−.03	−.07
Depression	.15	.09	.13
Anxiety[a]	.32*	.26	.30*
Social cognition			
Resistance to peer influence	−.19	.14	−.05
Need to belong	.06	−.11	−.01
Rejection sensitivity	.18	.36†	.22†
Social desirability	−.06	.13	−.01
Eating behavior			
Hunger level at time of test	−.15	−.02	−.10
Last eating time prior to test	.04	−.27†	−.12
Body mass index	−.01	−.02	−.00
Disordered eating	.12	−.09	.02
Body image	−.17		
Media influence	.12	−.35	.03
Self-described weight	−.05	−.24	−.08
Dieting status	.29†	−.18	.20
Healthy eating	−.20	.26	−.10

[a] Stait-Trait scores based on the State-Trait Anxiety Inventory are combined.
† $p < .10$. * $p < .05$.

evidence of interactions with factors such as sex, hunger, weight, and eating goals were limited to inconclusive (Cruwys, Bevelander, & Hermans, 2015).

Finally, the present study has implications for translational and more applied work aimed at improving health behaviors. Indeed, it suggests that a social norms-based approach may be an effective strategy in improving eating choices. This norms-based approach was successful in a study aimed at reducing bullying in middle schools (Perkins, Craig, & Perkins, 2011) and drinking and driving in college-aged adults (Perkins et al., 2010). Another study designed to prevent drinking and marijuana and tobacco use among seventh graders found that a social norms approach was the most effective in reducing onset time and prevalence of use after a 1-year follow-up (Hansen & Graham, 1991). Employing social influence to improve eating choices could be a strong addition to health interventions such as Michelle Obama's "Let's Move" campaign, the Coordinated Approach to Child Health program, and others.

Several limitations in this study are important to address. First, our study was designed to measure social influence effects starting at an age when social influence susceptibility is believed to be high (age 10), decrease linearly, and then asymptote around early adulthood (Steinberg & Monahan, 2007). As such, we excluded the middle adolescence period, which could have revealed more insights into the change trajectory of the volatility we observed in young adolescents' food preferences. We also acknowledge that our young adult group is still undergoing neural maturation processes and transitional stages in social interactions and environments (i.e., most of these adults were still in college). An open question is whether a difference in social influence may be seen between young adolescents and older adults whose social lives and environments have experienced more stability over a longer period of time. Second, to make the task feasible in our lab environment, we assessed appetitive reactivity using food pictures and self-report, which may yield different or weaker results compared to measurements involving the presence of real food and subsequent food consumption (e.g., see Giuliani, Merchant, Cosme, & Berkman, 2018). Third, the first cohort of adults we tested did not complete the full battery of individual difference measures, and as a result we may have been underpowered to detect group-level differences in relationships between these measures and social influence.

This study investigated how social influence shapes reactivity to appetitive food cues in early adolescence and adulthood. Beyond the answers this laboratory study can provide, future studies in an intervention context could address how social influence impacts actual food consumption and how the addition of repeated exposure of specific types of social influence may impact individuals over time. Overeating and obesity is a major public health concern. These results highlight the effect other people have on one's eating choices and underscore the potential impact of harnessing the power of social influence to improve eating decisions and habits.

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Received July 12, 2017
Revision received May 1, 2018
Accepted May 10, 2018 ■

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