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Shaping behavior through malleable self-perceptions: A test of the forced-agreement scale effect (FASE)

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ABSTRACT

Three experiments examined the effectiveness of the forced-agreement scale effect (FASE) manipulation at influencing self-perceptions of traits and consistent behaviors. The FASE manipulation forces respondents to agree (at least somewhat) with behavioral statements from previously validated questionnaires. Experiment 1A required participants to agree with items from a measure of need for cognition and to complete word jumbles. Experiment 1B employed a sensation seeking version of the FASE manipulation and examined its effect on a risky gambling task. Experiment 2 verified that the manipulation influences thought-responses, which mediate the relationship between the magnitude of the effect and a relevant consequence. All three experiments provided support for the FASE manipulation's validity. Distinct advantages and limitations of the method are discussed.

1. Introduction

Clearly, when predicting and explaining human behavior, person × situation interactionism can be a useful approach (see e.g., Bargh, Lombardi, & Higgins, 1988; Bassili & Racine, 1990; Cervone & Shoda, 1999; Diener, Larsen, & Emmons, 1984; Graziano, Habashi, Sheese, & Tobin, 2007; Lewin, 1936; Lewin, 1938; Mischel, 1968; Mischel & Shoda, 1995; Shoda, Mischel, & Wright, 1993; Thompson, Chaiken, & Hazlewood, 1993). According to Briñol and Petty (2005), major motives, such as knowledge (i.e., desire to know), consistency, self-worth, and social approval, govern human thought and action and are linked to specific individual differences. Because these motives appear to influence self-perceptions, identity, motivation, and social cognition, their associated traits are useful for uncovering the processes underlying several social psychological and cognitive phenomena (e.g., attitudes, attitude change).

However, perceptions of one's traits are usually measured, rather than manipulated, in the typical trait study. Thus, it is often unclear whether or not one's self-perceptions cause particular behaviors. To determine if a particular trait has a causal influence, one viable approach is to manipulate self-perceptions of the trait. Although self-perceptions of traits have clearly been shown to affect attitudes (see Bem, 1967; Bem, 1972; Fazio, 1987), research demonstrating more substantial effects are somewhat limited (but see Petty & Brock, 1979). Some of the existing methods used to manipulate self-perceptions include priming (e.g., Bowles & Meyer, 2008; Huang & Liu, 2005), false feedback (e.g., Lord, Ross, & Lepper, 1979; Petty & Brock, 1979), and direct instructions to behave in a particular way (Fleeson, Malanos, & Achille, 2002). Depending on the nature of the experiment and its purposes, however, such methods may not be ideal.

Thus, the purpose of the current investigation is to examine a new method of manipulating self-perceptions of traits that we term the forced-agreement scale effect (FASE). We believe this method may be more precise than methods employed previously. This research should also build on the existing literature, which demonstrates that self-perceptions are malleable, and when altered, affect trait-relevant behaviors.

In conceptualizing the FASE, we borrowed heavily from theories of biased-memory scanning (Albarracín & Wyer, 2000; Salancik & Conway, 1975; Wilson, Dunn, Bybee, Hyman, & Rotondo, 1984) and views of the self-concept as a malleable construct (DeSteno & Salovey, 1997). These perspectives hold that the self-concept can be represented in working memory and characterized by dynamic structure and content. Self-perceptions are a function of the various parts of self-knowledge that are made accessible by the particular context. We contend that methods similar to the FASE (e.g., Salancik & Conway, 1975) have inadequately verified the mechanism underlying forced (or increased likelihood of) agreement with behavioral statements. Therefore, an additional purpose of the current investigation was to examine the role of a potential mediator of the relationship between agreement and subsequent behavior (i.e., biased thought content characterized by behavioral evidence consistent with the content of agreement). Uncovering the precise mechanism at play may enhance the likelihood of successfully manipulating self-perceptions of traits.

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1.1. Forced-agreement scale

Salancik and Conway (1975) showed that self-perceptions of religiousness can be influenced using a series of carefully constructed true/false statements (e.g., "I go to church...") ending with specific adverbs (i.e., "occasionally" or "frequently"; also see Salancik, 1974). People are more likely to respond "true" to items ending with "occasionally" than they are to items ending with "frequently." Theoretically, this task causes people to recall instances in which they behaved in a way that supports their response. This increase in salience for biased information causes people to judge themselves as more or less religious. Because "open-minded" people *do not always* behave in open-minded ways and "closed-minded" people *do not always* behave in closed-minded ways (see Tett & Guterman, 2000), it is feasible to expect some behavioral information to be stored in the minds of most open- and closed-minded people that runs counter to their typical behavior. People can draw on this information when they agree with statements that run counter to their typical self-perceptions.

The FASE was also designed to make salient particular behavioral information (i.e., used as operational definitions of traits), but does not rely on likelihoods of participant-responses. Specifically, the FASE simply forces respondents to agree with a set of positively or negatively worded questionnaire items.[1] That is, respondents are presented with behavioral statements (e.g., "I like to be the life of a party.") and respond using an agreement scale: *slightly agree* (1) to *strongly agree* (6). Consistent with assumptions that people will search their memory for information that justifies agreement in biased ways (Albarracín & Wyer, 2000; Salancik & Conway, 1975), our implementation of the FASE manipulation also provided participants time to justify their agreement by using delays between items and subtle reminders of what they had just agreed to.

Similar to Petty and Brock's (1979) demonstration involving open-/closed-mindedness feedback, we theorized that when people perceive themselves to be high in a trait they are motivated to behave in ways that are consistent with that trait. Doing so would also seem to aid in justifying salient agreement with relevant statements. Thus, we expected participants to behave in ways consistent with the implications of the FASE manipulation.

2. Experiment 1a: need for cognition, performance, and persistence

The need for cognition (NFC; Cacioppo & Petty, 1982) refers to a person's desire for, and likelihood of, engaging in cognitively effortful tasks (Cacioppo, Petty, Feinstein, & Jarvis, 1996). High-NFCs find such activities to be relatively more enjoyable compared to that of low-NFCs. Although high-NFCs are no more capable of engaging in effortful thought, and appear to have no greater cognitive ability than low-NFCs, high-NFCs typically welcome effortful cognitive activities. In contrast, low-NFCs are likely to avoid such activities unless they are extrinsically motivated to engage in them.

Indeed, high-NFC has been linked with various cognitive performance measures. For instance, high-NFCs tend to exert more effort in cognitive tasks (Cacioppo, Petty, Kao, & Rodriguez, 1986) and perform more highly on anagrams than low-NFCs (Baugh & Mason, 1986). Likewise, others (Dornic, Ekehammar, & Laaksonen, 1991; Leone & Dalton, 1988) have found NFC to be positively associated with effort and performance. Interestingly, the Baugh and Mason (1986) and Dornic et al. (1991) studies also indicated that high-NFCs perceive the anagram and math tasks they completed to be less difficult than their low-NFC counterparts.

These differences in performance may be due to the well-documented (see Cacioppo et al., 1996) differences in motivation and effort exerted during cognitive tasks among high and low-NFCs. Thus, it stands to reason that high-NFCs will exert more effort when engaged in a cognitively effortful task.

We examined the validity of the FASE manipulation by testing whether or not self-perceptions of NFC affect NFC-relevant behavior. Specifically, we expected participants induced to perceive themselves as high-NFCs would perform better and persist longer in their effort on a cognitive problem that had no solution than participants induced to perceive themselves as low-NFCs.

2.1. Method

2.1.1. Participants and design

Eighty-four undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited to participate. Participants received credit as partial fulfillment of their research experience requirement. The experiment employed a one-factor design in which the questionnaire was manipulated (i.e., high-NFC, low-NFC, control).

2.1.2. Procedure

Participants completed all procedures in a private cubicle equipped with a personal computer. Instructions and stimuli were presented via experimental, computer software (Jarvis, 2006). The current experiment (and each subsequent experiment) was introduced as a pilot study of personality questionnaires and new tasks that we had yet to test with the software purchased for the lab. Thus, it was implied that the FASE manipulation and validation task were unrelated. Instructions were self-paced, and participants advanced the instructions by pressing an appropriate response key. Participants were randomly assigned to one of three conditions in which they completed one of three modified versions of the NFC scale (Cacioppo, Petty, & Kao, 1984). They then responded to a set of NFC scale items as a manipulation check. Finally, participants completed the validation task.

2.1.2.1. FASE manipulation. The low-NFC condition responded to five negatively worded items (i.e., 3, 4, 5, 7, 8) of the NFC scale using a six-point scale anchored at *agree somewhat* (1) and *agree completely* (6). The high-NFC condition responded to five positively worded items (i.e., 1, 2, 6, 10, 11) using the same six-point response scale. Control condition participants did not respond to pre-validation task items.

To ensure that participants would have time to activate information that justified their agreement, we included delays of 8–10 s between each item. While a brief "apology" was displayed during the delays, the previous item also remained on the screen.

2.1.2.2. Manipulation check. Next, all participants responded to the remaining eight items of the NFC scale as a manipulation check using the typical five-point scale anchored at *extremely uncharacteristic* (1) and *extremely characteristic* (5; Cronbach's $\alpha = .81$). No delays were implemented between items as they were with the FASE manipulation.

2.1.2.3. Validation task. Following the manipulation check, we led participants to believe that participation in the study session involved a second part; described as an unrelated pilot study. For this task, participants were asked to find as many solutions to four word jumbles, presented one at a time. It was explained that a word jumble is a set of letters that, when rearranged, form a word (e.g., E A P C H can be rearranged to form "PEACH"). Participants were instructed to type their answer into the spaces provided when they thought they had a solution. It was further explained

[1] For modified versions of methods similar to the FASE, see Petrocelli and Dowd (2009) and Tormala, DeSensi, and Petty (2007).

that for each word jumble they must use all of the letters. We led participants to believe that each word jumble had at least two solutions. However, each word jumble had one, and only one, solution. Participants were instructed to perform to the best of their ability, but were given option to type "giveup" if they could not find a solution. Each of the two "solution" screens for each word jumble was designed to time-out after five minutes. Participants were informed that if a screen timed-out, before or while they were typing a response, they were to continue with the next question. The word jumbles included the following items: N I D P L O H (dolphin); M E T C O S (comets); N Y N O A C (canyon); and T I N T I G F (fitting). The computer software recorded responses as well as the total amount of time participants had spent persisting in the task. Two response boxes for each word jumble were displayed on separate frames. Persistence was measured from the time the second response frame appeared until the participant submitted his/her response. The response frames were timed-out after 5 min if a response had not been submitted; but this did not occur for any of our participants.

2.2. Results and discussion

2.2.1. Manipulation check

We first tested whether or not our independent variable (NFC-FASE condition) affected responses on the manipulation check items. Because our participants varied in the degree to which they agreed to the FASE items, and because we believed that this variance is important to how well the FASE manipulation operates, the average agreement with the five positively worded and five negatively worded NFC scale items used in the manipulation of perceived NFC (i.e., extremity of agreement) was used as a covariate in a one-way analysis of covariance (ANCOVA); scores from the low-NFC condition were reverse-scored. As expected, the high-NFC condition reported significantly greater NFC (adj. $M = 3.91$, $SE = .13$), than the low-NFC condition (adj. $M = 3.19$, $SE = .13$), $F(1, 53) = 15.27$, $p < .001$, $\eta^2 = .22$. The covariate also reached significance, $F(1, 53) = 39.71$, $p < .001$, $\eta^2 = .43$. The control condition was not included in this analysis because it lacked a covariate value. To determine whether or not the levels of reported NFC of the low- and high-NFC conditions differed from the average NFC of the population under study, we compared the adjusted means to the expected value of 3.48[2] using the error term from the ANCOVA. Consistent with expectations, we found the high-NFC condition's adjusted mean to be significantly greater than the otherwise expected value, $t(53) = 2.50$, $p < .02$, whereas the adjusted mean of the low-NFC condition was marginally less than the otherwise expected value, $t(53) = -1.68$, $p < .10$.

2.2.2. Validation task

2.2.2.1. Performance. We viewed performance on the word jumble task in two ways. First, we simply coded whether or not participants found the correct solutions (i.e., yes = 1, no = 0) for each of the four word jumbles and summed their scores across the four items (possible score = 0–4). As expected, the NFC-FASE manipulation had an effect on this measure of performance, $F(2, 81) = 3.55$, $p < .05$, $\eta^2 = .08$. As displayed in Table 1, participants in the high-NFC condition correctly completed more word jumbles than those in the low-NFC condition. However, neither of these conditions differed significantly from the control condition.

Performance was also treated as the time needed to complete each word jumble with a correct answer. We summed the times across all four word jumbles. Consistent with expectations, the manipulation influenced completion latency, $F(2, 81) = 3.97$, $p < .05$, $\eta^2 = .09$, such that the high-NFC condition took less time than did the low-NFC condition. Again, neither of these conditions differed from the control condition.

Table 1
Descriptive statistics by need for cognition condition and post hoc results from the one-way ANOVAs (Experiment 1A).

Dependent variable	Need for cognition condition					
	Control ($n = 28$)		Low ($n = 28$)		High ($n = 28$	
	M	*SD*	*M*	*SD*	*M*	*SD*
Items correct	2.07_{ab}	1.33	1.71_{a}	1.05	2.54_{b}	1.07
Latency (s)	64.23_{ab}	36.90	75.21_{a}	28.15	51.57_{b}	28.46
Persistence (s)	143.51_{a}	94.56	88.55_{b}	83.51	145.88_{a}	109.96

Note: Means in the same row without a common subscript differ significantly at the .05 level of significance according to Fisher's least significant difference test.

2.2.2.2. Persistence. Persistence to find a second solution was summed across the four word jumbles. The NFC-FASE manipulation also had an effect on this variable, $F(2, 81) = 3.16$, $p < .05$, $\eta^2 = .07$. Consistent with expectations, the high-NFC condition persisted longer than did the low-NFC condition. Further, the low-NFC condition persisted less than the control condition.

These results indicate that self-perceptions of NFC can be manipulated successfully through the FASE manipulation, and lead to predictable and meaningful differences between the high and low-NFC conditions. Next, we conducted two replications of the current experiment using different trait measures and outcome variables.

3. Experiment 1b: sensation seeking and risk taking

The purpose of Experiment 1B was to replicate and further validate the FASE manipulation with a trait variable that is relevant to decision making and risk taking. Sensation seeking (SS) is defined as the desire for and engagement in novel, varied, complex, and arousing sensations and experiences (Zuckerman, 1994) and is often linked to risk-taking behavior (see Zuckerman, 2007). The general trait of SS is composed of four components, which includes: (1) thrill and adventure seeking; (2) experience seeking; (3) disinhibition; and (4) boredom susceptibility. Thus, it should come as little surprise that high-SSs are more likely than low-SSs to engage in activities such as dangerous sports (Freixanet, 1991; Jack & Ronan, 1998; Zuckerman, 1983), risky driving (Furnham & Saipe, 1993; Jonah, 1997) and gambling (Kuley & Jacobs, 1988; McDaniel, 2002; McDaniel & Zuckerman, 2003).

SS is operationally defined in terms of scores on the most commonly used form of the Sensation Seeking Scale, the "SSS-V" (Zuckerman, 1994). The scale includes 40 pairs of forced-choice items that require respondents to choose between one of two statements, one of which reflects a desire for sensation (e.g., "I like wild and uninhibited parties.") and one that reflects the opposite (e.g., "I prefer quiet parties with good conversation."). We found the SSS-V to be ideal for our purposes for two reasons: (1) splitting the scale to influence high and low self-perceptions of SS did not jeopardize length; and (2) the scale includes descriptive behaviors that respondents may find easy to recall, or at least imagine engaging in.

Similar to Experiment 1A, we subjected our participants to a SS-FASE manipulation and asked them to complete a relevant task immediately afterwards. The task involved responding to questions about a gambling scenario, as well as participating in an actual gambling scenario. We hypothesized that the high-SS condition would reflect greater risk taking than the low-SS condition.

[2] This was the mean value ($SD = .64$), across the same eight items, for a sample of 345 undergraduates from Wake Forest University, and is the most representative value available for the population.

3.1. Method

3.1.1. Participants and design

Seventy-nine undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited to participate. All participants received credit as partial fulfillment of their research experience requirement. The experiment employed a one-factor design in which the questionnaire was manipulated (i.e., high-SS, low-SS, control).

3.1.2. Procedure

With the exception of a different trait being manipulated from NFC, the basic procedures of the current experiment were identical to the procedures employed in Experiment 1A.

3.1.2.1. FASE manipulation. Participants were randomly assigned to one of three conditions. The low-SS condition responded to 22 negatively worded items (i.e., 1b, 2a, 3b, 5b, 6b, 7a, 8a, 11a, 14b, 15a, 16b, 17b, 18b, 20a, 21a, 23b, 24b, 25a, 26a, 28b, 29b, 39b) of the SSS-V (Zuckerman, 1994) using a six-point scale anchored at *agree somewhat* (1) and *agree completely* (6). The high-SS condition responded to 22 positively worded items (i.e., 1a, 2b, 3a, 5a, 6a, 7b, 8b, 11b, 14a, 15b, 16a, 17a, 18a, 20b, 21b, 23a, 24a, 25b, 26b, 28a, 29a, 39a) using the same six-point response scale. Bogus delays were employed between each of the SSS items used in the manipulation. Control condition participants did not respond to pre-validation task items.

3.1.2.2. Manipulation check. Next, all participants responded to 12 additional items from the SSS-V (i.e., 27a, 27b, 34a, 34b, 35a, 35b, 37a, 37b, 38a, 38b, 40a, 40b) as a manipulation check (Cronbach's $\alpha = .64$).

3.1.2.3. Validation task. Following the manipulation check, we led participants to believe that participation in the study session involved a second part (i.e., pilot test) as in Experiment 1A. We explained that we were developing a computerized blackjack game and that we wanted to test whether or not it operated properly, and whether or not our instructions were clear enough. First, we asked participants to respond to two questions: (1) "Imagine that your favorite relative gave you the gift of $500 for your birthday. Over Spring Break you decide to go to Las Vegas with some friends. You also decide to play blackjack in a casino. How much of the $500 would you take with you to gamble at the blackjack table?"; and (2) "How much do you imagine that you would bet on your first game of blackjack?"

Before "testing" the computerized blackjack game, the rules and objectives of blackjack were reviewed. We explained that the dealer would be declared the winner in the case of a tie (i.e., a push). For participating in the extra pilot study, we explained to participants that they had a chance to win a $50 drawing in which they currently held 100 tickets. We explained that their chances of winning the drawing would depend on how well they performed in a single (randomly dealt) game of blackjack and their final number of tickets. They could increase their number of tickets by placing a bet. Further, if they placed a bet and won, the number of tickets that they bet would be added to their initial 100 tickets and this total would be entered into the drawing (and vice versa if they lost). The more tickets they ended the "pilot test" with, the better their chances of winning the drawing. We used this bet (minimum of 10 and maximum of 100) as a dependent variable.

All participants were dealt the same cards – a 10 and a six – whereas the dealer's face-up card was a six. In this situation, basic strategy suggests that one stand (i.e., not take any additional cards). Thus, hitting (i.e., taking another card) is considered a risky decision in this situation. The decision to hit was coded as "1" and the decision to stand was coded as "0." All participants lost the game of blackjack (regardless of their decision), and were debriefed.

Table 2
Descriptive statistics by sensation seeking condition and post hoc results from the one-way ANOVAs (Experiment 1B).

Dependent variable	Sensation seeking condition					
	Control ($n = 26$)		Low ($n = 26$)		High ($n = 27$)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Scenario risk	$-.14_{ab}$	1.20	$-.53_{a}$	1.01	$.68_{b}$	2.44
Tickets bet	40.52_{a}	28.79	37.96_{a}	27.06	56.42_{b}	30.65
Hit/stand[A]	.56	.50	.42	.50	.69	.47

[A] Hit = 1; stand = 0. Means in the same row without a common subscript differ significantly at the .05 level of significance according to Fisher's least significant difference test.

3.2. Results and discussion

3.2.1. Manipulation check

After reverse-scoring the scores for the low-SS condition, we computed an ANCOVA using average agreement with the SSS-V items as a covariate. As expected, the high-SS condition reported significantly greater SS (adj. $M = 3.90$, $SE = .11$) than the low-SS condition (adj. $M = 3.53$, $SE = .11$), $F(1, 49) = 5.44$, $p < .03$, $\eta^2 = .10$. The covariate also reached statistical significance, $F(1, 49) = 17.70$, $p < .001$, $\eta^2 = .27$. The control condition was not included in this analysis because it lacked a covariate value. To determine whether or not the levels of reported SS of the low- and high-SS conditions differed from the average SS of the population under study, we compared the adjusted means to the expected value of 3.60[3] using the error term from the ANCOVA. Consistent with expectations, we found the high-SS condition's adjusted mean to be significantly greater than the otherwise expected value, $t(49) = 2.07$, $p < .05$, whereas the adjusted mean of the low-SS condition was not significantly different from the otherwise expected value, $t(49) = -.48$, *ns*.

3.2.2. Validation task

Because the first two dependent variables (i.e., scenarios) were significantly correlated, $r(77) = .48$, $p < .001$, we simplified the results by summing their standardized scores and treating these variables as a single index. As displayed in Table 2, the SS-FASE manipulation had an effect on this index, $F(2, 76) = 3.57$, $p < .05$, $\eta^2 = .09$. The high-SS condition was apparently more willing to take more money to the casino and bet more on the first game than the low-SS condition. However, neither of the high or low-SS conditions differed significantly from the control condition.

When it came to the game that affected their chances of winning the drawing, the SS-FASE manipulation affected the bet placed on winning the game, $F(2, 76) = 3.13$, $p < .05$, $\eta^2 = .08$. Follow-up analyses showed that the high-SS condition bet more of their tickets than both the low-SS condition and the control condition (but the latter two conditions did not differ).

Given the risky nature of a hit during the game, only a marginal effect of the SS-FASE manipulation was observed, $F(2, 76) = 1.93$, $p = .15$, $\eta^2 = .05$. However, examination of the condition means suggests that they are certainly in the direction expected; the high-SS condition appeared to take a hit more frequently than did the low-SS condition and the control condition.

Taken as a whole, these results suggest that the FASE manipulation extends to self-perceptions of SS. That is, agreeing to statements with high or low-SS implications appears to influence

[3] This was the mean value ($SD = .38$), across the same 12 items (with the same response format), for a sample of 90 undergraduates from Wake Forest University, and is the most representative value available for the population.

one's self-perceptions of their SS tendencies. Further, such self-perceptions appear to have important implications for risk-taking intentions and actual behaviors.

4. Experiment 2: test of a mechanism for the FASE

Consistent with our theorizing, the thoughts that go through a person's mind while being forced to agree with statements are believed to be biased in the direction of the content that they have agreed to. In other words, completing a FASE questionnaire is hypothesized to initiate basic self-perception processes. However, our initial validation experiments do not provide evidence for the mechanism underlying the FASE. Also, it is possible that the effects observed in Experiments 1A and 1B were due to priming or demand characteristics.[4]

Thus, the purpose of Experiment 2 was threefold. First, we examined the thought content of our participants directly after completing a NFC-FASE manipulation, similar to the one employed in Experiment 1. If the FASE implicates self-perception processes, we should observe the thoughts of participants induced to perceive themselves as having a high-NFC to be characterized primarily by content consistent with high-NFC behaviors, and vice versa for participants induced to perceive themselves as having a low-NFC.

Second, to determine whether or not priming (and to some degree demand characteristics) is involved in the FASE, we included an additional between-subjects manipulation. Specifically, half of our participants completed a FASE questionnaire for themselves, whereas the other half completed a FASE questionnaire for their best friend. We hypothesized that the effects we observed in Experiment 1A would emerge here, but only when participants completed a FASE for themselves. If priming and/or demand characteristics drive the FASE, then the same effects should be observed when another person is the target for the FASE questionnaire items. Thus, we expected an interaction to emerge between the FASE condition (high vs. low) and target (self vs. other).

Third, we also directly tested the possibility that the thought-responses, elicited by the FASE, serves as the primary mechanism for its operation. That is, we tested whether or not an index of thought-responses mediates the relationship between the FASE manipulation and a relevant criterion; in the current experiment, the persistence in an unsolvable problem. Consistent with our Experiment 1A findings, we expected participants induced to perceive themselves as high-NFCs would persist longer in the task than participants induced to perceive themselves as low-NFCs (but only when they were the target of the FASE questionnaire items, and not when another person was the target).

4.1. Method

4.1.1. Participants and design

Ninety-six undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited to participate. Participants received credit as partial fulfillment of their research experience requirement. The experiment employed a 2 (FASE condition: high-NFC vs. low-NFC) $\times$ 2 (target: self vs. best friend) between-subjects design.

4.1.2. Procedure

Many of the procedures of the current experiment were similar to those employed in Study 1A with two exceptions. First, participants were randomly assigned to one of four conditions in which they completed one of two modified versions of the NFC scale (i.e., high vs. low), which was further modified by the one of two targets of focus (i.e., self vs. best friend). They then responded to a single item from the original NFC scale (Cacioppo & Petty, 1982). Following the manipulation check, participants completed a thought-listing task. Thoughts listed in this task were coded and indexed to test the proposed mediator. Finally, participants completed the validation task.

4.1.2.1. FASE manipulation. Participants were randomly assigned to one of four conditions. These conditions were derived from two-between-subjects manipulations. The first manipulation involved the direction of the FASE items, similar to that employed in Experiment 1A. Thus, half of our participants completed a low-NFC-FASE questionnaire (i.e., items 3, 4, 5, 7, 8, 9, 12, 16, 17), and the other half completed a high-NFC-FASE questionnaire (i.e., items 1, 2, 6, 10, 11, 13, 14, 15, 18) using a six-point scale anchored at *agree somewhat* (1) and *agree completely* (6). The second manipulation involved the target of focus in the questionnaire. Half of our participants completed a FASE questionnaire for themselves using the same format as that employed in Experiment 1A, whereas the other half completed a FASE questionnaire for their best friend (e.g., "My Best Friend prefers complex to simple problems."). Delays between items were used as in the earlier experiments.

4.1.2.2. Manipulation check. Next, all participants responded to the remaining item from the original NFC scale (Cacioppo & Petty, 1982) as a manipulation check (i.e., "I prefer watching educational to entertainment programs.") using the typical five-point scale anchored at *extremely uncharacteristic* (1) and *extremely characteristic* (5).

4.1.2.3. Thought-listing task. Participants were then asked to type any thoughts that came to mind while completing the FASE items. They were presented with a maximum of eight separate screen frames, and instructed to type only one thought per frame (Cacioppo & Petty, 1981; Wegener, Downing, Krosnick, & Petty, 1995). It was explained further that if they ran out of thoughts to type, they were instructed to type "N/A" for any remaining thought-listing screen frames.

4.1.2.4. Validation task. Following the thought-listing task, participants were presented with two separate seven-letter, unsolvable word jumbles, similar to our procedures employed in Experiment 1A. Again, it was described that the task was a pilot study for a future project. The computer software recorded the total time that each participant persisted in the task.

4.2. Results and discussion

4.2.1. Manipulation check

We first tested whether or not our manipulations of the direction the FASE questionnaire and its target affected the manipulation check item using a (FASE condition: high-NFC vs. low-NFC) $\times$ 2 (target: self vs. best friend) two-way ANOVA. From this analysis, a significant main effect of FASE condition emerged, such that the high-NFC condition reported greater NFC ($M = 3.06$, $SD = 1.06$) than did the low-NFC condition ($M = 2.31$, $SD = 1.05$),

[4] We find it important to note, however, that our initial pilot studies indicated that the FASE was somewhat weaker in a paper-pencil format, which did not permit delays between items (our computerized version of the FASE implemented delays between items as well as reminders of the forced agreement content). In one paper-pencil version, the FASE did not emerge at all. It seems reasonable to suggest that a paper-pencil format of the FASE does not "invite" respondents (as much as our computerized version does) to spend extra time recalling behavioral instances that might be consistent with the content of their forced agreements. If the FASE was driven primarily by demand characteristics, one might expect the FASE effect to be stronger with the paper-pencil format than with our computerized version; because the paper–pencil format would permit respondents to focus more on the demands of the experimental situation than on the biased behavioral content that the FASE is hypothesized to induce.

$F(1, 92) = 12.35$, $p < .01$, $\eta^2 = .12$. A main effect was not observed for the target manipulation, $F(1, 92) = .38$, *ns*. However, the significant main effect was qualified by the test of the interaction, $F(1, 92) = 3.81$, $p = .05$, $\eta^2 = .04$ (see Table 3). Consistent with our hypotheses, post hoc analyses (using Fisher's least significant difference test) showed than when the target of the FASE was the self, the high-NFC condition reported significantly greater NFC than did the low-NFC condition $t(92) = 3.88$, $p < .001$. However, this difference was not observed when the target was one's best friend, $t(92) = 1.09$, *ns*.

These results further validate the FASE manipulation and suggest that the mechanism at driving the FASE does rely on priming. However, one might argue that the current experiment does not fully rule out the possibility of demand characteristics. That is, it is possible that participants who completed the FASE questionnaire for themselves possessed a greater motivation to appear consistent than those who completed the questionnaire with their best friend as the target. Thus, self-target participants may have behaved accordingly with the subsequent demands of the experiment. On the other hand, given that NFC is valued in the population under study, it seems equally possible that participants in the best friend condition might be motivated to appear as though they have an even greater NFC in contrast to their best friend; and their opportunity to do so was made available by the subsequent validation task. This reasoning is consistent with what would be expected according to Tesser's (1988) self-evaluation maintenance theory (see also Tesser & Smith, 1980). In any event, subsequent evaluation of potential demand effects operating within the FASE manipulation could be enhanced by determining whether or not the effect is moderated by a preference for consistency.

4.2.2. Thought-response index

The sample listed an average of 2.74 ($SD = 1.62$) thoughts following the manipulation check item. Two independent coders, blind to the hypotheses and experimental conditions, categorized each thought as characteristic of high-NFC for the self (e.g., "I enjoy doing these thinking activities on my leisure and curiosity."), characteristic of low-NFC for the self (e.g., "Entertainment over education anytime!"), or neutral/unrelated to NFC (e.g., "I didn't like the fact that I couldn't disagree with things."). Initial agreement between the coders was 95%. A third coder was used to resolve disagreements.

Similar to thought favorability indices used in persuasion research (see Wegener, Downing, et al., 1995; Wegener, Petty, & Smith, 1995), we created a thought-response index by dividing the difference between the frequency of thoughts consistent with high-NFC and the frequency of thoughts consistent with low-NFC by the total frequency of thoughts. We then subjected this index to the same two-way ANOVA used for the manipulation check. This analysis failed to reveal main effects of FASE condition and target (*F*s < 1.50). However, the expected interaction did reach statistical significance, $F(1, 92) = 10.31$, $p < .01$, $\eta^2 = .10$. Consistent with our hypotheses, pair-wise comparisons showed than when the target of the FASE was the self, the high-NFC condition listed more thoughts indicative of high-NFC than low-NFC than did the low-NFC condition $t(92) = 3.11$, $p < .01$. In fact, given a negative index score, the low-NFC condition appears to have listed more thoughts indicative of low-NFC than high-NFC. However, this difference was not observed when the target was one's best friend, $t(92) = -1.35$, *ns*. These results suggest that the FASE and target manipulations combined to increase the salience of instances consistent with agreement to FASE items, but only when the self was the target of the FASE manipulation.

4.2.3. Validation task

Persistence to find a second solution was summed across the two word jumbles. We subjected this sum to the same two-way ANOVA used for the manipulation check and thought-response index. This analysis failed to reveal main effects of FASE condition and target (*F*s < 3.00). However, the expected interaction did reach statistical significance, $F(1, 92) = 3.80$, $p < .05$, $\eta^2 = .04$. Consistent with our hypotheses, pair-wise comparisons showed than when the target of the FASE was the self, the high-NFC persisted longer at trying to solve unsolvable word jumbles than did the low-NFC condition $t(92) = 2.62$, $p < .02$. Also as expected, this difference was not observed when the target was one's best friend, $t(92) = -.14$, *ns*. These results suggest that the FASE and target manipulations combined to affect the persistence in a task consistent with high-NFC, but only when the self was the target of the FASE manipulation.

4.2.3.1. Mediation analysis. To examine our hypothesis that thought content, affected by the FASE manipulation, mediates the relationship between the FASE manipulation and trait consistent behaviors, we followed the recommendations of Baron and Kenny (1986). Because the scores on the manipulation check item possessed greater variance than the dummy-coded FASE conditions, and because it was more indicative of how well the two between-subjects manipulations operated, we employed it as our initial predictor. As would be expected given our earlier ANOVA analyses, this marker of the FASE potency significantly predicted persistence, $\beta = .25$, $t(94) = 2.49$, $p < .02$, as well as the thought-response index score, $\beta = .32$, $t(94) = 3.29$, $p < .01$. However, when persistence was simultaneously regressed onto both the FASE manipulation and the thought-response index, the FASE manipulation failed to emerge as a significant predictor, $\beta = .17$, $t(93) = 1.67$, $p = .10$, but the thought-response index did, $\beta = .24$, $t(93) = 2.34$, $p < .03$. A Sobel test confirmed that indirect pathway was statistically significant, $z = 2.11$, $p < .05$. These results suggest that thought content is influenced by the FASE manipulation, which in turn affects relevant behavior.

5. General discussion

The results of these experiments provide support for the validity of the FASE manipulation. The FASE manipulation affected self-perceptions, and perhaps more importantly resulted in real behavioral outcomes, suggesting that malleable self-perceptions do

Table 3
Descriptive statistics by need for cognition and target conditions (Experiment 2).

Variable	Target condition							
	Self				Best friend			
	Low-NFC		High-NFC		Low-NFC		High-NFC	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Manipulation check	2.04	.91	3.21	1.06	2.58	1.13	2.92	1.05
Thought-response index	−.09	.39	.21	.35	.13	.30	.00	.26
Persistence (s)	43.16	37.89	98.37	124.21	57.32	50.83	54.41	43.73

Note: Each of the four conditions included 24 participants.

affect behavior. Participants who viewed themselves as high or low in need for cognition (NFC) and sensation seeking (SS) behaved consistently with their self-perceptions.

We contend that the major force underlying successful FASE manipulations involves the cognitive activity that transpires from agreement with behavioral statements. We contend that people who are truly low in a trait are not oblivious to how their counterparts (i.e., people relatively high in the trait) typically behave. For instance, if people low in open-mindedness are prompted by the psychological context to think of themselves in a different way (i.e., as though they are open-minded), they should have behavioral information available from memory that suggests they are open-minded; and this information can serve as a guide for subsequent judgments and behavior. It is also possible that the FASE affects one's perceived potential or likelihood of behaving in a particular way, and does not implicate recall of actual experiences. Whatever the process, involving memory or imagination, the content of one's thought appears to be implicated by the FASE manipulation. Our findings in Experiment 2 support this reasoning. There we found that the content of thought following the FASE manipulation mediated the relationship between the FASE and behavioral outcomes.

Although people may not prefer to agree to statements unless they have a good reason for doing so, they can often generate viable confirmations from memory that can be used to justify their agreement (e.g., "I guess there was that time when I stepped on an ant..."). Thus, people may sometimes engage in behavior justification, even when they are "forced" to agree to statements that do not characterize their typical behavior. Such efforts at justification are likely to be biased, and appear to result in self-perceptions that serve as guides for future behavior. It is feasible that FASE respondents typically underestimate how much their judgments are influenced by the task and tend to feel that their behavior actually does correspond with what they were forced to agree with. We also speculate that it feels subjectively less dissonant to think of behavioral instances that are consistent with one's agreement than to agree to statements that one finds no justification for.

The FASEs demonstrated here appear to be in line with experimental demonstrations that behavior can be influenced by the activation of trait representations (e.g., Dijksterhuis et al., 1998; Fleeson et al., 2002; Tett & Guterman, 2000). We conceptualize this process to be similar to how self-schemas (Markus, 1977) and highly accessible attitudes (Fazio, 1995) can serve as guides for the interpretation of perceptual stimuli and behavior. We theorize that when a trait construct is activated, that trait functions as an interpretation frame or a guide to behavior, such that perceptual information is interpreted in line with the trait – resulting in behavioral assimilation.

To the extent that the FASE depends on biased scanning of behavioral information, it may be viewed as similar to that of a reasons-generated attitude change (Millar & Tesser, 1986; Millar & Tesser, 1989; for reviews see Wilson, Dunn, Kraft, & Lisle, 1989; Wilson & Hodges, 1992). However, the reasons-generated attitude change literature suggests that the effect is temporary as other information, not activated by the manipulation, is not entirely lost. The FASE would also seem to dissipate as other behavioral information from memory becomes accessible. On the other hand, Wheeler, DeMarree, and Petty (2007) suggested that self-perceptions resulting from priming procedures do impact behavior, and that this behavioral information can in turn affect self-perceptions. In such cases, self-perception manipulations may have lasting effects.

5.1. Consideration of other methods of manipulating self-perceptions of traits

Depending on the nature of the experiment and its purposes, other methods of manipulating self-perceptions may not be ideal. For instance, Stolz, Besner, and Carr (2005) concluded that priming can be unreliable because semantic memory is "inherently noisy" and "uncoordinated" and this would seem to include concept-based knowledge about the self. Primes may be used as either interpretation frames or standards of comparison, and thus, have very different effects on one's perceptions (Schwarz & Bless, 1992a; Stapel, Koomen, & van Der Pligt, 1997). Therefore, it comes as little surprise that researchers (Bargh, 2006; Livingston & Brewer, 2002) have questioned what exactly various priming paradigms actually prime.

Given that the activation of a single social category can play two roles [i.e., either as one's cognitive representation of a category or as a standard of comparison; see e.g., Schwarz and Bless (1992b)], targets of social comparison can be influenced by one's frame of mind and self-construal. Also, the direction of comparison is not always under the control of the researcher. Furthermore, it is not entirely clear which comparison standard (i.e., exemplars, category) will result in behavioral assimilation or contrast. For instance, Macrae et al. (1998) found evidence for assimilation when an unintentional exemplar was primed. Specifically, in one study, participants primed with the Formula One motor-racing driver, Michael Schumacher,[5] performed a word-production task significantly faster than control and no-prime condition participants. However, directly priming exemplars (e.g., Einstein), has produced behavioral contrasts (Dijksterhuis et al., 1998), whereas category primes (e.g., professor) have produced behavioral assimilations (Dijksterhuis & van Knippenberg, 1998; Dijksterhuis et al., 1998).

One obvious drawback to using false feedback is participant suspicion, as people can often distinguish between true and false feedback (see Bringmann, Balance, & Sandberg, 1971). When suspicion is high, participants may react against the implication of the feedback. Consider the experimental participant who responds "strongly disagree" to all items (scoring extremely low on the construct), and then is randomly assigned to the high false feedback condition.

Finally, directly instructing participants to behave consistently with a particular trait description (e.g., as extroverts) may be problematic with regard to demand characteristics, and relies heavily on accurate construals of the construct. We also speculate that some of the same drawbacks associated with the other methods described above may apply to direct instructions to behave in a particular way.

5.2. Advantages of the FASE manipulation

The FASE manipulation is one tool that may offer researchers three distinct advantages. First, the FASE manipulation can be paired with a validated measure. When this occurs, there is little question as to what trait is being manipulated.

Second, the FASE manipulation offers an advantage over the Salancik and Conway (1975) method. Although respondents exposed to Salancik & Conway's method are more likely to agree with some items than others (depending on the adverbs used), the potency of their method appears to be partly dependent on the information that respondents actually end up agreeing with. FASE respondents must agree (at least somewhat) with whatever information is presented.

Third, the FASE manipulation is relatively efficient. If enough time is provided for respondents to engage in biased-memory scans, the FASE manipulation seems likely to influence their thinking. The FASE manipulation also requires little debriefing and it is

[5] At the time, Schumacher was considered famous by undergraduates attending a university in Scotland.

relatively easy to design (given the existence of previously validated items).

5.3. Limitations of the FASE manipulation

As with all methods of manipulating self-perceptions, the FASE manipulation is not without its limitations. There are at least three limitations of the FASE manipulation that we think are important to keep in mind. First, we selected NFC and SS as candidates for validating the method as they can easily activate salient behavioral information. We speculate that the FASE manipulation is less likely to affect self-perceptions of more abstract psychological constructs, but this remains for future research.

Second, we speculate that the FASE manipulation may be more potent when cognitive elaboration (or NFC) is relatively low. This is because previous persuasion research (e.g., Chaiken & Baldwin, 1981; Taylor, 1975; Wood, 1982) has shown that when elaboration is relatively low, people tend to use their self-perceptions and adjust their judgments in the direction of their beliefs. However, when elaboration is relatively high people do not use their beliefs as cues. In fact, sometimes people appear to "correct" their judgments for the influences that their perceptions might have on their judgments, which can result in overcorrection (see DeSteno, Petty, Wegener, & Rucker, 2000; Wegener, Petty, et al., 1995).

Third, the FASE manipulation may be most effective with constructs measured by a substantial number of items that provide salient evidence of various behaviors. In such cases, there will be more for FASE respondents to think about, and they will be more likely to activate key, justifying behaviors from memory. It is important to note that we reserved some of the scale items in each experiment for the purpose of a manipulation check. However, subsequent use may be more potent by incorporating all of the scale items into the manipulation itself. Although some questions remain to be answered with regard to the particular mechanisms at work, it appears to be a viable method for temporarily manipulating self-perceptions and behaviors relevant to those perceptions. This method also appears to be free of many of the drawbacks associated with other methods used to manipulate self-perceptions.

Finally, with regard to the potency of the FASE, we speculate on two uncertainties. First, we employed two traits that we suspect our participants felt relatively desirable. That is, we recruited participants form a population that one might expect to find NFC and SS acceptable or socially desirable. It seems unlikely that the FASE manipulation would operate very well for socially undesirable traits (e.g., narcissism) or traits with skewed distributions of agreement (or disagreement). Second, due to randomization half of our participants were likely to match and half were likely to mismatch the condition to which they were assigned. That is, one quarter of our participants were truly high on a trait and assigned to the high-trait condition, one quarter were truly low on the trait and assigned to the low-trait condition, and the other half mismatched between their true level on the trait and the condition to which they were assigned. Thus, the "work" of the FASE manipulation may operate with one or both sets of participants. It is possible that "mismatchers" are not influenced by the FASE. In this case, one might conclude that the FASE only augments the self-perceptions of "matchers." Although these uncertainties may warrant subsequent investigation, it appears that the FASE manipulation would be a useful tool in the way of examining processes that might involve self-perception processes as well as determining causality.

6. Conclusion

In three experiments, we demonstrated that the FASE manipulation reliably affected self-perceptions of a trait as well as trait-relevant behaviors. Furthermore, we demonstrated that one of the mechanisms underlying the FASE on behaviors is that of the thought content which is influenced by the FASE manipulation. The findings of this investigation add to the literature as an example by which behavior can be shaped by salient self-perceptions. They also provide added guidance in the way of manipulating traits, to either influence behavior or study psychological processes and determine paths of causality.

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