Self-Guide Framing and Persuasion: Responsibly Increasing Message Processing to Ideal Levels

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The current research examines the effect that framing persuasive messages in terms of self-guides (ideal vs. ought) has on the attitudes and cognitive responses of individuals with chronic ideal versus ought self-guides. The strength of participants' ideal and ought self-guides and the magnitude of participants' ideal and ought self-discrepancies were measured using a computerized reaction time program. One week later, participants read a persuasive message about a fictional breakfast product, framed in terms of either ideals or oughts. Matching framing to stronger self-guide led to enhanced message processing activity, especially among individuals who were low in need for cognition. Individuals who read messages framed to match their stronger self-guides paid more attention to argument quality, as reflected in their attitudes and cognitive responses. Messages with self-guide framing that matched individuals' stronger self-discrepancies did not have this effect on processing.

Keywords: *attitudes; persuasion; self-guide; self-discrepancy; attitude change*

> *Be all you can be*—enlist in the U.S. Army if you are ready to succeed in life.
>
> *Marines take care of their own*—the few and the proud have a duty to their country and their comrades.

The U.S. Armed Forces use a variety of recruitment strategies, particularly those that emphasize either success, dreams, and goals or duties, responsibilities, and obligations. Military recruiters would like individuals to commit their time to the United States, just as advertisers would like individuals to commit their money to consumer products, and charitable organizations and politicians would like individuals to commit resources to their causes. Appeals are often made either to one's hopes and dreams or to one's sense of duty and responsibility. We all know, for example, that it is our responsibility to help feed starving children and that it can cost less than the price of a cup of coffee to do so. Our research aims to understand the effects of framing messages in terms of success, dreams, and goals or duties, responsibilities, and obligations. This research explores when each of these divergent frames would be more successful and uses contemporary theories of the self, as well as current persuasion theory, to develop and test unique hypotheses about these frames.

SELF-GUIDES AND SELF-GUIDE MESSAGE FRAMING

The theory of regulatory focus (Higgins, 1997, 1999) addresses the ways that strong desired end-states, called self-guides, are related to self-regulation. An ideal self-guide represents one's hopes, wishes, and dreams for oneself, whereas an ought self-guide represents one's beliefs about one's duties, responsibilities, and obliga-

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tions. People use self-guides to regulate their actual self features (the traits and characteristics that they perceive themselves as actually possessing) in attempts to both match these features to their self-guides and to monitor their progress toward their goals. The related self-discrepancy theory (Higgins, 1987, 1989) addresses the ways in which discrepancies between an individual's actual self-features and his or her self-guides are linked to emotional vulnerabilities. For example, a person with a discrepancy between how she thinks she is (her actual self) and how she thinks she would like to be (her ideal self-guide) would experience depression, whereas a person with a discrepancy between how he thinks he is (his actual self) and how he thinks he ought to be (his ought self-guide) would experience anxiety (Higgins, 1987).[1]

Persuasive messages that are framed in ways that emphasize either hopes or duties could, in the language of regulatory focus and self-discrepancy theories, be thought of as containing self-guide framing. That is, a persuasive message could be framed to bring to mind one's hopes, goals, dreams, and ideals (ideal self-guide framing) or one's duties, obligations, responsibilities, and oughts (ought self-guide framing).

SELF-GUIDE MATCHING

Contemporary research clearly suggests that people are guided by both ideals and oughts, although these guides can differ in terms of their strength and accessibility. That is, some people have stronger ideal self-guides, whereas others have stronger ought self-guides. Chronic differences in self-guide strength may be due to childhood relationships with caretakers (see Higgins & Silberman, 1998). A stronger ideal self-guide would lead an individual to think more frequently about hopes and dreams, whereas a stronger ought self-guide would lead an individual to think more frequently about responsibilities and obligations. Although strong ideal or ought self-guides can be chronically active, these same guides also can be temporarily activated due to situational factors or experimental manipulations. For example, if people engage in careful thought about their current hopes and wishes, the ideal self-guide should become temporarily activated. If people engage in careful thought about their current responsibilities and duties, the ought self-guide should become temporarily activated (Higgins, Bond, Klein, & Strauman, 1986; Higgins, Roney, Crowe, & Hymes, 1994).

Imagine, now, that an individual with an activated ideal self-guide encounters a persuasive message that uses ideal self-guide framing or that an individual with an activated ought self-guide encounters a persuasive message that uses ought self-guide framing. What would the consequences be of a match between an active self-guide and self-guide framing? Self-guide activation and message framing matches have not yet been studied, but based on related research, a number of hypotheses are possible.

First, self-guide framing matches might typically have positive consequences for persuasion. In a potentially related line of research, some theorists have argued that matching a message to one's guiding attitude functions (i.e., the motivational basis of one's attitudes, or the psychological needs that are met by one's attitudes) increases persuasion (e.g., Snyder & DeBono, 1985). For example, high self-monitors, who are chronically concerned about social adjustment and who tend to hold attitudes that serve a social-adjustive function, are often more persuaded by message appeals that stress the image associated with a product rather than other features (e.g., the quality of the product). Low self-monitors, who are guided by internal values and who tend to hold attitudes that serve a value-expressive function, are often more persuaded by appeals that stress product quality rather than image (Lavine & Snyder, 1996; Snyder & DeBono, 1985).[2] Matching has been hypothesized to produce more persuasion either by the peripheral route because matched messages invoke a heuristic such as, "if it speaks to my values it must be good" (DeBono, 1987), or because matched messages are processed in a biased manner, with matching encouraging the generation of favorable thoughts or mismatching encouraging the generation of unfavorable thoughts (Cacioppo, Petty, & Sidera, 1982; Lavine & Snyder, 1996). Thus, when messages are framed to match a person's activated self-guide, more persuasion might result than when self-guide and message are mismatched.

It is also possible, however, that self-guide framing matches could have negative consequences for persuasion. For example, a self-guide framing match could bring to mind the ways in which one's actual self falls short of one's self-guide, activating one's self-discrepancies. As noted above, the activation of an actual-ideal self-discrepancy results in dejection-related feelings, and the activation of an actual-ought self-discrepancy results in agitation-related feelings (Higgins, 1987, 1989). Because self-discrepancies are associated with negative feelings, this distress could lead to negative feelings toward a matched message. Tykocinski, Higgins, and Chaiken (1994) examined the persuasive effects of matching individuals' chronic self-discrepancies to the outcome framing of a persuasive message. Individuals with chronic ideal discrepancies are hypothesized to be more sensitive to the presence and absence of positive outcomes and individuals with chronic ought discrepancies are hypothesized to be more sensitive to the presence and absence of negative outcomes (Higgins & Tykocinski, 1992). Thus, it was believed that a positively framed message would activate chronic ideal discrepan-

cies and negatively framed messages would activate chronic ought discrepancies.

In the Tykocinski et al. (1994) research, individuals with either chronic ideal or chronic ought self-discrepancies were presented with a persuasive message that was framed in terms of either the positive outcomes of adopting a recommendation or the negative outcomes of not adopting a recommendation. Matches between chronic self-discrepancies and outcome framing were expected to activate participants' self-discrepancies and arouse distress. This distress was then expected to lead to decreased motivation to yield to the message and increased counterarguing of the message. That is, contrary to research on functional matching effects (e.g., Lavine & Snyder, 1996), matches between self-discrepancies and outcome framing were expected to lead to less persuasion compared to mismatches. In fact, Tykocinski et al. (1994) found that a message that matched participants' discrepancies in terms of outcome framing were less effective than mismatched messages.

It is important to note that some prior work suggests that self-guides are independent of self-discrepancies (Higgins, Shah, & Friedman, 1997; Newman, Higgins, & Vookles, 1992). Thus, a person might have a chronic ideal self-guide (i.e., be guided by hopes, wishes, and dreams) without having an actual-ideal self-discrepancy salient. Nevertheless, it is possible that a persuasive message framed in terms of ideals would activate both an ideal self-guide and an ideal-self discrepancy. If self-guide framed messages activate related self-discrepancies in the way that outcome-framed messages are hypothesized to (Tykocinski et al., 1994), then decreased persuasion might result from self-guide frame matching (compared to mismatching) because of the distress associated with the discrepancies.

A third possibility is that instead of the main effect on attitudes suggested by the first two alternative hypotheses, self-guide framing matches could increase the extent of processing of the persuasive message. An increase in objective processing (as opposed to biased processing) would lead to positive consequences for persuasion if the message is strong but to negative consequences if the message is weak. According to the elaboration likelihood model of persuasion (ELM) (Petty & Cacioppo, 1981, 1986), when motivation and ability are not constrained to be either very high or very low, a factor such as the match between one's self-concept and the framing of the message might affect people's motivation to engage in more effortful consideration of the message arguments presented (a similar prediction might be derived from the heuristic/systematic model of persuasion; Chaiken, Liberman, & Eagly, 1989). That is, factors such as self-guide framing could lead to increased motivation to think carefully about the persuasive message, resulting in relatively favorable thoughts and attitudes if the message is strong and relatively unfavorable thoughts and attitudes if the message is weak.

When elaboration likelihood is not constrained to be high or low, a wide variety of both dispositional and situational factors have been shown to affect the extent of information processing. In fact, a recent reexamination of functional matching effects in persuasion demonstrated that messages matched to the functional basis of attitudes led to more careful processing than mismatched messages (Petty & Wegener, 1998). High versus low self-monitors engaged in more effortful elaboration of persuasive messages that appealed to image versus quality, respectively, rather than simply being more persuaded by matched messages. That is, the effect of argument quality on attitudes was greater when the messages matched the functional basis of attitudes (e.g., when a high self-monitor got an image appeal) than when they mismatched (e.g., when a high self monitor got a quality appeal). In research more closely related to regulatory focus theory (Higgins, 1997, 1999), Aaker and Lee (2001) examined the persuasion and processing effects of matching promotion-focused versus prevention-focused information to individuals' accessible independent versus interdependent self-guides, respectively. Similar to Petty and Wegener (1998), they found evidence that matches (i.e., promotion focus with independent self-guide and prevention focus with interdependent self-guide) led to enhanced message processing as evidenced by increased message recall and greater attitudinal differentiation of strong from weak arguments. Thus, based on this research, one might predict that messages with self-guide framing that matches an individual's active self-guide might similarly lead to greater processing of the persuasive message.

Strong self-guides have been linked to a greater tendency to seek out and use matched information, as well as to better memory for and more efficient evaluation of matched information (Higgins, 1999). Thus, accessible self-guides could lead to increased motivation and also to increased ability to process messages that are matched in framing to the activated self-guide. If self-guide framing matches lead to more careful processing of persuasive messages than mismatches, due to either increased motivation, increased ability, or a combination of the two, persuasion would be increased if the message arguments are strong but decreased if they are weak.

Prior research on functional matching effects (i.e., Petty & Wegener, 1998) also has shown that functional matching increases message processing primarily for those individuals who do not chronically engage in thought (i.e., those low in need for cognition) (Cacioppo & Petty, 1982). If self-guide framing matches lead to increased processing, this increase would pre-

sumably be most evident for people who would not otherwise be engaged in careful processing. Because low need for cognition individuals chronically engage in less careful processing, they are more likely to be affected by factors that increase motivation to engage in elaborative thought. Because high need for cognition individuals chronically engage in more careful processing, they are already likely to be engaging in elaborative thought and factors that increase one's motivation to do so will not be able to have a large enhancing effect (Priester & Petty, 1995; Smith & Petty, 1996). Thus, we included a measure of need for cognition in the current research to examine the possibility that the effect of self-guide framing matches on processing would vary with need for cognition.

OVERVIEW

The primary goal of the present study is to examine the impact of activated self-guides on responses to messages that are framed in a way to match or mismatch these guides. We assessed individuals' self-guides such that for some people, an ideal self-guide was dominant, but for others, an ought self-guide was dominant. We also assessed self-discrepancies for comparison purposes. All participants were then presented with persuasive messages that were framed in terms of either ideals or responsibilities and that contained either strong or weak arguments. Three outcomes regarding self-guide framing matches seemed possible given the prior literature. That is, as just explained, a match between an individual's dominant self-guide and the self-guide framing of a persuasive message might lead to increased persuasion, decreased persuasion, or increased message processing (which in turn could lead to either increased or decreased persuasion depending on the cogency of the message).

METHOD

We investigated the effects of self-guide framing matches on persuasion and message processing. All measures were taken by computer in two separate experimental sessions using MediaLab software (Jarvis, 1998). The sessions were conducted in a lab room containing four computers housed in individual cubicles arranged so that visual contact among participants was not permitted. In the first session, participants completed measures of self-guide strength, self-discrepancy, and need for cognition. In a second session, approximately 1 week later, they returned to participate in what was described as a marketing study about a new breakfast product. All participants were exposed to an advertising message containing either strong or weak arguments for the product. The message was framed either in terms of ideals or oughts. After the message, participants completed a variety of evaluative measures. At the conclusion of the session, a written debriefing was presented.

Participants

One hundred ninety-three introductory psychology students (107 women and 86 men) at Ohio State University participated in the two-session experiment in exchange for partial fulfillment of an introductory psychology class requirement. Participants were identified as either high (n = 97, M = 70.09) or low (n = 96, M = 52.19) in need for cognition via a median split on the 18-item need for cognition scale (Cacioppo, Petty, & Kao, 1984).

Materials

Self-guide strength measure. A computerized reaction time program was used to assess the chronic strength of participants' ideal and ought self-guides (see Shah & Higgins, 1997; Shah, Higgins, & Friedman, 1998). Participants read that they would be listing attributes that described how they hoped to be ("the attributes of the type of person they hoped to be or would ideally like to be") and attributes that described how they ought to be ("the attributes of the type of person they believed it was their duty or responsibility to be"). Participants were asked to list four attributes that described how they hoped to be (ideal self-guide attributes) and four attributes that described how they ought to be (ought self-guide attributes). Each attribute was to consist of only one word and could not be listed more than once. Participants also were instructed to enter their responses on the computer keyboard as quickly and accurately as possible. After entering each ideal attribute, the computer then displayed the attribute and asked participants to rate the extent to which they would ideally like to possess the attribute on a 4-point rating scale with endpoint labels of *slightly* and *extremely* (ideal extent rating). Similarly, after listing each ought attribute, participants were asked to rate the extent to which they believed they ought to possess the attribute on the same 4-point rating scale (ought extent rating). After the ideal or ought extent rating for each attribute, participants were asked to rate the extent to which they believed they actually possessed the attribute on the same 4-point rating scale (actual extent rating). Participants listed attributes and extents in one order: ideal, ought, ought, ideal, ought, ideal, ideal, ought.

The computer recorded the time each participant took to list each attribute and to make each self-guide and actual extent rating. Because these response-time measures were positively skewed, they were first transformed using a natural logarithmic transformation (see Fazio, 1990; Judd & McClelland, 1989). Ideal self-guide

strength was represented by the sum of the attribute and extent response times for the last three ideal self-guide attributes. Ought self-guide strength was represented by the sum of the attribute and extent response times for the last three ought attributes. In each case, the first response was considered a practice trial.[3] Each sum was then multiplied by –1 so that larger numbers represented faster response times or greater self-guide strength. Participants were classified as having a stronger ideal self-guide if their ideal response times were faster than their ought response times ($n = 100$, ideal self-guide strength $M = -75.29$, ought self-guide strength $M = -77.12$) or a stronger ought self-guide if their ought response times were faster than their ideal response times ($n = 93$, ought self-guide strength $M = -76.15$, ideal self-guide strength $M = -77.93$).

Self-discrepancy measure. Participants' ideal and ought self-discrepancy scores were calculated by subtracting the actual extent rating from the ideal or ought extent rating for each ideal or ought attribute, respectively. Then, the difference scores for each of the four ideal attributes were summed to create an ideal self-discrepancy score, and the difference scores for each of the four ought attributes were summed to create an ought self-discrepancy score. Participants were classified as having a larger ideal self-discrepancy if the ideal self-discrepancy score was higher than the ought self-discrepancy score ($n = 95$, ideal self-discrepancy score $M = 5.12$, ought self-discrepancy score $M = 2.72$), a larger ought self-discrepancy if the ought self-discrepancy score was higher than the ideal self-discrepancy score ($n = 50$, ought self-discrepancy score $M = 3.90$, ideal self-discrepancy score $M = 2.04$), or equally large ideal and ought self-discrepancies if the ideal and ought self-discrepancy scores were equal ($n = 48$, ideal and ought self-discrepancy scores $M = 3.08$).

Self-guide framing. During the second session, about 1 week following the first, participants were exposed to a persuasive message framed either in terms of ideals or oughts. Participants read a statement about a fictional breakfast product called Fast-Break. In the ideal self-guide framing condition, participants read that Fast-Break was the "ideal breakfast solution" and read a product endorsement that was framed in terms of ideals (see the appendix for full text). In addition, the persuasive message on the next screen began by stating that "researchers have found that people who eat a well-balanced breakfast tend to be more successful throughout the day." In the ought self-guide framing condition, participants read that Fast-Break was a "responsible breakfast" and read a product endorsement that was framed in terms of oughts (see the appendix for full text). In addition, the persuasive message on the next screen began by stating that "researchers have found that people who eat a well-balanced breakfast tend to be more responsible throughout the day."

Argument quality. The persuasive message contained either 12 strong arguments or 12 weak arguments in favor of purchasing and using Fast-Break. For example, one strong argument stated that "9 out of 10 college students said that Fast-Break was the perfect breakfast for them—it's quick, convenient, healthy, and tastes great!" The comparable weak argument stated that "3 out of 10 college students said that Fast-Break was a good breakfast for them—it's easy, tastes pretty good, and doesn't take that much time to prepare."[4] The same strong and weak arguments were used in each self-guide framing condition.

Dependent Measures

Self-guide framing manipulation check. Participants' recognition memory for the headline of the Fast-Break presentation was assessed with a multiple-choice question. Participants were asked to indicate which of four choices was the correct headline. The choices included the headline from the ideal self-guide framing condition, the headline from the ought self-guide framing condition, and two similar but incorrect choices.

Attitude measures. Immediately following the persuasive message, participants' attitudes toward trying Fast-Break for breakfast, toward the design and layout of the presentation, and toward the content of the presentation were assessed with three sets of six questions. Each of the three attitude categories were rated on 9-point semantic differential attitude scales, with endpoint labels of *unfavorable-favorable*, *unpleasant-pleasant*, *foolish-wise*, *bad-good*, *harmful-beneficial*, and *negative-positive*. Participants indicated their attitudes by pressing the number key that best represented their opinion for each scale item.

Cognitive responses. Following the attitude measures, participants were instructed to list the thoughts that occurred to them while they were looking at the Fast-Break presentation. Participants spent up to 2 minutes entering up to eight thoughts using the computer keyboard. After the thought-listing procedure, each thought that the participants listed was presented back to them by the computer to be rated as either positive, negative, neutral, or not related to Fast-Break (see Cacioppo & Petty, 1981, for additional details on the thought-listing and scoring procedure).

Current mood state. Participants next completed the eight-item differential emotions scale (DES) (see Cacioppo, Martske, Petty, & Tassinary, 1988), indicating the extent to which they currently felt merry, warm-hearted, sad, irritated, fearful, tense, disgusted, and

contemptuous on 7-point scales with endpoint labels of *not at all* to *very strongly*.

RESULTS

Self-Guide Matching

Messages that matched a participant's stronger self-guide in terms of self-guide framing (i.e., ideal self-guide framing when ideal self-guide was stronger and ought self-guide framing when ought self-guide was stronger) were classified as self-guide matches, and messages that mismatched a participant's stronger self-guide in terms of self-guide framing (i.e., ideal self-guide framing when ought self-guide was stronger and ought self-guide framing when ideal self-guide was stronger) were classified as self-guide mismatches.

The result was a 2 (self-guide matching: match or mismatch) × 2 (argument quality: strong or weak) × 2 (need for cognition: high or low) × 2 (stronger self-guide: ideal or ought) between-participants design. Dependent measures were submitted to a 2 × 2 × 2 × 2 analysis of variance (ANOVA). Participants with stronger ideal versus ought self-guides were not expected to react differently to messages that matched their stronger self-guides, but this variable was included in the analyses to examine the possibility.

Framing manipulation check. Participants' responses to the multiple-choice question on framing were classified as either correct (71.0%) or incorrect (29.0%). Although the majority of participants chose the correct answer in all conditions, the percentage of participants who chose the correct headline in the self-guide match conditions (78.3%) was significantly higher than the percentage of participants who chose the correct headline in the self-guide mismatch conditions (64.4%), $\chi^2(1, N = 193) = 3.87$, $p < .05$. The percentage of participants who chose the correct headline did not vary significantly by argument quality or need for cognition. A preliminary analysis was conducted using participants' responses to the manipulation check on the headline as a covariate. Because the results obtained using the headline check as a covariate produced the same results as those without using the headline check as a covariate, only the results obtained without the covariate are reported.

Attitude measure. Each of the items in the three sets of six 9-point semantic differential scales that measured participants' attitudes toward Fast-Break, toward the layout and design of the presentation, and toward the content of the presentation was highly correlated with the others. Thus, the 18 measures were averaged to create one global attitude measure ($\alpha = .95$).[5] The 2 × 2 × 2 × 2 ANOVA revealed a main effect of argument quality, $F(1, 177) = 105.78$, $p < .001$. As expected, messages containing strong arguments led to more favorable attitudes ($M = 6.65$) than messages containing weak arguments ($M = 4.91$). More interestingly, an interaction between self-guide matching and argument quality was significant, $F(1, 177) = 6.19$, $p = .01$. When participants read a message with self-guide framing that matched their stronger self-guide, their attitudes were more strongly affected by argument quality than when they read a message with self-guide framing that mismatched their stronger self-guide. That is, participants' attitudes in the matched conditions were more favorable if the message presented strong arguments ($M = 6.84$) than if the message presented weak arguments ($M = 4.67$), $t(1, 90) = -8.84$, $p < .001$. Participants' attitudes in the mismatched conditions were less strongly affected by the strong and weak argument quality manipulations (Ms = 6.47 and 5.12, respectively), $t(1, 99) = -5.76$, $p < .001$ (see Table 1).

In addition, the interaction between self-guide matching and argument quality was qualified by a marginal three-way interaction between self-guide matching, argument quality, and need for cognition, $F(1, 177) = 3.37$, $p < .07$. Results for high and low need for cognition participants were examined separately. Low need for cognition participants demonstrated a main effect of argument quality, $F(1, 88) = 61.58$, $p < .001$, with more favorable attitudes expressed when the message contained strong arguments ($M = 6.73$) than when the message contained weak arguments ($M = 4.93$). More importantly, the Self-Guide Matching × Argument Quality interaction also was significant, $F(1, 88) = 9.56$, $p = .003$. Low need for cognition participants' attitudes in the matched conditions were more favorable if the message presented strong arguments ($M = 7.17$) than if the message presented weak arguments ($M = 4.52$), $t(1, 38) = -6.36$, $p < .001$. Low need for cognition participants' attitudes in the mismatched conditions were less strongly affected by the strong and weak argument quality manipulations (Ms = 6.33 and 5.16, respectively), $t(1, 54) = -4.11$, $p < .001$). High need for cognition participants demonstrated only a main effect of argument quality, $F(1, 89) = 45.05$, $p < .001$. That is, high need for cognition participants' attitudes were more favorable when the message contained strong arguments ($M = 6.57$) than when the message contained weak arguments ($M = 4.89$). As expected, these effects were not qualified by any significant interactions with stronger self-guide.[6]

Cognitive responses. Participants coded their cognitive responses as positive, negative, or neutral with regard to Fast-Break or as irrelevant to Fast-Break. A thought positivity index was created by subtracting the number of negative thoughts from the number of positive thoughts and then dividing by the total number of positive and negative thoughts.[7] Positive values on the thought

TABLE 1: Attitudes and Cognitive Responses as a Function of Self-Guide Matching and Argument Quality

	Self-Guide Matching					
	Match			*Mismatch*		
Argument Quality	M	SD	n	M	SD	n
Attitudes						
Strong	6.84_b	1.15	47	6.47_b	1.21	51
Weak	4.67_a	1.20	45	5.12_a	1.13	50
Cognitive responses						
Strong	0.23_c	0.67	47	0.01_{bc}	0.68	51
Weak	-0.31_a	0.64	45	-0.09_{ab}	0.71	50

NOTE: Within each dependent variable section, means with different subscripts are significantly different from each other at $p < .05$.

positivity index indicate a predominance of positive thoughts related to Fast-Break, and negative values on the thought positivity index indicate a predominance of negative thoughts. A value of zero was obtained if a participant listed an equal number of positive and negative thoughts. A value of zero also was assigned if the participant did not list any positive or negative relevant thoughts.

The 2 × 2 × 2 × 2 ANOVA revealed a main effect of argument quality, $F(1, 177) = 17.97$, $p < .001$. Participants who read messages containing strong arguments listed thoughts that were more positive with regard to Fast-Break ($M = 0.12$) than participants who read messages containing weak arguments ($M = -0.19$). In addition, the interaction between self-guide matching and argument quality was significant, $F(1, 177) = 4.83$, $p < .03$. That is, participants' thoughts in the matched conditions were significantly more positive with regard to Fast-Break if the message presented strong arguments ($M = 0.23$) than if the message presented weak arguments ($M = -0.31$), $t(1, 90) = -3.88$, $p < .001$. In contrast, participants' thought positivity in the mismatched conditions did not differ as a result of strong and weak argument quality (Ms = 0.01 and –0.09, respectively), $t(1, 99) = -0.79$, $p = .43$ (see Table 1).

The interaction between self-guide matching and argument quality was qualified by a three-way interaction between self-guide matching, argument quality, and need for cognition, $F(1, 177) = 16.58$, $p < .001$. Results for high and low need for cognition participants were examined separately. Low need for cognition participants demonstrated a main effect of argument quality, $F(1, 88) = 18.02$, $p < .001$, such that thoughts were more positive when the message contained strong arguments ($M = 0.27$) than when the message contained weak arguments ($M = -0.17$). The Self-Guide Matching × Argument Quality interaction was also significant, $F(1, 88) = 21.26$, $p < .001$. Low need for cognition participants' thoughts in the matched conditions were significantly more positive if the message presented strong arguments ($M = 0.55$) than if the message presented weak arguments ($M = -0.60$), $t(1, 38) = -6.66$, $p < .001$. Low need for cognition participants' thoughts in the mismatched conditions did not differ as a result of strong and weak argument quality (Ms = 0.01 and 0.07, respectively), $t(1, 54) = 0.32$, $p = .75$.

High need for cognition participants demonstrated a marginal main effect of argument quality, $F(1, 89) = 3.41$, $p < .07$, such that thoughts were more positive when the message contained strong arguments ($M = -0.02$) than when the message contained weak arguments ($M = -0.22$). Again, these effects were not qualified by any significant higher order interactions.

Current mood state. Higgins (1987, 1989) noted that the activation of an ideal discrepancy results in dejection-related feelings, such as sadness or depression, and that the activation of an ought discrepancy results in agitation-related feelings, such as anxiety or nervousness. Two items from the DES (see Cacioppo et al., 1988) were used to create an index of current sadness versus anxiety mood state. Participants' ratings of how tense they felt after reading the message were subtracted from their ratings of how sad they felt to create a sadness versus anxiety mood index. Positive scores on the index referred to greater feelings of sadness than anxiety, and negative scores on the index referred to greater feelings of anxiety than sadness. A score of zero was obtained if the participant indicated that he or she felt equal levels of sadness and anxiety. To ensure that self-guide matching did not differentially affect emotions, this index was analyzed in the same 2 × 2 × 2 × 2 ANOVA as used for the other measures. No significant results were uncovered.

Mediational analyses. The attitude and thought data suggested that matching messages to an individual's dominant self-guide increased message processing. Evidence of enhanced processing comes from the fact that attitudes were more influenced by the quality of the arguments presented when the arguments were framed to match rather than mismatch the dominant self-guide. In addition, the valenced thoughts people generated were more responsive to argument quality when the message matched rather than mismatched the dominant self-guide (Petty & Cacioppo, 1986). To provide evidence that the effect of argument quality on attitudes was mediated at least in part by the thoughts generated by individuals in the matched conditions, we conducted a series of regression analyses to examine mediation as suggested by Baron and Kenny (1986).

Regression analyses were first conducted for the conditions in which the self-guide framing matched participants' stronger self-guides. First, attitude was regressed on argument quality. Argument quality was found to be a significant predictor of attitudes ($b = .68$, $p < .001$). Sec-

ond, thought positivity was regressed on argument quality. Argument quality was found to be a significant predictor of thought positivity ($b = .38$, $p < .001$). Third, attitude was regressed on argument quality and thought positivity. Thought positivity significantly predicted attitudes ($b = .26$, $p < .002$). In addition, although argument quality was still a significant predictor, the coefficient was reduced ($b = .58$, $p < .001$). Goodman's (1960) test was conducted and results established that the reduction in the path from argument quality to attitudes was significant when thought positivity was included in the regression equation ($z = 2.54$, $p < .05$).[8] This suggests that thought positivity does mediate, at least in part, the relationship between argument quality and attitudes when the message is framed to match a person's self-guide.

For comparison, the same analyses were conducted for the conditions in which self-guides were mismatched. First, attitude was regressed on argument quality, and argument quality was found to be a significant predictor of attitudes ($b = .50$, $p < .001$), although the coefficient was smaller compared to the matched condition. Second, thought positivity was regressed on argument quality. Argument quality was not found to be a significant predictor of thought positivity for self-guide mismatches ($b = .08$, $p = .43$), suggesting that thought positivity does not mediate the relationship between argument quality and attitudes for self-guide mismatches. Thus, no further analyses were conducted.[9]

Self-Discrepancy Matching

For exploratory purposes, a correlational analysis was conducted to examine the relationship between stronger self-guide and larger self-discrepancy. When treated as continuous variables, stronger self-guide and larger self-discrepancy were not related to each other, $r = -.08$, $p > .24$. Thus, matches between self-guide framing and self-discrepancies were not expected to have the same effects on information processing or persuasion as matches between self-guide framing and stronger self-guides. Nevertheless, to further confirm that matches with self-discrepancies did not account for the self-guide matching effect on processing, all prior analyses were reconducted with larger self-discrepancy as a covariate. All effects that were significant in the prior analyses remained significant.

DISCUSSION

This research demonstrated for the first time that people who vary in their chronic self-guides (i.e., ideal vs. ought) differ in their responsiveness to different kinds of persuasive messages. That is, when people are guided by ideals (i.e., their ideal guides are more readily accessible), they engage in greater processing of persuasive messages framed in terms of hopes, wishes, and dreams. However, when people are guided by oughts, they engage in greater processing of messages framed in terms of duties, responsibilities, and obligations. This greater message processing was evidenced by an increased effect of argument quality on attitudes and thought positivity in the matched versus mismatched conditions. Matched messages that contained strong arguments led to more positive thoughts than matched messages that contained weak arguments. Mismatched messages led to thoughts that were not dependent on argument quality. The same interaction pattern was evident in participants' attitudes. Furthermore, these effects were more apparent for low need for cognition participants than for high need for cognition participants, as would be expected. Low need for cognition participants appear to have been motivated to engage in more careful processing of the persuasive message by the presence of a frame that matched their own stronger self-guides. The processing of individuals high in need for cognition was not dependent on the message frame, as would be expected based on their greater enjoyment of careful thought (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Thus, matching the framing of a persuasive message to one's stronger self-guide appears to increase message processing when it ordinarily would have been low.

Although the greater processing of matched messages was consistent across the primary dependent measures, participants' attitudes also were affected by the quality of the arguments in the mismatched messages, although to a lesser extent. Of interest, mediational analyses suggested that the mechanism behind the argument quality effect for matched messages was different from the mechanism behind the argument quality effect for mismatched messages. That is, thought positivity mediated the argument quality effect on attitudes for matched messages but not for mismatched messages, suggesting a greater depth of on-line processing for matched messages than for mismatched messages. Of interest, reverse mediational analyses suggested that attitudes possibly mediated the effect of argument quality on thought positivity, which may suggest a reciprocal relationship between attitudes and thought positivity for matched messages. That is, a participant reading a matched message may begin to form her attitude as she is reading the persuasive message. She may have a favorable thought in response to the first argument, leading to a favorable initial attitude. This new positive attitude may then influence her interpretation of the next argument, leading to an even more favorable effect on her next thought. This process may continue, with thought positivity and attitudes affecting each other as she reads the message, until she is asked to report her final attitudes and thoughts. It does not seem likely that argument quality could have an effect on attitudes in the

absence of any thought about the message, but a reciprocal relationship between thoughts and attitudes seems plausible. This on-line processing does not appear to be present with mismatched messages.

Although neither thought positivity nor attitudes appear to mediate the processing of mismatched messages, it is unclear what the mediator might be. One possibility is that if people did not engage in much on-line processing of the mismatched messages, they may have demonstrated a small argument quality effect by retrieving from memory one or two of the arguments that they could recall and evaluating these arguments at the time the attitude questions were posed. In future work, it would be informative to assess message recall and to see whether argument quality effects are mediated by recall rather than valenced thoughts in the mismatched conditions. Prior research has demonstrated such evaluation-memory correlations when people are not engaged in on-line processing of information (see Hastie & Park, 1986; Mackie & Asuncion, 1990; Tormala & Petty, 2001).

The current study has implications for the strength of the attitudes that result from self-guide matching. Matches between stronger self-guides and self-guide framing led to more careful thought about the persuasive message. If self-guide matches and mismatches lead to different levels of processing, such that self-guide matches lead to more careful processing than self-guide mismatches, then self-guide matches and mismatches should lead to attitudes of different strength. Because attitudes based on careful thought tend to be stronger than those not so based (see Petty, Haugtvedt, & Smith, 1995), attitudes resulting from self-guide matches should be more persistent, resistant, and predictive of behavior than attitudes resulting from self-guide mismatches.

Although we found that self-guide matching affected the extent of information processing activity, the elaboration likelihood model of persuasion suggests that any one variable, such as self-guide framing, can take on multiple roles in persuasion situations depending on the level of elaboration in the particular context (Petty & Cacioppo, 1986; Petty & Wegener, 1998). For example, when elaboration likelihood is not constrained, as in the current research, self-guide framing may affect the amount of thought in which individuals engage. When framing matches individuals' stronger self-guides, processing is increased. The increased elaboration seen with self-guide matching could be due to either increased motivation to think carefully or increased ability to think carefully. For example, motivation might be increased because individuals find a message that is framed to match their stronger self-guides to be more personally involving due to the message's perceived self-relevance (Petty & Cacioppo, 1979; Petty, Wheeler, & Bizer, 2000).

In addition, ability to process the message may be increased because individuals' strong self-guides serve as available and accessible ways of organizing information. A message that is framed to match a strong self-guide may thus be easier for individuals to understand. Indeed, in a series of nonpersuasion studies, Higgins and his colleagues have reported evidence of both increased motivation to seek out and use matched information and increased ability to remember and efficiently evaluate matched information (Higgins, 1999).

When elaboration is low, due to disinterest in the message topic or a distracting situation, self-guide framing might be used as a peripheral cue. Individuals might have more favorable reactions to messages that are framed in ways that match their stronger self-guides and thus could be more persuaded due to the simple positive cue that was provided by the framing (e.g., "this message speaks to what I care about, so it must be good"). When elaboration is high, due to extreme interest or knowledge regarding the message topic, self-guide framing might bias the direction of the thoughts that individuals have in response to the message. Individuals might engage in more favorable elaboration of messages that are framed in ways that match their stronger self-guides. Continued exploration of the effects of self-guide matching at various levels of elaboration is necessary for a more complete understanding of the importance of self-guides in persuasion and message processing.

The current study focused on the effects of self-guide matches on information processing and persuasion. However, our data also allowed some exploration of the effects of matching a self-guide frame to one's larger self-discrepancy. Chronic self-discrepancies were independent of chronic self-guides, and self-discrepancy matching failed to produce any effects on information processing or attitudes. Perhaps there were no effects for self-discrepancies because we paired self-discrepancies with self-guide message framing rather than the outcome framing used in prior research (Tykocinski et al., 1994). If we had used outcome framing rather than self-guide framing, matching effects might have been observed. Future research should examine chronic self-discrepancies along with outcome framing and include a manipulation of argument quality. Such a study might reveal that this type of matching leads to a reduction in message processing rather than the simple negative effect on persuasion found by Tykocinski et al.[10]

In addition, future research might pair chronic self-discrepancies with self-discrepancy message framing. For example, a message designed to activate one's ideal self-discrepancy might frame a message with the following questions: "Are you as successful as you would like to be? Have you succeeded in becoming the person you aspire to be?" On the other hand, self-discrepancy fram-

ing designed to activate one's ought self-discrepancy might frame a message with questions such as: "Are you as responsible as you'd like to be? Have you met all of your obligations?" If individuals read a persuasive message with self-discrepancy framing, rather than the self-guide framing used in the current study, the negative feelings associated with self-discrepancies might be activated, leading them to avoid careful thought about the content of the message.

Another possibility is that if a self-discrepancy match activates an individual's self-discrepancy, the individual may begin to engage in ruminative thought regarding discrepancy reduction. These recurrent thoughts regarding ways to reduce one's discrepancy may be distracting and may thus interfere with message processing. This interference would then lead to the decreased processing of messages that are framed in ways that match one's stronger self-discrepancy (Petty, Jarvis, & Evans, 1996). These possibilities should be examined in future research to observe the potentially distinct effects of self-guide framing and self-discrepancy framing on message processing and persuasion.

Finally, we note that self-guide framing could be considered just one member of an important category of persuasion-related variables: Variables that relate to an individual's chronic goals. As noted earlier, one's stronger self-guide can be thought of as a chronic goal for self-improvement or as a desired end-state. People with strong ideal self-guides are motivated to match their actual self-characteristics to their ideal self-characteristics. The current study suggests that such individuals will examine a message framed to match their ideal self-guide more carefully than a message framed to match their ought self-guide. Because matching one's actual self to one's ideal self is a chronic goal, this individual may be more likely to hold attitudes that serve that goal and search for information that will inform those attitudes, just as high versus low self-monitors appear to search for information that supports social adjustive versus value expressive functions (Lavine & Snyder, 1996; Petty & Wegener, 1998; Snyder & DeBono, 1985).

More broadly, the chronic goals related to other individual difference variables, such as need for cognition (Cacioppo & Petty, 1982), may lead individuals to think more carefully about messages that are framed in ways that match their goals. A high need for cognition individual may be considered to have a chronic goal of learning more about her world and may respond to messages that highlight this goal by engaging in even more careful thought. For example, she may be motivated to engage in more effortful thought than usual when reading a news magazine that promotes itself as "the magazine for intellectuals and scholars." On the other hand, a low need for cognition individual, whose chronic goal involves conserving mental energy, may actually be motivated to engage in careful thought about a message that is framed to match his goal. For example, he may be motivated to engage in more effortful thought than usual when reading a news magazine that promotes itself as "the magazine that's easy to understand."

Matches between chronic goals and the framing of persuasive messages may lead to enhanced thought about the content of such messages, resulting in stronger attitudes that are more predictive of behavior. Further examination of the intersection between individual factors (such as chronic goals) and situational factors (such as message framing) in message processing is necessary, for both theoretical and practical purposes. In the practical realm, better understanding of the effects of self-guide framing, for example, could lead to requests for charitable assistance that are more likely to result in actual donations, military recruiting advertisements that are more likely to result in increased enlistment, and political campaign speeches that are more likely to result in precious votes.

APPENDIX
Ideal and Ought Self-Guide Framing

Ideal Self-Guide Framing

"Fast-Break: The Ideal Breakfast Solution!"

Like few new breakfast products in this decade have ever done, Fast-Break empowers individuals to get up and do something about their own health and nutrition. Ideally, everyone will try Fast-Break and even the most "intractable" breakfast problems will march toward a solution. Those who have tried Fast-Break present a picture of hope that we all can aspire to achieve. This product addresses our optimal dreams, desires, aims, and intentions—for ourselves and for the world we live in.

Ought Self-Guide Framing

"Fast-Break: The Responsible Breakfast!"

Like few new breakfast products in this decade have ever done, Fast-Break makes individuals feel that they should get up and do something about their own health and nutrition. Even the most "intractable" breakfast problems march toward a solution when everyone exercises his or her responsibility to try Fast-Break. Those who have tried Fast-Break present a picture of responsibility that we should not ignore. This product addresses our responsibilities; those things we ought to do and should do—for ourselves and for the world we live in.

NOTES

1. Self-discrepancy theory and regulatory focus theory also address the importance of beliefs about the desired end-states that an

individual's significant others hold regarding the individual. This is not addressed in the current research.

2. Research examining the effects of matching messages to the functional basis of high and low self-monitors' attitudes is merely one example of a number of research programs that have examined the effects of different kinds of matching on persuasion (e.g., Brinberg & Axelson, 1990; Brock, Brannon, & Bridgewater, 1990; Cacioppo, Petty, & Sidera, 1982; Sirgy, 1986; Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988). However, the research on the functional basis of high and low self-monitors' attitudes is easily the most researched persuasion matching area (see Petty, Wheeler, & Bizer, 2000, for a review of matching effects).

3. Higgins, Shah, and Friedman (1997) used the sum of the attribute, actual extent, and ideal/ought extent response times for the first three of four ideal and ought attributes to calculate ideal and ought self-guide strength, respectively. However, in the current study, the last three of four ideal and ought reaction time sets were used for calculation. The computer program used in the current study (obtained from Higgins's lab) did not include the "actual self" nonmatching practice items used by Higgins et al. (1997). Because participants had no practice items, they spent significantly more time on the first ideal attribute and extent set than they did on average for the last three ideal attribute and extent sets, $t(1, 192) = -15.08$, $p < .001$. Participants also spent significantly more time on the first ought attribute and extent set than they did on average for the last three ought attribute and extent sets, $t(1, 192) = -7.57$, $p < .001$. Thus, the first ideal and ought reaction time sets were viewed as practice items in the current research. With the exception of this change, we followed Higgins et al.'s (1997) procedures for measuring and calculating self-guide strength.

4. Twenty-four introductory psychology students participated in an argument quality pilot test. After reading either the strong or weak argument message, participants indicated their attitudes toward the content of the message on a series of six 9-point semantic differential scales (e.g., *bad-good*). Responses to the six scales were averaged to create a composite attitude measure ($\alpha = .96$). A one-way ANOVA revealed a main effect of argument quality, $F(1, 23) = 10.95$, $p = .003$, with the strong argument message being rated much more favorably ($M = 6.03$) than the weak argument message ($M = 3.51$).

5. A maximum likelihood factor analysis with a direct quartimin (oblique) rotation confirmed that all 18 items loaded on the first factor, with factor loadings ranging from .31 to .88.

6. Regression analyses, in which the individual difference measures (need for cognition and chronic self-guide) were treated as continuous, also were conducted. Results were similar to the ANOVAs using median splits. The ANOVAs presented in the text using the "matching" independent variable are preferred for ease of interpretation. Note that the critical two-way Self-Guide Matching × Argument Quality interaction we report is comparable to a three-way Stronger Self-Guide × Self-Guide Frame × Argument Quality interaction. This analysis is significant whether conducted in an ANOVA, $F(1, 177) = 6.26$, $p = .01$, or a regression analysis treating the individual difference variables as continuous, $b = 1.62$, $p < .02$. The Self-Guide Matching × Argument Quality × Need for Cognition interaction from the ANOVA is likewise comparable to a four-way Stronger Self-Guide × Self-Guide Frame × Argument Quality × Need for Cognition interaction. The four-way interaction approached significance in an ANOVA, $F(1, 177) = 3.37$, $p < .07$, but was not significant in a regression analysis treating the individual difference variables as continuous, $b = -0.09$, $p = .14$. Thus, although the critical overall matching by argument quality effect is reliable, the moderation by need for cognition should be treated with caution.

7. Similar analyses were conducted using a positivity index that did not correct for the total number of positive or negative relevant thoughts listed by each participant. This uncorrected index consisted simply of the number of negative thoughts subtracted from the number of positive thoughts. Because the results with the uncorrected index were nearly identical to the corrected results, only the results obtained from the corrected index are presented.

8. Goodman's (1960) test was used because it provides a sample-based (vs. population-based) estimate of the indirect effect. Another commonly used test, published by Sobel (1982), provides an approximation of this effect. Both tests provide approximately the same results for these data (see Kenny, Kashy, & Bolger, 1998, for more information).

9. Reverse mediational analyses also were performed to test whether attitudes mediated the effect of argument quality on thought positivity. When thought positivity was regressed on argument quality and attitudes in the third step for self-guide framing matches, attitudes significantly predicted thought positivity ($b = .41$, $p < .002$) but argument quality was no longer a significant predictor. This suggests that attitudes mediate the effect of argument quality on thought positivity for self-guide framing matches. Combined with the finding that thoughts mediate the effect of argument quality on attitudes in these conditions, this leads to the suggestion of a reciprocal relationship between attitudes and thought positivity. No evidence of reverse mediation or reciprocal relations between attitudes and thoughts was found for self-guide mismatches.

10. Because Tykocinski, Higgins, and Chaiken (1994) presented a message that contained only strong arguments (i.e., "the message we used contained medically based, clearly stated arguments and was very effective overall in motivating subjects to change their eating habits," p. 113), the potential negative effect on message processing was not observable. The inclusion of a weak argument message in the Tykocinski et al. study might have allowed for the observation that the persuasion effect in that study resulted from a reduction in processing of the strong arguments, leading to reduced persuasion. In contrast, if the message arguments had been weak, reduced processing can result in enhanced persuasion (Petty, Wells, & Brock, 1976). This possibility should be examined in future research.

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