

# Rituals Enhance Consumption

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## Abstract

Four experiments tested the novel hypothesis that ritualistic behavior potentiates and enhances ensuing consumption—an effect found for chocolates, lemonade, and even carrots. Experiment 1 showed that participants who engaged in ritualized behavior, compared with those who did not, evaluated chocolate as more flavorful, valuable, and deserving of behavioral savoring. Experiment 2 demonstrated that random gestures do not boost consumption as much as ritualistic gestures do. It further showed that a delay between a ritual and the opportunity to consume heightens enjoyment, which attests to the idea that ritual behavior stimulates goal-directed action (to consume). Experiment 3 found that performing a ritual oneself enhances consumption more than watching someone else perform the same ritual, suggesting that personal involvement is crucial for the benefits of rituals to emerge. Finally, Experiment 4 provided direct evidence of the underlying process: Rituals enhance the enjoyment of consumption because of the greater involvement in the experience that they prompt.

## Keywords

rituals, consumption, enjoyment, involvement, decision making, motivation

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Rituals mark many life events, big and small. People use systematized sequences of behaviors to prepare for and mark events, from games of sport to academic examinations. Rituals play a particularly prominent role in ancient and modern occasions for consumption. For instance, food historians have catalogued the countless rituals that surround the slaughter, preparation, and consumption of food and beverages (Tannahill, 1995). On an everyday level, Rossano (2012) depicted the birthday ritual as taking the typical act of eating and ceremonializing it with ritualized actions—placing an entire cake with candles ablaze in front of the special person, singing (often off-key), and prompting a wish to be made. Although the prevalence of rituals in consumption settings is well known, to our knowledge there have been no empirical tests of rituals' effect. In fact, rituals have been studied almost exclusively with qualitative designs, which therefore made it “impossible” (Rossano, 2012, p. 542) to draw causal inferences about rituals' power to change thoughts, feelings, and behavior.

In the current experiments, we systematically had some participants, but not others, perform a ritual and

then assessed everyone's consumption experiences involving eating or drinking. Given the long joint history of rituals and consumption, we predicted that the experience of consuming would be enhanced—making the food or beverage tastier, as well as enjoyed, savored, and valued more—when preceded by ritual than when not.

## How Rituals Might Aid the Enjoyment of Consumption

Our prediction that rituals have a causal impact on the experience of consuming has hints in anthropology. Visser (1992) described meal rituals as arousing desire. The French offer a notable case study: Known for their love of food, they—not coincidentally—heavily ritualize eating, which is likely a major reason why “French kids eat everything” (Le Billion, 2012).

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Rituals are known to increase involvement (van der Hart, 1983), a concept akin to intrinsic interest (Trevino & Webster, 1992). Accordingly, we predicted that heightened involvement may be behind rituals' ability to brighten consumption's pleasurable aspects. We therefore tested involvement as a driving force behind rituals' effects on consumption, and did so via measurement and manipulation (Spencer, Zanna, & Fong, 2005). We defined a ritual as symbolic activity that often includes repeated and unusual behaviors occurring in fixed, episodic sequences (Cohn, 1990; Crews & Boutcher, 1986; Rook, 1985; Schippers & Van Lange, 2006). Operationally, we opted to use multiple and novel ritual forms in order to show that a broad range of behaviors—if performed in a systematic, contextualized, stereotypy fashion—can enhance consumption. To test the power of rituals to enhance consumption, we used between-subjects designs and randomly assigned participants to conditions.

### Experiment 1: Do Rituals Enhance Consumption?

Experiment 1 tested the basic question of whether rituals enhance consumption. Participants tasted chocolate, before which they either did or did not perform a ritual. We measured four outcomes: behavioral savoring of and willingness to pay for the chocolate, as well as how flavorful and enjoyable it was. We predicted that participants who performed a ritual would find the chocolate more flavorful and savor, value, and enjoy the chocolate more than those who did not perform a ritual.

#### Method

**Participants and design.** Fifty-two students (32 female; mean age = 22.10 years,  $SD = 2.88$ ) participated in exchange for \$15. Participants were randomly assigned to one of two conditions: ritual or no ritual.

**Procedure.** As part of a consumer study, participants in the *ritual* condition were instructed, “Without unwrapping the chocolate bar, break it in half. Unwrap half of the bar and eat it. Then, unwrap the other half and eat it.” In the *no-ritual* condition, participants relaxed for approximately the same duration and then ate the chocolate naturally.

We measured behavioral savoring by recording how long participants spent eating the chocolate (Quoidbach, Dunn, Petrides, & Mikolajczak, 2010). On-screen instructions told participants to press a button when they started tasting the chocolate and another button when they completed the tasting. (Hence, participants in the ritual condition did this twice.) Savoring was measured as the duration between button presses.

Next, participants answered three items assessing enjoyment: “I really enjoyed tasting the chocolate,” “I savored every bite,” and “I really enjoyed the consumption experience of tasting the chocolate” (1 = *strongly disagree*, 7 = *strongly agree*). We averaged the ratings for these items to form an enjoyment index ( $\alpha = .88$ ). Participants also indicated how much they would be willing to pay for the chocolate, which was our measure of value.

Last, participants rated three items assessing the chocolate's taste: “How rich/sweet/sugary does the chocolate seem to you?” (1 = *not at all*, 7 = *very much*). We averaged these ratings as a measure of flavor ( $\alpha = .59$ ).

### Results and discussion

As predicted, participants in the ritual condition reported enjoying the consumption experience ( $M = 5.95$ ,  $SD = 0.98$ ) more than did those in the no-ritual condition ( $M = 5.15$ ,  $SD = 1.20$ ),  $t(50) = 2.65$ ,  $p = .01$ ,  $d = 0.73$ . What is more, the behavioral measure showed that participants in the ritual condition also savored the chocolate somewhat more ( $M = 29.03$  s,  $SD = 17.83$ , vs.  $M = 19.93$ ,  $SD = 16.30$ ),  $t(50) = 1.93$ ,  $p = .06$ ,  $d = 0.53$ . In addition, participants in the ritual condition were willing to put their money where their mouth was: They were willing to pay more for the chocolate ( $M = \$0.59$ ,  $SD = 0.32$ ) than were participants in the no-ritual condition ( $M = \$0.34$ ,  $SD = 0.29$ ),  $t(50) = 2.93$ ,  $p < .01$ ,  $d = 0.82$ . Finally, participants who performed the ritual also reported that the chocolate was more flavorful ( $M = 5.58$ ,  $SD = 0.65$ ) than did those in the no-ritual condition ( $M = 5.22$ ,  $SD = 0.66$ ),  $t(50) = 1.98$ ,  $p = .053$ ,  $d = 0.55$ .

Experiment 1 supported the hypothesis that rituals can enhance consumption. We demonstrated the impact of performing a ritual on self-reports of enjoyment, actual behavioral savoring (indicated by time spent eating the chocolate), and valuation of the experience (indicated by willingness to pay for the chocolate bar).

### Experiment 2: Rituals Versus Random Gestures, and the Power of Delay

Experiment 2 had four goals. First, we had not yet tested a design in which participants in the no-ritual condition performed any movements. Therefore, all participants in Experiment 2 were instructed to perform movements, although the movements conformed more to the definition of a ritual in the ritual condition than in the comparison condition, in which participants performed random gestures. On the basis of anthropological literature linking rituals to heightened pleasure during consumption (Le Billion, 2012; Visser, 1992), we predicted that ritualized behaviors would improve consumption beyond the effect of random gestures.

Second, we tested whether ritual behavior would heighten anticipated enjoyment, as well as enjoyment derived from consumption. Anticipated enjoyment is a crucial component of utility and provides a source of pleasure separate from actual consumption (Loewenstein, 1987). We predicted that rituals, compared with random gestures, would increase both anticipated enjoyment and actual enjoyment of consumption.

Third, our theory was that rituals heighten involvement in the act of consumption. If this is true, then a break between the ritual and consumption ought to stimulate the drive to consume, which should further heighten rituals' effects. We derived this prediction from research showing that a delay between goal cues and the opportunity to enact goal-directed behavior potentiates the ensuing behavior (Förster, Liberman, & Friedman, 2007). We therefore expected that participants who performed a ritual and then had to wait before consuming would experience the highest enjoyment, compared with those who experienced no delay after the ritual and those who performed random gestures.

Finally, we altered what participants consumed from the sublime (chocolate) to the mundane: carrots. We used healthy food as a strong test of our hypothesis that rituals can enhance consumption enjoyment—even of a neutral (viz., not strongly hedonic) stimulus.<sup>1</sup>

## Method

**Participants and design.** One hundred five students (59 female; mean age = 22.14 years,  $SD = 2.74$ ) participated in exchange for extra course credit. They were randomly assigned to a 2 (ritual vs. random gestures)  $\times$  2 (delay vs. no delay) design.

**Procedure.** In a session involving several ostensibly unrelated studies, participants learned that the first involved vegetables. Three plastic bags of carrots sat on participants' desks, and participants tasted one carrot from each bag (three total). Participants in the *ritual* condition performed an identical set of gestures and movements before they tasted each of the carrots. Their ritual comprised behaviors such as using their knuckles to rap on the desk, taking deep breaths, and closing their eyes for a moment. Participants in the *random-gestures* condition, in contrast, performed gestures that were similarly elaborate but differed from one carrot to the next.

The procedure diverged for the no-delay and delay conditions at the point after participants had performed the third set of gestures but had not yet eaten the third carrot. Participants in the *no-delay* condition next reported their anticipated enjoyment of the third carrot by responding to two items: "How much do you anticipate enjoying the next carrot?" and "How much do you

want to have another carrot?" (1 = *not at all*, 7 = *very much*). Ratings were averaged to form an index of anticipated enjoyment ( $\alpha = .89$ ). Next, they tasted a carrot from the third bag and reported their enjoyment by responding to three items: "I really enjoyed the carrot" (1 = *strongly disagree*, 7 = *strongly agree*), "I savored every bite" (1 = *strongly disagree*, 7 = *strongly agree*), and "How did the carrot taste?" (1 = *worst carrot I've ever had*, 7 = *best carrot I've ever had*). Ratings of these items were averaged to form an enjoyment index ( $\alpha = .90$ ).

In the *delay* condition, after participants performed the third set of gestures, they were told that they would not eat the third carrot immediately but instead would complete an unrelated study. They rated their anticipated enjoyment of the third carrot, answered questionnaires as part of an unrelated study, and finally ate the third carrot and rated enjoyment of it.

**Pretest.** To confirm that the manipulation of gesture evoked in participants the sense that they were engaging in a ritual, we conducted a pretest in which 53 students (29 male) participated in the ritual or random-gestures condition described in the preceding section, although after gesturing they drank water instead of eating carrots; the procedures of the no-delay condition were followed. After the third sip of water, participants answered two questions: "How much did your hand movements feel like a ritual?" and "How much did you feel like you were doing random actions?" (1 = *not at all*, 7 = *very much*;  $\alpha = .61$ ).

## Results and discussion

**Pretest.** Results from the pretest confirmed the effectiveness of the manipulation in activating the concept of a ritual. Participants in the ritual condition reported that their movements felt more like a ritual ( $M = 3.96$ ,  $SD = 1.96$ ) and less like random action ( $M = 4.69$ ,  $SD = 1.99$ ) than did participants in the random-gestures condition ( $M = 2.41$ ,  $SD = 2.01$ , and  $M = 6.30$ ,  $SD = 1.24$ , respectively),  $F_s(1, 52) > 8.10$ ,  $ps < .01$ .

**Main experiment.** We predicted that participants in the ritual condition would both anticipate enjoying and actually enjoy the carrots more than would participants in the random-gestures condition. Moreover, we predicted that participants in the ritual/delay condition would both anticipate enjoying and actually enjoy the carrots more than would participants in the other three conditions.

Consistent with expectations, a 2 (ritual vs. random gestures)  $\times$  2 (delay vs. no delay) analysis of variance (ANOVA) revealed a significant main effect of gesture condition on anticipated enjoyment,  $F(1, 101) = 29.57$ ,  $p < .001$ ,  $\eta^2 = .22$ , indicating that participants in the ritual

condition reported more anticipated enjoyment ( $M = 4.71$ ,  $SD = 1.45$ ) than participants in the random-gestures condition ( $M = 3.33$ ,  $SD = 1.13$ ). There was also a significant main effect of delay condition,  $F(1, 101) = 4.32$ ,  $p < .05$ ,  $\eta^2 = .04$ , suggesting that participants in the delay condition reported greater anticipated enjoyment ( $M = 4.32$ ,  $SD = 1.55$ ) than participants in the no-delay condition ( $M = 3.77$ ,  $SD = 1.36$ ). The interaction of gesture and delay conditions was not significant,  $F(1, 101) = 1.46$ ,  $p = .23$ .

We used a planned-comparison strategy to test the hypothesized comparisons (Keppel & Wickens, 2004; Kirk, 1995). Three pairwise comparisons showed that, as predicted, participants in the ritual/delay condition ( $M = 5.10$ ,  $SD = 1.32$ ) reported higher anticipated enjoyment than did participants in the other three conditions: ritual/no-delay ( $M = 4.28$ ,  $SD = 1.49$ ),  $t(101) = 2.40$ ,  $p < .05$ ,  $d = 0.48$ ; random-gestures/delay ( $M = 3.44$ ,  $SD = 1.28$ ),  $t(101) = 4.74$ ,  $p < .001$ ,  $d = 0.94$ ; and random-gestures/no-delay ( $M = 3.22$ ,  $SD = 1.00$ ),  $t(101) = 5.90$ ,  $p < .001$ ,  $d = 1.18$  (Fig. 1).

Analyses within the delay and no-delay conditions also revealed the beneficial effect of ritualized gestures on anticipated enjoyment. Participants in the ritual condition reported great anticipated enjoyment than those in the random-gestures condition both when there was a delay,  $t(101) = 4.74$ ,  $p < .001$ ,  $d = 0.94$ , and when there was no delay,  $t(101) = 2.94$ ,  $p < .01$ ,  $d = 0.59$ . These results suggest that rituals heighten anticipation regardless of whether there is a subsequent delay before consumption—and that a delay enhances the effects of rituals even more.

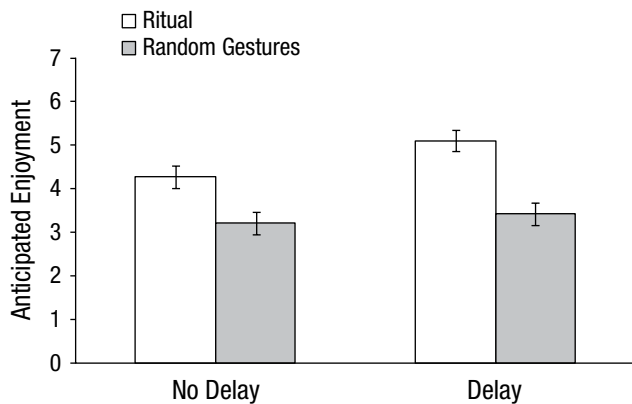
A 2 (ritual vs. random gestures)  $\times$  2 (delay vs. no delay) ANOVA on experienced enjoyment revealed a significant main effect of gesture condition,  $F(1, 101) = 18.87$ ,  $p < .001$ ,  $\eta^2 = .16$ , indicating that participants in the

ritual condition reported higher enjoyment ( $M = 4.80$ ,  $SD = 1.49$ ) than did participants in the random-gestures condition ( $M = 3.69$ ,  $SD = 1.08$ ). As in the case of anticipated enjoyment, a significant main effect of delay also was found,  $F(1, 101) = 6.17$ ,  $p < .05$ ,  $\eta^2 = .06$ , indicating that participants in the delay condition reported higher experienced enjoyment ( $M = 4.58$ ,  $SD = 1.63$ ) than did participants in the no-delay condition ( $M = 3.93$ ,  $SD = 1.08$ ). The interaction between gesture and conditions was not significant,  $F < 1$ .

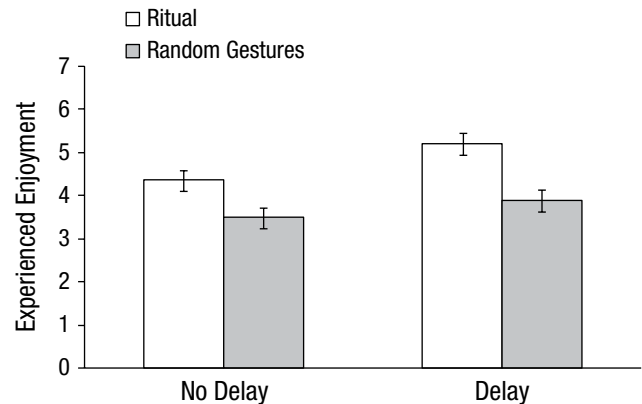
Planned comparisons tested our predictions. Participants in the ritual/delay condition ( $M = 5.20$ ,  $SD = 1.69$ ) reported significantly higher experienced enjoyment than did participants in the ritual/no-delay condition ( $M = 4.35$ ,  $SD = 1.15$ ),  $t(101) = 2.48$ ,  $p < .05$ ,  $d = 0.49$ ; random-gestures/delay condition ( $M = 3.88$ ,  $SD = 1.29$ ),  $t(101) = 3.76$ ,  $p < .001$ ,  $d = 0.75$ ; and random-gestures/no-delay condition ( $M = 3.49$ ,  $SD = 0.82$ ),  $t(101) = 4.96$ ,  $p < .001$ ,  $d = 0.99$  (Fig. 2).

Participants in the ritual condition reported higher experienced enjoyment both with and without a delay—delay:  $t(101) = 3.76$ ,  $p < .001$ ; no delay:  $t(101) = 2.39$ ,  $p < .05$ ,  $d = 0.48$ . Paralleling the results for anticipated enjoyment, these results confirm that rituals benefit enjoyment whether there is or is not a delay between the ritual and the opportunity to consume—and that a delay amplifies enjoyment even more.

**Discussion.** Experiment 2 demonstrated that rituals heighten both anticipated and experienced enjoyment, and these results were obtained with the consumption of carrots, whose taste is not universally held in high regard. The experiment demonstrated that in the no-delay condition, participants who first performed systematic, repetitive movements enjoyed consuming more than did participants who performed nonsystematic, random



**Fig. 1.** Mean anticipated enjoyment in Experiment 2 as a function of gesture and delay conditions. Error bars represent standard errors.



**Fig. 2.** Mean experienced enjoyment in Experiment 2 as a function of gesture and delay conditions. Error bars represent standard errors.

movements. What is more, separating the performance of ritualized gestures from the consumption experience heightened appreciation ever further: Participants who performed a ritual and then were required to wait before consuming the food reported greater anticipated and experienced enjoyment relative to participants in other conditions. That is, a delay between a ritual and the opportunity to consume heightens enjoyment, which attests to the idea that ritual behavior stimulates goal-directed action (to consume).

### Experiment 3: Does Personal Involvement Matter?

The primary goal in Experiment 3 was to manipulate involvement to test our contention that personal involvement is a key driver of the enhancing effects of rituals. We tested whether merely seeing a ritual performed is enough to enhance consumption, or whether one must perform the ritual oneself. On the one hand, observing a behavior can trigger processes similar to those that result from performing the behavior oneself (Ackerman, Goldstein, Shapiro, & Bargh, 2009), so there might be no difference between the effects of observing and enacting rituals on consumption. On the other hand, our proposed mediator, intrinsic involvement, seems more likely to be influenced when one performs behavior than when one merely watches it (Walsh & Rosenbaum, 2009). Therefore, we predicted that merely observing rituals would not be as influential on consumption outcomes (in this case, flavor) as is performing rituals.

We also made several methodological changes in Experiment 3. Participants consumed a drink—lemonade—instead of food. Moreover, participants consumed a tart flavor, which was different from the neutral and rich flavors of carrots and chocolate. More important, participants performed a different ritual than in Experiments 1 and 2. We tested our hypotheses with different consumption experiences and ritualistic behaviors to build confidence that the prior results were not due to specific circumstances. In this experiment, we also tested whether rituals affect emotions in order to rule out mood as an alternate explanation.

#### Method

**Participants and design.** Forty students (23 female; mean age = 20.50 years,  $SD = 2.15$ ) participated in exchange for extra course credit. Students were randomly assigned to one of two conditions: self-ritual or other-ritual.

**Procedure.** In a study on product tasting, participants in the *self-ritual* condition were given steps to make a

glass of lemonade. They poured half a packet of lemonade powder into a glass, poured in enough water to fill half the glass, stirred the mixture, and then waited 30 s. Next, they poured the remainder of the powder into the glass, poured in enough water to top off the glass, stirred, and waited 30 s. In the *other-ritual* condition, participants observed the experimenter perform these same steps. All participants then tasted the lemonade.

As in Experiment 1, participants rated how sweet, sugary, and balanced the flavor of the lemonade was (1 = *not at all*, 7 = *very much*), and these ratings were averaged to form an index of flavor ( $\alpha = .73$ ). Last, participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), indicating their current level of emotionality (1 = *very slightly*, 5 = *extremely*). Ratings were averaged to create indices of positive ( $\alpha = .87$ ) and negative ( $\alpha = .77$ ) affect.

### Results and discussion

As predicted, participants who performed the ritual reported that the lemonade tasted more flavorful ( $M = 4.55$ ,  $SD = 1.00$ ) than did participants who watched the experimenter perform the ritual ( $M = 3.75$ ,  $SD = 1.44$ ),  $t(38) = 2.04$ ,  $p < .05$ ,  $d = 0.65$ . We found no difference in positive or negative affect as a function of condition,  $t_s < 1.40$ , n.s.

Rituals seem to increase the flavor of the consumed product more when they are performed by the consumer rather than someone else. That is, merely observing a ritual was less effective in enhancing consumption than performing the rituals oneself. These data suggest that the best way to enjoy a glass of wine may be to perform the ceremonial bottle opening oneself rather than foist it off on a fellow partygoer. The beneficial effects of rituals do not appear to be linked to changes in positive or negative mood.

### Experiment 4: Explaining the Beneficial Effects of Rituals on Consumption

Whereas Experiment 3 demonstrated that personal involvement plays a moderating role in the beneficial effects of rituals on consumption, in Experiment 4 we assessed involvement directly in order to demonstrate its mediating role. We operationalized involvement as intrinsic interest using a subscale of a well-validated questionnaire assessing the components of flow experiences (Trevino & Webster, 1992). We predicted that compared with participants in a no-ritual condition, those in a ritual condition would report higher levels of intrinsic involvement, which would play a mediating role in enhancing consumption. Further, we hypothesized that the observed



enhancement of consumption would be specific to keener intrinsic interest and not to other possible mediators, and therefore tested specificity by measuring other dimensions of flow.

## Method

**Participants and design.** Eighty-seven adults (54 male; 65 students; mean age = 22.51 years,  $SD = 2.61$ ) participated in exchange for \$15. They were recruited through a university subject pool. Participants were randomly assigned to one of two conditions: ritual or no ritual.

**Procedure.** The procedure was similar to that of Experiment 1. Participants in the ritual condition unwrapped and tasted a chocolate bar according to a ritualized set of instructions, and those in the no-ritual condition tasted the chocolate without being given such instructions. In addition to assessing participants' enjoyment of the chocolate ( $\alpha = .85$ ) and willingness to pay for it (same items as in Experiment 1), we included three-item indices measuring a sense of control over the consumption experience ( $\alpha = .72$ ), attentional focus on the consumption experience ( $\alpha = .77$ ), curiosity aroused by the experience ( $\alpha = .95$ ), and intrinsic interest in the consumption experience ( $\alpha = .69$ ; Trevino & Webster, 1992). The intrinsic-interest items were "Eating the chocolate bored me," "Eating the chocolate was fun," and "Eating the chocolate was intrinsically interesting" (1 = *not at all*, 7 = *very much*).

## Results and discussion

**Consumption experience.** Participants in the ritual condition were willing to pay more for the chocolate ( $M = \$0.45$ ,  $SD = 0.33$ ) than were participants in the no-ritual condition ( $M = \$0.30$ ,  $SD = 0.25$ ),  $t(85) = 2.42$ ,  $p < .02$ ,  $d = 0.52$ . Rituals also enhanced the pleasure provided by the chocolate. Compared with participants in the no-ritual condition, those in the ritual condition reported greater enjoyment of the consumption experience ( $M = 6.12$ ,  $SD = 0.85$ , vs.  $M = 5.50$ ,  $SD = 1.16$ ),  $t(85) = 2.81$ ,  $p < .01$ ,  $d = 0.62$ .

**Intrinsic interest and other subscales of flow.** As predicted, performing a ritual influenced intrinsic interest in the ensuing chocolate tasting,  $t(85) = 2.53$ ,  $p < .02$ ,  $d = 0.54$ . Participants in the ritual condition reported greater intrinsic interest ( $M = 4.99$ ,  $SD = 1.11$ ) than did those in the no-ritual condition ( $M = 4.37$ ,  $SD = 1.18$ ). The positive effect of rituals was specific to increasing intrinsic interest. Participants in the ritual condition and those in the no-ritual condition reported similar levels of control, attention focus, and curiosity ( $ps > .20$ ).

**Mediation.** We tested whether intrinsic interest mediated the relationship between performing a ritual and enjoying the consumption experience. When we controlled for condition, intrinsic interest predicted enjoyment ( $\beta = 0.43$ ,  $p < .001$ ). After we controlled for intrinsic interest, the effect of condition on enjoyment became nonsignificant (from  $\beta = 0.29$ ,  $p = .006$ , to  $\beta = 0.18$ ,  $p = .073$ , 95% bias-corrected confidence interval = [0.06, 0.54]). Thus, this analysis indicated full mediation.

A similar analysis using willingness to pay as the dependent measure also supported intrinsic interest as the key process. When we controlled for condition, intrinsic interest predicted willingness to pay ( $\beta = 0.27$ ,  $p < .02$ ). After we controlled for intrinsic interest, the effect of condition on willingness to pay became nonsignificant (from  $\beta = 0.25$ ,  $p = .018$ , to  $\beta = 0.18$ ,  $p = .09$ , 95% bias-corrected confidence interval = [0.01, 0.10]). Thus, this analysis also indicated full mediation.

**Discussion.** Experiment 4 replicated our previous findings that rituals have beneficial effects on the pleasure of consuming. Mediation analyses demonstrated that intrinsic interest drove the relationship between performance of a ritual and both participants' enjoyment of consumption and the value they placed on the product they consumed.

## General Discussion

Rituals often make life better. Obsessives find activities less stressful when they are permitted to perform their chosen rituals (e.g., Rachman & Hodgson, 1980), and space feels safer and food purer in the presence of rituals (Dulaney & Fiske, 1994). We explored the role of rituals in making a ubiquitous aspect of everyday life—consumption—more enjoyable. Four experiments supported our hypothesis that rituals enhance consumption.

Our results were robust to methodological and sample differences. We studied both students and nonstudents, as well as diverse ritualized behaviors—from stirring and pouring liquid to breaking and unwrapping food to rapping knuckles on a desk. When these behaviors followed a systematic, ritualistic pattern, enjoyment increased; when they did not, or when the behaviors performed were more random and therefore less ritualistic, enjoyment was lower. We found that rituals enhanced consumption of sweet (chocolate), tart (lemonade), and healthy (carrots) items. We assessed subjective ratings (flavor, enjoyment), value (willingness to pay), and actual behavior (duration spent savoring). Across such diverse metrics, rituals improved the consumption experience.

We documented not only that rituals enhance consumption, but also a process by which that enhancement occurs. Rituals seem to improve the consumption

experience because they lead to greater involvement and interest. Following recommendations by Spencer et al. (2005), we tested for the role of involvement as both moderator and mediator. Experiment 3 showed that merely observing a ritual being performed does not enhance consumption as much as does personal involvement in performing that ritual, whereas Experiment 4 demonstrated that when people perform a ritual, their intrinsic interest increases, which in turn leads to more enjoyable consumption. In sum, performing rituals heightens the involvement that people feel while consuming products, and feeling deeply involved potentiates the experience.

Four avenues for future research seem worthy of discussion. First, future studies could examine what kinds of consumption experiences are most likely to improve with rituals. Experiments 1 and 3 showed that rituals augment flavor, which is among the most important determinants of which foods people choose to eat (Glanz, Kristal, Tilley, & Hirst, 1998). We do not claim that rituals will aid all forms of consumption, however, because boosting the flavor of some tastes may be off-putting. Research on the potential of rituals to alter the taste of truly unenjoyable foods would be welcome.

Second, there might be cognitive effects or lay beliefs about rituals. It could be that rituals act in a way that is akin to a mindfulness induction, which might be part of the causal process. Additionally, future research could explore the finding that participants in the pretest for Experiment 2 intuited that their repeated performances constituted a ritual.

Third, our results were marked by fairly big effect sizes. This likely came about for a few reasons. First, ritualized behavior likely encompasses several mechanisms. In addition to boosting involvement, rituals might serve a preparatory, symbolic, or palliative function. Other work has shown that rituals restore control after loss (Norton & Gino, in press). Second, our participants performed actual behavior, which itself could have triggered various mechanisms (Baumeister, Vohs, & Funder, 2007). Work exploring which settings and outcomes tap into which mechanisms will reveal more about the compellingness of ritualized behavior.

Fourth, the social dimension of rituals deserves attention. Many common consumption rituals, such as the birthday-cake example mentioned earlier, are inherently social in nature. Although our results demonstrate that rituals can enhance consumption even in the absence of social factors, enacting rituals in a rich social context may have additional benefits—benefits that may extend beyond enhancing consumption. For instance, families that consistently enact ritual behaviors have children with better self-control and academic performance than families that do not make use of rituals (Brody & Flor, 1997;

Fiese, 2002; Seaton & Taylor, 2003). This suggests that enacting family rituals might not only heighten the consumption experience but also lead to broadly positive outcomes.

## Conclusion

Rituals have a surprising degree of influence over how people experience what comes next. We examined the everyday experiences of eating and drinking in order to systematically test the effects of rituals on consumption, and consistently observed that consumption was more pleasurable after rituals than it would be otherwise. Because our results suggest that rituals can enhance the pleasure derived from even neutral stimuli (here, carrots), our results suggest that rituals could be put to use to make a wide variety of desirable behaviors—from eating healthfully to exercising to practicing safe sex—more pleasurable. Rituals, then, might serve as a covert means to get people to do a little more of what makes life worth living.

## Author Contributions

K. D. Vohs, F. Gino, and M. I. Norton developed the study concept. All authors contributed to the study designs. Data collection and analysis were overseen by F. Gino and Y. Wang, and all authors interpreted the data. K. D. Vohs drafted the manuscript, and F. Gino and M. I. Norton provided critical revisions. All authors approved the final version of the manuscript for submission.

## Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

## Note

1. A taste-rating pretest ( $n = 36$ ) confirmed that participants perceive carrots as hedonically neutral. More information is available from the authors on request.

## References

- Ackerman, J. A., Goldstein, N. J., Shapiro, J. R., & Bargh, J. A. (2009). You wear me out: The vicarious depletion of self-control. *Psychological Science, 20*, 326–332.
- Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science, 2*, 396–403.
- Brody, G. H., & Flor, D. L. (1997). Maternal psychological functioning, family process, and child adjustment in rural, single-parent African American families. *Developmental Psychology, 33*, 1000–1011.
- Cohn, P. J. (1990). Pre-performance routines in sport: Theoretical support and practical applications. *Sport Psychologist, 4*, 301–312.

- Crews, D. J., & Boutcher, S. H. (1986). An exploratory observational behavior analysis of professional golfers during competition. *Journal of Sport Behavior*, *9*, 51–58.
- Dulaney, S., & Fiske, A. P. (1994). Cultural rituals and obsessive-compulsive disorder: Is there a common psychological mechanism? *Ethos*, *22*, 243–283.
- Fiese, B. H. (2002). Routines of daily living and rituals in family life: A glimpse of stability and change during the early child-raising years. *Zero to Three*, *22*(4), 10–13.
- Förster, J., Liberman, N., & Friedman, R. S. (2007). Seven principles of goal activation: A systematic approach to distinguishing goal priming from priming of non-goal constructs. *Personality and Social Psychology Review*, *11*, 211–233.
- Glanz, K., Kristal, A. R., Tilley, B. C., & Hirst, K. (1998). Psychosocial correlates of healthful diets among male auto workers. *Cancer Epidemiology, Biomarkers & Prevention*, *7*, 119–126.
- Keppel, G., & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Pearson.
- Kirk, R. E. (1995). *Experimental design: Procedure for behavioral sciences* (3rd ed.). Belmont, CA: Brooks/Cole.
- Le Billion, K. (2012). *French kids eat everything: How our family moved to France, cured picky eating, banned snacking, and discovered 10 simple rules for raising happy, healthy eaters*. New York, NY: William Morrow.
- Loewenstein, G. (1987). Anticipation and the valuation of delayed consumption. *Economic Journal*, *97*, 666–684.
- Norton, M. I., & Gino, F. (in press). Rituals alleviate grieving for loved ones, lovers, and lotteries. *Journal of Experimental Psychology: General*.
- Quoidbach, J., Dunn, E. W., Petrides, K. V., & Mikolajczak, M. (2010). Money giveth, money taketh away: The dual effect of wealth on happiness. *Psychological Science*, *21*, 759–763.
- Rachman, S. J., & Hodgson, R. (1980). *Obsessions and compulsions*. Englewood Cliffs, NJ: Prentice Hall.
- Rook, D. W. (1985). The ritual dimension of consumer behavior. *Journal of Consumer Research*, *12*, 251–264.
- Rossano, M. J. (2012). The essential role of ritual in the transmission and reinforcement of social norms. *Psychological Bulletin*, *138*, 529–549.
- Schippers, M., & Van Lange, P. A. M. (2006). Superstition as a psychological placebo in top sport. *Journal of Applied Social Psychology*, *36*, 2532–2553.
- Seaton, E. K., & Taylor, R. D. (2003). Exploring familial processes in urban, low-income African-American families. *Journal of Family Issues*, *24*, 627–644.
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, *89*, 845–851.
- Tannahill, R. (1995). *Food in history*. New York, NY: Three Rivers Press.
- Trevino, L. K., & Webster, J. (1992). Flow in computer-mediated communication. *Communication Research*, *19*, 539–573.
- van der Hart, O. (1983). *Rituals in psychotherapy*. New York, NY: Irvington.
- Visser, M. (1992). *The rituals of dinner: The origins, evolution, eccentricities, and meaning of table manners*. New York, NY: Penguin Books.
- Walsh, M. M., & Rosenbaum, D. A. (2009). Deciding how to act is not achieved by watching mental movies. *Journal of Experimental Psychology: Human Perception and Performance*, *35*, 1481–1489.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.