

Accessible Attitudes Improve Dieters' Food Choices

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Abstract

Previous research on attitude accessibility has found that accessible attitudes influence both visual and cognitive attention. Smith, Fazio, and Cejka (1996), for instance, found that categories towards which we have accessible attitudes are more likely to be brought to mind when assessing a related object. Research in our lab (Young & Fazio, in prep) has found evidence that not only are categories towards which we have accessible attitudes more likely to be brought to mind, but they are more likely to influence our *evaluations* of related objects. The current experiment seeks to apply this attitude accessibility phenomenon to a practical domain – that of eating. Can we modify the way people evaluate and decide to eat various foods by making their attitudes toward either food healthiness or food tastiness more accessible? Our experiment found that if participant attitudes toward healthiness are made more accessible, participants do, in fact, make more health-relevant food choices.

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When an attitude is accessible, it is easy to bring to mind. It is usually easier, for instance, to think of your attitude regarding kittens than it is to think of your attitude about kumquats. Attitude accessibility is a fluid phenomenon, changing from item to item and from person to person. It has interesting effects on how people construe (or view) the world around them. Roskos-Ewoldsen and Fazio (1992), for instance, found that more attitude-evoking objects (either measured via the latency of participants' responses (see Fazio et al., 1986; Powell & Fazio, 1984) to an attitude query or manipulated via attitude rehearsal) attracted attention when presented in the visual field. Given a brief presentation of an array of six objects, objects towards which participants had more accessible attitudes were more likely to be noticed. Moreover, even when these attitude-evoking objects were presented as distracters, they were more likely to be incidentally noticed and to interfere with participants' performance on a visual search task.

Attitude accessibility has also been shown to affect cognitive attention. Drawing from the paradigm in Roskos-Ewoldsen and Fazio (1992), Smith, Fazio, and Cejka (1996) generated a series of triads consisting of a target (e.g., *yogurt*) and two potential categorizations of that target (e.g., *dairy product*, *health food*). Just as an object in the visual field draws attention if one has an accessible attitude towards it, they hypothesized that a category in memory draws cognitive attention – it should be more likely to be brought to mind upon consideration of a related target.

To test this, the researchers asked participants to rehearse their attitudes towards one category (e.g., *dairy product*) and make animacy judgments towards the other (e.g., *health food*). Participants were later given the target word (e.g., *yogurt*) and told to use it as a memory cue to recall the earlier words. Those categories towards which participants' attitudes were made more accessible were more likely to be recalled. These effects were evident even when the cued-recall test was administered after a week-long delay. Thus, in memory, too, the accessibility of one's attitude towards a particular category can increase the likelihood of attending to that category given a related cue. Attitude accessibility can be seen as an

antecedent to the construal of an object (e.g., *yogurt*) in one way (e.g., *dairy product*) versus another (e.g., *health food*).

Previous research in our lab (Young and Fazio, in prep) sought to demonstrate that if attitude accessibility provides the impetus for using one category rather than another, then that category should affect participants' evaluations of related objects. In one experiment, participants rehearsed their attitudes towards either a positive category (e.g., *immunization*) or a negative category (e.g., *injection*). Participants later saw a target word (e.g., *flu shot*) and were asked to simply rate its likeability on a scale from -5 to +5. Target objects for which participants had rehearsed their attitudes regarding the *positive* category were seen as more positive than target objects for which participants had rehearsed their attitudes towards the *negative* category. The category towards which participants had more accessible attitudes was more likely to be brought to mind and therefore influence their evaluations of a related object.

Given this finding, we wondered if it might be possible for our attitude accessibility manipulation to, in effect, cast a wider net. Could attitude rehearsal affect the construal of a *range* of objects that vary along a particular dimension? Foods are an ideal domain to test this hypothesis, especially if individuals care about dieting. The dieter's dilemma is centered on the fact that when deciding whether to eat a particular food, two possible construals fight each other for superiority: the tastiness of the food (mmm, chocolate) versus the healthiness of the food (that's going to add 5 pounds to my waistline). Perhaps we can use our attitude accessibility manipulation to advantage one construal versus the other. Perhaps a dieter faced with a nice slice of chocolate cake, assuming he or she has rehearsed positive attitudes towards healthiness, will be more likely to construe it as a low-health option, and as such, reject it.

Method

Participants

Participants were 93 Ohio State undergraduates (58 male, 36 female) participating for REP credit.

Stimulus Materials

We generated a list of twenty-four fitness-related words. Twelve of these words were related to an unhealthy body (e.g., *pudgy*, *overweight*) and twelve connoted a fit body (e.g., *slender*, *healthy*). We

then generated a second list of twenty-four words taste-related words. Twelve of these words connoted the flavor of a given food (e.g., *sour*, *fruity*) and twelve connoted texture (e.g., *gummy*, *crunchy*). Both word lists can be found in Appendix A.

We also selected forty-two common foods from a database which indexed foods by fat content per serving (Health Advantage, 2009). Foods were chosen such that they ranged in fat content per serving from zero grams (e.g., *crackers*) to thirty (e.g., *big mac*), and each had a corresponding photograph. The full set of foods can be found in Appendix C. Pilot participants rated these food photographs on two dimensions: perceived tastiness, from -5 (*not tasty at all*) to +5 (*very tasty*), and perceived healthiness, from -5 (*very unhealthy*) to +5 (*very healthy*). The mean ratings for these two dimensions were marginally negatively correlated ($r = -.32, p = .04$). A scatterplot displaying the forty-two foods along the two dimensions is presented in Figure 1.

Procedure

Participants' two primary tasks consisted of an attitude rehearsal and control task. These were counterbalanced with respect to order. The task requirements varied with condition. In the "taste attitude rehearsal" condition, the attitude rehearsal task had participants rate each of the twenty-four taste words as to whether each represented a positive characteristic or a negative characteristic of a food on a seven-point scale from -3 (*Very negative characteristic*) to +3 (*Very positive characteristic*). The control task in this condition asked participants to classify each of the twenty-four fitness words as to whether it referred to a person who is physically fit or physically heavysset.

In the "fitness attitude rehearsal" condition, the attitude rehearsal task directed participants to rate each of the twenty-four fitness words on the extent to which each represented a positive characteristic or a negative characteristic of a person on a seven-point scale from -3 (*Very negative characteristic*) to +3 (*Very positive characteristic*). For the control task, participants in this condition were asked to rate each of the twenty-four taste words as to whether it described the taste or the texture of food. Thus, participants in the two conditions were exposed to the same list of taste-related and fitness-related words. The two

conditions differed with respect to *which* of the two sets of words participants rehearsed their attitudes towards.

After the first two tasks, participants completed a filler task consisting of spatial ability problems, as in Experiment 1. Again, this task was meant to clear short-term memory, with the hope that the dimension represented by the set of words that had been presented second would not enjoy a memorial advantage simply as a function of recency.

For the final task, the dependent measure, participants viewed each of the forty-two food photographs and were told to rate how likely they would be to eat a full serving of this food if it was offered to them. They provided this information on an eleven-point scale from -5 (*Very unlikely*) to +5 (*Very likely*).

Following the dependent measure, participants completed a number of questions. Pertinent to our analyses were three items which assessed what we will refer to as 'caloric concern.' These three items, gleaned from a larger, more diverse set (Cappelleri et al., 2009), pinpoint not simply whether individuals consider themselves to be dieting, but whether they *behave like a dieter* ("I deliberately take small helpings to control my weight," "I don't eat some foods because they make me fat," and "I consciously hold back on how much I eat at meals to keep from gaining weight"). The items are internally consistent ($\alpha = .77$).

Results

The data from two participants were eliminated from analyses because they were outliers on a residual plot. We ran a two-level HLM analysis on 3948 observations (based on 93 participants) nested in 42 foods. The model predicted the likelihood of eating a full serving of a given food from a participant's condition (taste vs. fitness attitude rehearsal), caloric concern (entered group-mean centered) and the interaction of the two at level 1, as well as food healthiness and food tastiness (entered grand-mean centered) at level 2¹. Coefficients were modeled as fixed if the associated error term was not significantly different from zero. We used a generous cut-off *p*-value of .2, as recommended by Nezlek (2011). Results for this model are presented in Table 1. As in Experiment 2, the coefficients for this model are interpreted

in the same way coefficients in linear regression are interpreted. In the following analyses, all simple effects were estimated at one standard deviation above and below the mean.

Table 1.

HLM Regression Coefficients for Experiment 2.

Predictor	Coefficient		
Main effects			
Intercept (γ_{00})	1.89	(0.11)	***
Food Tastiness (γ_{01})	.99	(0.10)	***
Food Healthiness (γ_{02})	.34	(0.10)	**
Condition (γ_{10})	.04	(0.04)	
Caloric Concern (γ_{20})	-.16	(0.05)	***
Interactions			
Condition X Food Tastiness (γ_{11})	.001	(0.03)	
Condition X Food Healthiness (γ_{12})	-.009	(0.04)	
Caloric Concern X Food Tastiness (γ_{21})	-.20	(0.05)	***
Caloric Concern X Food Healthiness (γ_{22})	.34	(0.05)	***
Condition X Caloric Concern X Food			
Tastiness (γ_{31})	.04	(0.04)	
Condition X Caloric Concern X Food			
Healthiness (γ_{32})	.24	(0.04)	***

Significance: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test).

Standard errors in parentheses.

Interestingly, while food healthiness did not interact with condition, this interaction was moderated by a three-way condition X caloric concern X food healthiness interaction, $\gamma_{32} = .24$, $t(3897) = 6.17$, $p < .0001$. As predicted, for participants high in caloric concern (that is, one standard deviation above the mean) we found a significant condition X food healthiness interaction, $\gamma = .23$, $t(3897) = 4.12$,

$p < .001$, such that participants in the fitness attitude rehearsal condition discriminated more based on the healthiness of foods ($\gamma = .91$, $t(39) = 7.3$, $p < .001$, mean difference = 1.81) than participants in the taste attitude rehearsal condition ($\gamma = .45$, $t(39) = 4.25$, $p < .001$, mean difference = .90). See Figure 1 for a depiction of this cross level interaction.

While the condition X food healthiness interaction was also significant for participants low in caloric concern (that is, one standard deviation below the mean), $\gamma = -.25$, $t(39) = -4.94$, $p < .001$, the pattern was unclear. Simple effects of food healthiness in the two conditions were only marginal (food healthiness effect in the taste condition, $\gamma = .25$, $t(39) = 1.89$, $p = .07$; food healthiness effect in the fitness condition, $\gamma = -.25$, $t(39) = -1.91$, $p = .06$), and as such, do not provide solid grounds for interpretation.

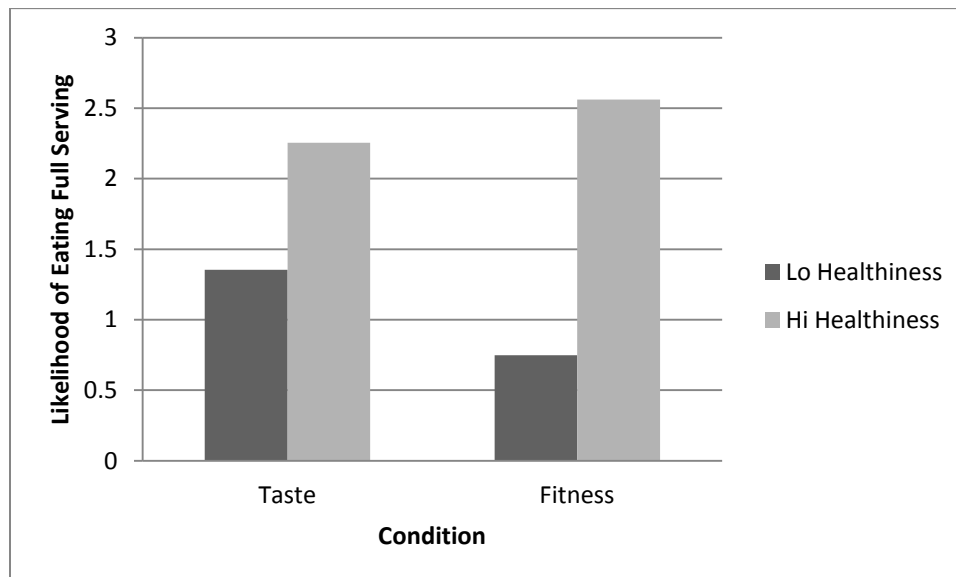


Figure 1. Condition (taste attitude rehearsal vs. fitness attitude rehearsal) X food healthiness (one standard deviation below vs. above the mean) interaction for participants high in caloric concern.

Discussion

The data clearly demonstrate that for participants high in caloric concern, boosting the accessibility of health-related attitudes resulted in a greater preference for healthy over unhealthy foods. We were, in fact, able to encourage participants who cared about controlling their caloric intake (i.e., were dieting) to pay heed to one dimension (health) over another (taste) through attitude rehearsal of a series of items that reflected that dimension (fitness words versus taste words). As a result, these

participants used the dimension that had been made more attitude-evoking to a greater extent when providing judgments regarding a series of items (foods) that varied along both the attitudinally-rehearsed dimension and the non-attitudinally rehearsed dimension. In other words, these participants were more likely to construe foods in terms of their healthiness if the 'fitness' dimension had been made more attitude-evoking, and more likely to construe foods in terms of their tastiness if the 'taste' dimension had been made more attitude-evoking.

Attitude rehearsal may thus be a useful technique for improving eating decisions for those who want to diet effectively. Future research should try to extend this possible technique to actual eating behavior rather than behavioral intentions. Future research should also examine implications regarding other domains. For instance, would this attitude accessibility paradigm affect consumer behavior? One might try to boost that accessibility of consumer attitudes towards either the 'green-ness' (eco-friendly characteristics) of a product or the inexpensiveness of a product. Perhaps if participants rehearse their attitudes towards the environment, they will make more environmentally-friendly purchase decisions, even though such products tend to be more expensive.

References

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Footnotes

¹The level 1 and level 2 equations are as follows:

$$\text{Level 1, likelihood}_{ij} = \beta_{0j} + \beta_{1j} (\text{Cond}) + \beta_{2j} (\text{CalConc}) + \beta_{3j} (\text{CondXCalConc}) + r_{ij};$$

$$\text{Level 2, } \beta_{0j} = \gamma_{00} + \gamma_{01} \text{Tastiness} + \gamma_{02} \text{Healthiness} + u_{0j},$$

where likelihood_{ij} represents individual i 's likelihood rating for food j ; Cond represents participant condition (taste attitude rehearsal = -1, fitness attitude rehearsal = +1); CalConc refers to participants' caloric concern; CondXCalConc represents the interaction of caloric concern with the condition variable, and r_{ij} represents the error associated with level 1. At level 2, each level 1 beta has its own equation, all of the same form. For brevity's sake, we have included only the equation for β_{0j} . Here, u_{0j} and represents the intercept (β_{0j}) error; γ_{00} is the average intercept; coefficients γ_{01} and γ_{02} represent main effects of food tastiness and food healthiness. The gamma coefficients for food tastiness and healthiness in the other four equations, $\beta_{1j} - \beta_{5j}$, represent cross-level interactions.