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WHAT I DON'T RECALL CAN'T HURT ME: INFORMATION NEGATIVITY VERSUS INFORMATION INCONSISTENCY AS DETERMINANTS OF MEMORIAL SELF-DEFENSE

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According to the mnemic neglect model, people are threatened by feedback that has unfavorable implications for their central self-aspects, and, as a result, they recall it poorly. What is the locus of such poor recall (i.e., mnemic neglect)? Experiment 1 examined the role of information inconsistency. If mnemic neglect is due to expectancy violation, then it will be observed for any referent (e.g., self, friend, glowingly-described other) controlling for expectancy positivity. Mnemic neglect was obtained for the self but not a friend or a glowingly-described other. Experiment 2 disentangled the roles of information inconsistency and information negativity. Participants with positive and those with negative self-concepts both manifested mnemic neglect. Negative, rather than inconsistent, feedback drives mnemic neglect.

Being told that "you are the kind of person likely to embezzle money in the future" is not exactly the stuff dreams are made of. Such feedback hurts, especially when it comes from an objective personality test or a familiar other. Moreover, feedback of this sort may be difficult to digest even when it is purely hypothetical. In both cases, the self is threatened, albeit to a different degree. Tellingly, being informed that Chris, the proverbial person on the clapham Omnibus, is "the kind of person likely to

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embezzle money in the future" tends not to elicit the same degree of dismay and indignation. (It may even prove to be a gleeful item of gossip.)

We have initiated a research program in which we have used the person memory paradigm to examine how people process self-referent versus other-referent feedback when it has favorable or unfavorable implications for core aspects of their self-concept. We focus on recall as a barometer of psychological processes mobilized to barricade the self against threat (Sedikides, Green, & Pinter, in press).

In an effort to unravel the cognitive fabric of self-defense, we have proposed the mnemic neglect model (Sedikides & Gregg, 2003).[1] The model begins from the premise that the self is a positive, rich, and motivation-laden structure (Baumeister, 1998; Gaertner, Sedikides, Vevea, & Iuzzini, 2002; Sedikides, Gaertner, & Toguchi, 2003). The self engulfs the stimulus field to such an overwhelming degree that self-referent information is linked spontaneously to prior self-knowledge (Gilovich, Medvec, & Savitsky, 2000; Krueger, 2003; Sedikides, 2003). The model distinguishes between two types of information. One type is negative or inconsistent with self-aspects ("I would not pay back money that I owed to a friend") and is perceived as self-threatening. The other type is positive or consistent with self-aspects (e.g., "I would take care of a sick friend for several days") and is perceived as self-flattering.

More specifically, the model postulates that self-referent feedback in the format of behavioral information is processed in two stages. At the first stage, the individual appraises the plausibility of enacting each behavior on the basis of semantic self-knowledge. This appraisal occurs for both self-threatening feedback (e.g., "Am I likely to behave in such an untrustworthy manner?" "Am I likely to behave untrustworthily, in general?" "Am I really untrustworthy?") and for self-flattering feedback (e.g., "Am I likely to behave in a kind manner?" "Am I likely to behave kindly, in general?" "Am I kind?"). In the case of self-threatening feedback, processing is largely confined to the first stage and is shallow. However, in the case of self-flattering feedback, processing advances to the second stage and is elaborative or deep. For example, the behavior is compared to relevant episodic self-knowledge.

Additionally, the model draws a distinction between central and peripheral self-conceptions. The former are held with high certainty, are highly self-descriptive, and are considered personally important, whereas the latter are held with low certainty, are slightly-to-moderately self-descriptive, and are not considered particularly important (Sedikides, 1993, 1995). Feedback that threatens central self-aspects is processed shallowly (as stated above) and is recalled poorly. In contrast,

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1 Initially, being more enchanted by assonance than alliteration, we labeled our model the "inconsistency-negativity neglect model" (Sedikides & Green, 2000).

feedback that bolsters central self-aspects is processed deeply (as stated above) and is recalled relatively well.

Peripheral negative behaviors are far less disturbing than central negative behaviors, just as peripheral positive behaviors are far less uplifting than central positive behaviors. For example, the behavior "I would boast about winning a game or sporting contest," though it implies immodesty, is not particularly self-threatening because the immodest-modest trait dimension is peripheral. In a similar vein, the behavior "I wouldn't say anything if food was overcooked at a restaurant," though implying uncomplainingness, is not overly flattering to the self because again the complaining-uncomplaining trait dimension is peripheral. Given, then, the relative evaluative neutrality of peripheral negative and peripheral positive behaviors, such behaviors will be processed very shallowly and recalled particularly poorly.

To test the mnemic neglect model, we implemented an experimental paradigm that allows for a direct comparison between processing of self-referent versus other-referent information via recall (Sedikides & Green, 2000). In this paradigm, all participants are presented with 32 behaviors that describe a person. Half the participants are informed that this person is the self, the other half that this person is a hypothetical acquaintance (Chris). In either case, participants imagine that this description was generated by someone who knows them, or Chris, well. In addition, half the behaviors pertain to central self-conceptions (e.g., trustworthy-untrustworthy, kind-unkind) and half to peripheral self-conceptions (e.g., modest-immodest, uncomplaining-complaining). Orthogonal to this, half of the behaviors are negative (exemplifying traits such as untrustworthy, unkind, immodest, and complaining), and half positive (exemplifying traits such as trustworthy, kind, modest, and uncomplaining). After a brief distractor task, participants are asked, without forewarning, to recall as many behaviors as possible.

Using the above experimental paradigm, we have found that participants recall self-referent poorly compared to Chris-referent information, but only when it pertains to central negative self-aspects, such as untrustworthy and unkind. Moreover, participants protect the self against even the most innocuous of threats, that is, even when the central negative feedback is hypothetical (Sedikides & Green, 2000, Experiment 2). We labeled this form of self-defensive forgetting "mnemic neglect" (Sedikides & Gregg, 2003).

We have also tested mnemic neglect in a more realistic research setting (Sedikides & Green, 2000, Experiment 1). Participants in the self-referent condition completed a computer-administered personality inventory and ostensibly received "concrete and highly accurate information about the type of person [they were]" in the form of

one-sentence behaviors that they were "likely to perform." Participants in the Chris-referent condition followed the same procedure, but were informed that the feedback pertained to another person (i.e., Chris) who had recently completed the same personality inventory. The feedback consisted of the same 32 behaviors described earlier. The results replicated those of the previous experiment. Recall for central negative self-referent feedback was poorer than recall for all other types of feedback (i.e., central positive self-referent feedback, central negative Chris-referent feedback, and central positive Chris-referent feedback). In summary, we have found mnemic neglect both in a hypothetical and a realistic feedback setting.

Our model specifies one route through which self-defense is carried out: the allocation of suboptimal processing resources to threatening feedback. If this tenet is correct, then suboptimal processing time will result in poor recall of all behaviors, not just central negative self-referent ones. In a subsequent experiment (Sedikides & Green, 2000, Experiment 3), we manipulated behavior presentation time. Half of the participants were given ample time to process the behaviors (a conceptual replication of the previous two experiments), whereas the other half were given limited time (i.e., the time that participants presumably allot to central negative feedback) to process all behaviors. The results of the previous two experiments were replicated in the ample time condition, but not in the limited time condition. In that latter condition, central negative self-referent feedback was not selectively forgotten. Stated alternatively, when going from limited to ample reading time, recall for all behaviors increases except central negative behaviors for the self. These findings suggested that mnemic neglect is due, at least in part, to the allocation of limited processing time to central negative feedback. That is, participants defend the self by expending minimal processing resources to threatening feedback.

In the research we have discussed so far, we used several converging parameters to operationalize self-threat. Specifically, the feedback (1) was negative or inconsistent with the self, (2) pertained to central self-aspects, and (3) was high in diagnosticity. Behavioral diagnosticity refers to the extent to which a behavior is a prototypical indicator of a personality trait. Prototypical indicators (e.g., "I would not pay back money that I owed to a friend") of a trait (i.e., untrustworthy) are labeled high diagnosticity behaviors, whereas nonprototypical indicators (e.g., "I would use the toothpaste of a roommate without asking") of a trait (i.e., untrustworthy) are labeled low diagnosticity behaviors. We reasoned that high diagnosticity feedback would be more self-threatening than low diagnosticity feedback. If so, then high diagnosticity feedback would be necessary for the emergence of mnemic neglect. We addressed this issue in an experiment in

which we manipulated behavioral diagnosticity (Green & Sedikides, 2004). Aside from this manipulation, the design was identical to that of the above-mentioned experiments. Mnemic neglect was observed for high diagnosticity feedback (replicating previous experiments), but was absent for low diagnosticity feedback. This implies that feedback diagnosticity may be a necessary condition for the occurrence of mnemic neglect.

We have proposed that self-threat is a function of three parameters: information negativity/inconsistency, information centrality, and information diagnosticity. We have already established the relevance of the last two parameters. Mnemic neglect is observed when the feedback refers to central but not peripheral self-aspects (Sedikides & Green, 2000), and when the feedback is high rather than low in diagnosticity (Green & Sedikides, in press). The objective of the present article is to test the plausibility of the first parameter. More specifically, the objective of our investigation is to pinpoint the locus of mnemic neglect. Is this phenomenon due to information inconsistency pre se or information negativity per se? We report two experiments that specifically address this question.

EXPERIMENT 1: THE ROLE OF INFORMATION INCONSISTENCY

Participants hold strong expectancies for themselves, when it comes to central aspects of personality. That is, they strongly expect to behave in a trustworthy or kind manner, and not in an untrustworthy or unkind manner. However, participants hold weaker expectancies for Chris, where those aspects are concerned. In addition, when it comes to the peripheral aspects of personality, they hold weaker expectancies for both themselves and Chris. (See Sedikides & Green, 2000, Pilot Study 3.)

The logic of Experiment 1 was as follows. Inconsistent feedback violates expectancies. If information inconsistency is the crucial component of threat, then mnemic neglect ought to be observed for any referent (i.e., self or other), controlling for positivity of expectancies. Thus, if expectancies are equally positive for the self, a friend, or a person described in glowing terms, then mnemic neglect ought to be observed in all three cases. This is because threat, in the form of inconsistent feedback, will be equally potent in all cases. However (and still assuming equally positive expectancies), if mnemic neglect is found only for the self, then the argument that information inconsistency is the crucial component of threat will be undermined. There would have to be another feature of the informational array that triggers threat and consequently mnemic neglect.

Below, we report a pretest in which we assessed expectancies for the self, a close friend, a positively described unfamiliar other (Super Chris), and an unfamiliar other (Chris). Next, we report an experiment in which we examined the role of information inconsistency in mnemic neglect.

PRETEST

Participants, Experimental Design, Stimulus Materials, and Procedure

In the pretest (and both subsequent experiments), participants were (1) students at the University of North Carolina at Chapel Hill, fulfilling an introductory psychology course option, (2) tested in small groups ranging in size from 3 to 6, (3) prevented via partitions from seeing one another when seated, (4) assured of anonymity and confidentiality to keep self-presentational concerns to a minimum, and (5) randomly assigned to the between-subjects experimental conditions.

We tested 336 participants. The experimental design was a balanced 4 (referent: self, friend, Super Chris, Chris) × 2 (behavioral performance: past, future) × 2 (behavior type: central, peripheral) × 2 (behavior valence: positive, negative) mixed-type factorial, the first two factors being between-subjects and the last two within-subjects. We used the same 32 behaviors as in Sedikides and Green (2000).

Participants indicated their behavioral expectancies for one of four referents (the *referent* factor). Two referents (i.e., self and Chris) were the same as in the research summarized above (Green & Sedikides, 2004; Sedikides & Green, 2000). A third referent was a close friend: Participants thought of a close friend, wrote down the friend's initials, and indicated how they expected their friend to behave. The fourth referent (Super Chris) involved a variant of the unfamiliar other condition: Participants were instructed to form an impression of Chris based on the following glowing description:

> "Chris is a rare person. Chris is very trustworthy; friends and acquaintances can safely depend upon Chris in all circumstances. Chris is also a kind person, treating people with respect and always willing to be there for others who might need a friend. Chris is also modest, rarely acting in an arrogant or self-centered manner. Chris is not one to complain or whine, instead taking the good and the bad in life in stride and with composure."

We intended that the description convey a highly positive impression of Chris on the four relevant traits (i.e., trustworthy, kind, modest, uncom-

plaining) and, hence, convey highly positive expectancies regarding trait-relevant behaviors.

Participants also indicated their expectancies about their own or Chris' past or present behavior, or their own or Chris' future behavior (the *behavioral performance* factor). Expectancies about the self and familiar others (i.e., close friends) are based to a substantial degree on memory for past behavior. For example, one may expect oneself or someone else to keep a secret because oneself or someone else has kept secrets in the past. Nonetheless, self and friend expectancies about future behavior may not be based exclusively on memory for such behavior. In such cases, predictions may be less realistic. People may make inflated predictions about their future performance of positive novel behaviors but make deflated predictions about their future performance of negative novel behaviors (Weinstein, 1980). Of course, the possibility of a discrepancy between memory and prediction is non-existent for the Super Chris and Chris conditions, because no episodic information is available about these two referents.

Half of the participants read the behaviors in the present tense (e.g., "X is unfaithful when in an intimate relationship"), and rated the frequency of behavioral performance based on a 9-point scale, with 1 labeled "*[X] has performed this behavior extremely infrequently*" and 9 labeled "*[X] has performed this behavior extremely frequently*." The remaining half of the participants were presented with future behaviors (e.g., "X would be unfaithful in an intimate relationship"), and rated the likelihood that the referent would perform the behavior based on a 9-point scale, with 1 labeled "*extremely unlikely that [X] would perform this behavior*" and 9 labeled "*extremely likely that [X] would perform this behavior*." Hence, low numbers in the case of negative behaviors and high numbers in the case of positive behaviors denote positive expectancies.

Eight behaviors exemplified each of the two central (trustworthy-untrustworthy, kind-unkind) and two peripheral (modest-immodest, uncomplaining-complaining) trait dimensions. This constituted the *behavior type* factor. Finally, for each trait dimension, half of the behaviors were positive and half were negative. This was the *behavior valence* factor. The behaviors were presented to participants in a fixed order, randomly derived.

Results

Whether expectancies were rooted in past behavior or predicted behavior did not make a difference, the Behavioral Performance × Referent × Behavior Type × Behavior Valence interaction being nonsignificant, $F(1,$

TABLE 1. Behavioral Likelihood (Expectancy) Ratings as a Function of Referent, Trait Type, and Trait Valence in Pretest of Experiment 1

	Central Behaviors		Peripheral Behaviors	
	Negative	Positive	Negative	Positive
Super Chris	.92	7.00	1.30	5.89
Self	1.69	6.08	3.16	3.01
Friend	1.77	6.07	2.90	4.70
Chris	2.84	4.97	3.97	4.23

328) = 1.94, $p < .13$. Consequently, the following analyses collapse across the behavioral performance factor (Table 1).

The critical Referent × Behavior Type × Behavior Valence interaction was significant, $F(3, 328) = 7.39$, $p < .001$. We broke down this interaction into two Referent × Behavior Valence interactions, one for central and one for peripheral behaviors. The Referent × Behavior Valence interaction pertaining to central behaviors was significant, $F(3, 332) = 62.16$, $p < .001$. An informative pattern is revealed by explicating this interaction in terms of differences across referent level for each behavior valence category. We begin with *central negative behaviors*, $F(3, 332) = 42.71$, $p < .001$. (The contrasts used a Bonferroni-adjusted alpha level of .017.) Participants regarded Super Chris as less likely to perform such behaviors than the self ($p < .001$). Participants held very similar expectancies for self and friend ($p < .66$) but regarded the friend (and, by implication, the self) as less likely to perform such behaviors than Chris ($p < .001$). We proceed with *central positive behaviors*, $F(3, 332) = 44.83$, $p < .001$. Participants regarded Super Chris as more likely to perform such behaviors than the self ($p < .001$). Additionally, participants expressed very similar expectancies for self and friend ($p < .95$) but regarded the friend (and, by implication, the self) as more likely to perform such behaviors than Chris ($p < .001$).

The Referent × Behavior Valence interaction pertaining to peripheral behaviors was also significant, $F(3, 332) = 69.40$, $p < .001$. The patterns for both peripheral negative ($F[3, 332] = 77.63$, $p < .001$) and peripheral positive ($F[3, 332] = 34.80$, $p < .001$) behaviors were identical to those for central negative and central positive behaviors, respectively.

In summary, participants held the most positive expectancies for the Super Chris referent. They regarded Super Chris as least likely to perform (central and peripheral) negative behaviors and as most likely to perform (central and peripheral) positive behaviors. Expectancies for self and close friend did not differ significantly, and they were both higher than those for Chris.

MAIN EXPERIMENT

Participants, Experimental Design, Stimulus Materials, and Procedure

We tested 304 participants, using the same 32 behaviors as in the pretest and our past research (Sedikides & Green, 2000). The experimental design was a 4 (Referent: self, friend, Super Chris, Chris) × 2 (behavior type: central behaviors, peripheral behaviors) × 2 (behavior valence: positive behaviors, negative behaviors) × 2 (behavior type order: central behaviors presented first, peripheral behaviors presented first) × 2 (behavior valence order: positive behaviors presented first, negative behaviors presented first) mixed-type, balanced factorial. Referent, behavior type order, and behavior valence order were between-subjects factors, and behavior type and behavior valence were within-subjects factors.

As implied above, two counterbalancing factors were added. The first, *behavior type order*, involved presenting the central behaviors first to half of the participants, and presenting the peripheral behaviors first to the remaining half. The valence order of the eight behaviors for each trait was randomized under the constraint that no more than two same-valenced behaviors would appear sequentially. We used this randomization pattern (negative, positive, negative, positive, negative, negative, positive, positive) in presenting all four sets of behaviors to half of participants. We used the reverse randomization pattern (positive, negative, positive, negative, positive, positive, negative, negative) in presenting all four sets of behaviors to the remaining participants. This constituted the *behavior valence order* factor.

We were faced with a difficult decision regarding the inclusion versus exclusion of the four trait labels (i.e., trustworthy, kind, modest, uncomplaining) that we used in the pretesting of the Super Chris condition. One option was to maintain the traits in the actual experimental description of Chris, thereby running the risk of disrupting the uniform structure of the four referent descriptions. This tactic would create an obvious alternative explanation for our findings. Another option was to omit the trait labels to achieve description uniformity across referents, thereby running the risk of somewhat reducing the positivity of the Super Chris description. We chose the second, unconfounding but conservative, option. That is, we used the description of Super Chris derived from our pretest, excluding the trait labels. Our decision was facilitated by literature showing that participants extract trait labels from behavioral descriptions easily and spontaneously, especially from unambiguous descriptions resembling the ones that we used (Carlston & Skowronski, 1994; Todorov & Uleman, 2002; Trope, 1986).

The procedure adopted was similar to that of Sedikides and Green (2000, Experiment 2). Participants were simply instructed to consider the 32 hypothetical behaviors. In particular, participants in the self-referent condition were instructed to "consider the following description of yourself. Think of the description as being based on actual knowledge of people who know you well." Participants in the Chris-referent condition were instructed to "consider the description of a person named Chris. Think of the description as being based on actual knowledge of people who know Chris well. Think of the description as real."

Next, participants were presented with a 4-page booklet. Each page contained eight behaviors. All behaviors on a given page exemplified the same trait dimension. Participants were instructed to read through the booklet at their own pace. Upon completion of the booklet (i.e., after approximately 4 minutes), participants engaged in a distractor task (i.e., writing down as many of the United States as possible) for 2.5 minutes, and were then given a surprise recall test. In particular, they were instructed to recall as many behaviors as possible on a separate booklet, to write down one behavior per page in whatever order the behaviors came to mind, not to turn back to previous pages, and to try to be accurate without worrying about recalling the behaviors verbatim. The recall task lasted 5 minutes. Finally, participants wrote down what they thought the purpose of the experiment was (no participant guessed correctly), and were then debriefed, thanked, and excused.

Results

We coded the free recall data according to a "gist" criterion. In this and the next experiment, we obtained over 98% agreement between two independent judges unaware of the objectives of our research. The high degree of agreement is not surprising given that the behaviors are very specific and thus easy to code.

Intrusions constituted 4.2% of the behaviors recalled. We defined intrusions as writing the same behavior twice (e.g., "Chris would not pay back money that Chris owed to a friend" and "Chris would not pay back debt to a friend"), recalling a behavior that was not presented (e.g., "Chris is a habitual nose picker"), or changing the valence of a recalled behavior (e.g., Chris would pay back money that Chris owed to a friend"). The percentage of intrusions was comparable to that reported in experiments which used a similar methodology (Lichtenstein & Srull, 1987; Wyer, Bodenhausen, & Srull, 1984) and to that reported in our previous research (Green & Sedikides, 2004; Sedikides & Green, 2000). Also, the intrusions were evenly distributed among experimental conditions. We removed all intrusions from data analyses. In our research, we adopt the criterion of no more than two intrusions per participant. Conse-

quently, we discarded data from nine participants, because their recall protocols included three or more intrusions. Next, we entered our dependent measure, proportion of behaviors recalled, into an analysis of variance. We display the results in Table 2.

The critical Referent × Behavior Type × Behavior Valence interaction was significant, $F(3, 288) = 5.49$, $p < .01$. We broke down this interaction by examining the Referent × Behavior Valence interaction separately for central and peripheral behaviors. The Referent × Behavior Valence interaction regarding central behaviors was significant, $F(3, 288) = 4.28$, $p < .006$. Below, we explicate this interaction by comparing differences across referent levels for each behavior valence category.

We begin with *central negative* behaviors, $F(3, 288) = 8.97$, $p < .001$. (The contrasts used a Bonferroni-adjusted alpha level of .017.) Participants recalled fewer such behaviors when they engaged in self-referent than friend-referent processing ($p < .01$). Additionally, friend-referent participants tended to recall fewer behaviors than Super Chris-referent participants ($p < .06$), a finding consistent with our theoretical model given that friends are regarded as extensions of the self (Aron et al., in press; DeHart, Pelham, & Murray, 2004). The recall of Super Chris-referent participants did not differ from that of Chris-referent participants ($p < .64$). No significant differences across the referent conditions were observed in the case of *central positive* behaviors, $F(3, 288) = 1.04$, $p < .38$. The interaction can be viewed from an alternative vantage point. Self-referent ($t[75] = 4.73$, $p < .001$) and friend-referent ($t[75] = 2.36$, $p < .02$) participants recalled fewer negative than positive behaviors, but Super Chris-referent ($t[75] = .01$, $p < .91$) and Chris-referent ($t[75] = 1.12$, $p < .26$) participants did not recall statistically unequal numbers of negative versus positive behaviors.

The Referent × Behavior Valence interaction regarding *peripheral behaviors* was marginal, $F(3, 288) = 2.11$, $p < .10$. Recall for neither peripheral negative ($F[3, 288] = 1.71$, $p < .17$) nor peripheral positive ($F[3, 288] = .85$, $p < .47$) behaviors was significantly different across referent levels.

As an aside, the mnemic neglect model specifies that the most shallow level of processing will occur for peripheral behaviors—negative or positive; in fact, the model anticipates that such behaviors will be recalled even more poorly than central negative behaviors. We tested this postulate of the model by comparing the average recall of peripheral negative and positive self-referent behaviors (i.e., average of .13 + .16) with the recall of central negative self-referent behaviors (i.e., .25). (See first row of Table 2.) Consistently with the model, participants recalled fewer peripheral behaviors than central negative behaviors, $t(75) = 3.94$, $p < .001$.

The Referent × Behavior Valence interaction was significant, $F(3, 288) = 3.18$, $p < .02$. Participants recalled negative behaviors differentially, $F(3, 288) = 8.03$, $p < .001$. They recalled the fewest such behaviors when

TABLE 2. Proportion of Behaviors Recalled as a Function of Referent, Behavior Type, and Behavior Valence in Experiment 1

	Central Behaviors		Peripheral Behaviors	
	Negative	Positive	Negative	Positive
Self	.25	.38	.13	.16
Friend	.32	.38	.17	.15
Super Chris	.37	.37	.14	.19
Chris	.38	.41	.16	.17

engaging in self-referent as opposed to friend-referent processing ($p < .01$). The recall of friend-referent participants did not differ significantly from that of Super Chris participants ($p < .19$), which in turn did not differ significantly from Chris-referent participants ($p < .28$). Furthermore, participants did not recall positive behaviors differentially, $F(3, 288) = .81$, $p < .49$. Viewing the interaction from an alternative vantage point, only self-referent participants ($t[74] = 4.78$, $p < .001$) recalled fewer negative than positive behaviors (i.e., the t-tests for the friend-referent, Super Chris-referent, and Chris-referent participants were not significant). Finally, participants recalled fewer negative than positive behaviors, a behavior valence main effect $F(1, 288) = 17.72$, $p < .001$.

In summary, recall for peripheral (negative and positive) behaviors and for central positive behaviors did not vary reliably across referent conditions. However, recall for central negative behaviors did vary reliably: It was lowest in the self-referent condition, followed by the friend-referent condition, and then by the Super Chris and Chris conditions. Additionally, recall for central negative behaviors was lower than recall for central positive behaviors only in the self-referent and friend-referent conditions.

Discussion

There was a telling discrepancy between the findings of the pretest and the main experiment. In the pretest, participants expressed the most positive expectancies for Super Chris: They strongly expected Super Chris *not* to perform negative behaviors and *to* perform positive behaviors. (Of course, these unusually positive expectancies may have been due, in part, to the use of trait labels.) Furthermore, expectancies for self and friend did not differ significantly. In contrast, participants in the main experiment showed the greater degree of mnemic neglect for the self: Participants who processed feedback directed toward the self recalled

the fewest central negative behaviors and also (along with friend-referent participants) recalled fewer central negative than central positive behaviors. Stated otherwise, when the moment of truth arrived (i.e., when faced with inconsistency/negativity management), participants manifested the highest mnemic neglect for the self rather than for Super Chris or even for a close friend.

Moreover, participants displayed the highest degree of mnemic neglect for the self even when their expectancies for another person (i.e., Super Chris) were arguably more positive than those for the self, and even when their expectancies for a close friend paralleled those for the self. These findings did not support the notion that information inconsistency is the crucial determinant of mnemic neglect; rather, the findings indicate that there is more to the phenomenon of mnemic neglect than information inconsistency. If so, what is it? Why do participants show such a persistent pattern of mnemic neglect for the self? We contend that the key structural feature of feedback that triggers threat and prompts mnemic neglect is information negativity. We put this contention to a direct test in the next experiment.

EXPERIMENT 2: UNCONFOUNDING INFORMATION INCONSISTENCY AND INFORMATION NEGATIVITY

In Experiment 1 and also in our past research (Green & Sedikides, 2004; Sedikides & Green, 2000), we consciously confounded information inconsistency and information negativity. That is, behaviors consistent with expectancies were positive whereas behaviors inconsistent with expectancies were negative. This is common practice in the person memory paradigm (Smith, 1998; Srull & Wyer, 1989). In Experiment 2, however, we deliberately disentangled information inconsistency from information valence in an effort to pinpoint the primary determinant of mnemic neglect.

The issue of inconsistency versus negativity has a long history in the social psychological literature. The issue was debated in the context of cognitive dissonance theory. Are individuals driven by the motives for self-consistency or self protection? Initial formulations of the theory advocated consistency concerns, but revised versions of the theory increasingly favored a role for the self and, specifically, protecting or defending the self (Aronson, 1992; Dickerson, Thibodeau, Aronson, & Miller, 1992; Greenwald & Ronis, 1978). The issue has also been debated in the self-evaluation literature: Are individuals driven by self-verification (i.e., the affirmation of self-views) or by self-protection (Sedikides & Gregg, 2003; Sedikides & Strube, 1997; Swann, 1990; Swann, Rentfrow, & Guinn, 2002)?

In a direct test of the self-verification and self-protection perspectives (Sedikides, 1993, Experiment 4), participants with chronically negative

or positive self-conceptions (i.e., traits) were invited to the laboratory for a "self-reflection" study. Participants engaged in information-gathering: They selected three behaviors out of a panel of 12 in an attempt to find out whether they possessed the trait exemplified by these behaviors. The behaviors were either highly or poorly diagnostic of the trait under consideration. Orthogonally to this, the traits were either idiographically central or peripheral to participants. Participants selected low-diagnosticity behaviors when they attempted to find out whether they possessed central *negative* traits but not when they attempted to find out whether they possessed other categories of traits (i.e., central positive, peripheral positive, peripheral negative). Apparently, participants did not want to know whether they indeed possessed their own central negative traits, avoiding the painful behavioral validation that this process might entail. That is, they sought self-protection instead of self-verification. Experiment 2 revisits the issue in a different context, investigating whether it is the management of inconsistency/negativity, for self versus other, that determines mnemic neglect.

The procedure, stimulus materials, and design of Experiment 2 were similar to those of Experiment 1, with several exceptions. First, we used only central behaviors, as peripheral behaviors were not deemed necessary for the purposes of this experiment. Second, we presented participants with behaviors that exemplified only one central trait (i.e., trustworthy or kind). Third, we added eight negative (i.e., untrustworthy and unkind) and eight positive (i.e., trustworthy and kind) behaviors, thus doubling the existing pool to 16 behaviors per trait. Fourth, we introduced self-conception valence as a factor: We preselected participants based on whether their self-conceptions were either negative (untrustworthy or unkind) or positive (trustworthy or kind). We will label these participants as self-negative and self-positive, respectively. Subsequently, we presented participants with the eight negative and eight positive behaviors, appropriate to their condition.

We reasoned that, if information inconsistency drives the phenomenon of mnemic neglect, then a significant Self-Conception Valence × Referent × Behavior Valence interaction ought to manifest the following pattern: Negative behaviors will have a recall disadvantage in the case of self-positive participants (as in all previously reported experiments), but *positive behaviors* will have a recall disadvantage in the case of self-negative participants. On the other hand, if information valence drives the phenomenon of neglect, then the Self-Conception Valence × Referent × Behavior Valence interaction will not reach significance: Negative behaviors will have a recall disadvantage in the case of *both* self-positive and self-negative participants.

PRETEST

As stated above, we used the same 16 behaviors (four untrustworthy, four trustworthy, four unkind, and four kind) in the main experiment as in Experiment 1 and in our previous research (Sedikides & Green, 2000). However, we supplemented the "old" 16 behaviors with 16 "new" ones. The purpose of the pretest was to validate these new behaviors. Specifically, we wanted to confirm that the new behaviors referred to central self-aspects and were high in diagnosticity.

In particular, as part of the pretest, we generated and pretested four behaviors for each behavioral category. We intended that the behaviors be (1) important to perform (for positive behaviors) or important not to perform (for negative behaviors), (2) seen as clearly positive or negative, and (3) diagnostic of the respective trait. These new 16 behaviors (along with the old ones) are displayed in Appendix A.

We tested 38 participants. The behaviors were presented to participants without an accompanying referent (e.g., "Would take care of a friend's pet for the entire summer"). Participants rated how important the behaviors were to perform or not to perform. Participants rated each behavior on a 9-point scale, with anchors 1 (*not performing this behavior is extremely important to me*) and 9 (*performing this behavior is extremely important to me*), and a midpoint of 5 (*indifferent about performing or not performing this behavior*). Participants rated positive behaviors ($M = 7.16$) as important to perform relative to the scale midpoint, $t(37) = 18.65$, $p < .001$. Additionally, participants rated negative behaviors ($M = 3.36$) as important not to perform relative to the scale midpoint, $t(37) = 7.67$, $p < .001$. Also, participants rated the valence of each behavior on a 9-point scale with anchors 1 (*extremely negative*) and 9 (*extremely positive*). Participants rated positive behaviors ($M = 7.79$) higher than negative behaviors ($M = 2.64$), $t(37) = 23.82$, $p < .001$, and higher than the scale midpoint, $t(37) = 26.15$, $p < .001$. Analogously, participants rated negative behaviors lower than the scale midpoint, $t(37) = 17.62$, $p < .001$. The importance and valence results attest to the centrality of the chosen behaviors.

Additionally, participants rated the extent to which behaviors were diagnostic of the trait that they exemplified. We instructed participants to decide whether "performing the behavior would tell you a great deal about how trustworthy a person is (informative behavior), or very little about how trustworthy a person is (uninformative behavior)." Participants rated the behaviors on a 9-point scale, with anchors 1 (*extremely uninformative*) to 9 (*extremely informative*). Participants judged the behaviors diagnostic ($M = 6.69$), as a *t*-test testing for significance against the scale midpoint ($M = 5.00$) revealed, $t(37) = 8.80$, $p < .001$.

In summary, participants perceived (1) the positive behaviors as important to perform, and the negative behaviors as important not to per-

form, (2) the positive behaviors as highly positive and the negative behaviors as highly negative, and (3) all behaviors as diagnostic of trustworthiness or kindness. These results generalized across both traits, as the relevant interactions did not reach significance. Thus, the pretest established that the new behaviors pertained to central self-aspects and were high in diagnosticity (as did the old behaviors).

MAIN EXPERIMENT

Method

Selection of Participants. We selected participants based on the valence of their self-conceptions along the trait dimensions untrustworthy-trustworthy or unkind-kind. As part of a mass-testing session, 490 participants rated themselves on these two trait dimensions, as well as on several filler traits (e.g., unathletic, disorganized), using 15-point scales with anchors 1 (*occasionally untrustworthy* or *occasionally unkind*) and 15 (*never untrustworthy* or *never unkind*). Participants also completed importance and valence ratings. They responded to the questions, "How important is it for you to be trustworthy?" and "How important is it for you to be kind?" on a 15-point scale with anchors 1 (*somewhat important*) and 15 (*extremely important*). Finally, participants answered the question "How negative is being untrustworthy?" on a 15-point scale with anchors 1 (*not too negative*) and 15 (*extremely negative*). Those who rated themselves below the midpoint of the scale (i.e., 1-7) on either trustworthiness or kindness were labeled as self-negative, whereas those who rated themselves from 13-15 were labeled as self-positive. Participants who qualified, according to these criteria, were contacted and invited back to the laboratory for a follow-up session. Ninety-two percent of the invitees were responsive.

We selected 53 self-positive participants (n = 30 for trustworthiness and n = 23 for kindness) and 50 self-negative participants (n = 18 for untrustworthiness and n = 32 for unkindness). Self-positive participants had rated themselves as more trustworthy (M = 14.50) than self-negative participants (M = 4.00), $t(46) = 24.97$, $p < .001$, and as kinder (M = 14.13) than their counterparts (M = 4.50), $t(53) = 22.79$, $p < .001$. The selected participants also differed in terms of their trait importance ratings. Self-positive participants rated being trustworthy (M = 14.47) and being kind (M = 14.04) as more important to them than did self-negative participants (Ms = 11.78 and 10.09, respectively), $t(46) = 4.96$, $p < .001$ and $t(53) = 5.09$, $p < .001$, respectively. Finally, the selected participants differed in terms of their trait valence ratings. Self-positive participants rated being untrustworthy (M = 14.46) and being unkind (M = 13.59) as more negative than did self-negative participants (Ms = 12.00 and 11.16,

respectively), $t(46) = 4.39$, $p < .001$ and $t(51) = 2.80$, $p < .007$, respectively. All results generalized across the two traits.

To summarize, in comparison to self-negative participants, self-positive participants rated themselves higher on trustworthiness and kindness, regarded being trustworthy and kind as more personally important, and rated being untrustworthy and unkind as more negative.

Participants, Experimental Design, Stimulus Materials, and Procedure. We tested the 103 participants who were selected in the pretest. At least one week separated the selected participants from the actual experiment. The experimental design was a 2 (self-conception valence: negative, positive) × 2 (referent: self, Chris) × 2 (trait type: trustworthy, kind) × 2 (behavior valence order: positive behaviors presented first, negative behaviors presented first) × 2 (behavior valence: positive behaviors, negative behaviors) mixed-type factorial, in which the first four factors were between-subjects and the last factor was within-subjects. None of the effects involving the trait type factor was significant; consequently, we report analyses that collapse across this factor. Between-subjects cells sizes ranged from 11 to 15 for the remaining eight cells.

Participants were presented with trait-relevant behaviors: They read 16 behaviors that pertained either to the trait trustworthy or to the trait kind. The instructions and procedure were identical to those of Experiment 1, as was the dependent measure. No participant expressed suspicion. At the end of each experimental session, participants were debriefed, thanked, and excused.

Results

Intrusions accounted for 4.0% of recalled behaviors. No participant was excluded, because none made three or more intrusions. We display the results in Table 3.

The Referent × Behavior Valence interaction was significant, $F(1, 95) = 32.71$, $p < .001$. When engaging in self-referent processing, participants recalled fewer central negative ($M = .32$) than central positive ($M = .44$) behaviors, $t(49) = -3.37$, $p < .001$; however, when engaging in Chris-referent processing, they recalled more negative ($M = .56$) than positive ($M = .49$) behaviors, $t(52) = 3.04$, $p < .004$. Viewed differently, self-referent participants recalled fewer negative behaviors than Chris-referent participants, $t(101) = 6.97$, $p < .001$, but the two groups did not differ in their recall of positive behaviors, $t(101) = 1.51$, $p < .13$. This interaction pattern replicates previous relevant findings. (The behavior valence main effect was not significant, $F[1, 95] = 1.50$, $p < .22$.)

The critical question is whether the above two-way interaction was qualified by the triple interaction among self-conception valence, refer-

TABLE 3. Proportion of Behaviors Recalled as a Function of Self-Conception Valence[coma here] Referent[coma here] and Behavior Valence in Experiment 2

	Participants with Negative Self-Conceptions		Participants with Positive Self-Conceptions	
	Negative Behaviors	Positive Behaviors	Negative Behaviors	Positive Behaviors
Self	.36	.49	.28	.40
Chris	.60	.48	.53	.49

ent, and behavior valence interaction. If the two-way interaction were qualified, then the role of information inconsistency in driving mnemic neglect would be established. However, if the two-way interaction were unqualified, then the role of information valence in driving mnemic neglect would be entrenched. The two-way interaction was unqualified: The Self-Conception Valence × Referent × Behavior Valence was not significant, $F(1, 95) = 1.10$, $p < .30$. Participants recalled fewer negative than positive behaviors even when they considered themselves to be relatively untrustworthy or unkind — the very traits that those behaviors exemplified. The results demonstrate that information valence is the primary determinant of mnemic neglect.

Discussion

Both trustworthy and untrustworthy participants poorly recalled untrustworthy behaviors, and both kind and unkind participants poorly recalled unkind behaviors. Regardless of the positivity of their self-conceptions, participants manifested mnemic neglect for negative feedback. These results show that there is more to the phenomenon of mnemic neglect than information inconsistency. The major determinant of participants' unabashed memorial self-defense is not information inconsistency, but information negativity. Participants are intolerant even of the hypothetical possibility that they may possess negative qualities. The results of this experiment are congruent with Experiment 1 and prior research (Sedikides, 1993, Experiment 4).

Experiment 2 permitted a rival hypothesis, the self-schema hypothesis (Markus, 1977). According to this hypothesis, recall is a function not of processing resources (as the mnemic neglect model advocates; see Sedikides & Green, 2000, Experiment 3) but rather of the amount of information stored. In the present case, self-negative participants would have been expected to have a large repertoire of self-knowledge pertaining to their negative traits (i.e., untrustworthy, unkind). If so, these par-

ticipants would have linked central negative feedback to stored central negative information (i.e., self-schemas) in an effortless, spontaneous manner. Consequently, they would have displayed superior recall for central negative feedback. However, the reverse pattern obtained: Self-negative participants recalled positive feedback better rather negative. These findings rule out the self-schema hypothesis and support the mnemic neglect model.

GENERAL DISCUSSION

In an effort to unravel the cognitive underpinnings of self-defense, we proposed the mnemic neglect model (Sedikides et al., in press; Sedikides & Gregg, 2003). The defining postulate of this model is that self-threatening feedback will be recalled poorly, a phenomenon termed mnemic neglect. In the experiments reported here, self-threat was operationalized as behavioral feedback that (1) is negative or inconsistent with the self, (2) pertains to central self-aspects, and (3) is highly diagnostic of underlying self-aspects. Our past research validated information centrality and information diagnosticity as components of self-threat (Green & Sedikides, 2004; Sedikides & Green, 2000). The broad objective of the present investigation was to validate the remaining component of self-threat, namely information inconsistency/negativity. The more specific objective of the investigation was to pinpoint the locus of mnemic neglect. Is this phenomenon due to information inconsistency per se or information negativity per se?

We conducted two experiments. In Experiment 1, a quarter of participants processed feedback about the self, another quarter about a close friend, a third quarter about a person described in glowing terms (Super Chris), and a fourth about a casual acquaintance (Chris). A pretest had established that participants carried highly positive expectancies for Super Chris (i.e., higher than for the self) and for the friend (i.e., as high as for the self). Central negative feedback violated these positive expectancies. Hence, if feedback inconsistency alone were a sufficient explanation for mnemic neglect, participants would have displayed the highest levels of mnemic neglect for Super Chris, followed by self and friend, followed by Chris. However, the obtained pattern of recall did not conform to this pattern. Participants displayed the highest level of mnemic neglect for the self, followed by friend, Super Chris, and Chris. Clearly, there is more to the phenomenon of mnemic neglect than expectancies. There is something else, apart from inconsistency, that instigates hypersensitivity to threat.

Experiment 2 attempted to identify the primary determinant of mnemic neglect by deliberately disentangling information inconsistency from information negativity. The experiment tested participants whose central self-conceptions were either positive or negative.

Self-positive and self-negative participants did not significantly differ from one another: Both manifested the poorest recall for negative self-referent feedback. Thus, information negativity, not information inconsistency, was the crucial determinant of neglect. Participants are threatened by self-referent information that is negative, not by self-referent information that is inconsistent.

The results of both experiments, and especially Experiment 2, seemingly contradict past research showing that recall of information follows self-verification principles (Swann & Read, 1981). This perspective has depicted the self as being predominantly guided by consistency strivings in the processing of social feedback (Swann, 1983). One of its key predictions has been that self-positive participants will manifest inferior recall for central negative information, whereas self-negative participants will manifest superior recall for central negative information. Instead, as the results of Experiment 2 indicate, both self-positive and self-negative participants manifest inferior recall for central negative information.

We propose that the contradiction is seeming rather than real. Research from the self-verification perspective has been mostly concerned with peripheral self-views (e.g., extraversion vs. introversion) and with consensually defined negative or positive self-views (e.g., whether extraversion or introversion is generally regarded as positive). A quite different picture emerges when (1) participants themselves declare their self-conceptions as negative to them, and (2) feedback is relevant to participants' central self-conceptions. Let us illustrate this point with a hypothetical person, Theodore. He believes that he is dishonest and regards this trait as negative. Theodore has just stolen his best friend's wallet. According to the self-verification perspective, Theodore will seek out verifying information: He will want to be told from friends, relatives, and colleagues how dishonest he really is. In contrast, according to the mnemic neglect model, Theodore will avoid at any cost information relevant to his behavior and his dishonesty. Theodore will not want to process in any depth the details of his action. Indeed, the emerging portrait of the individual as self-referent information processor is quite different from the one painted by the self-verification perspective.

Our investigation has clarified the construct of threat by identifying information negativity as a key determinant of mnemic neglect. However, the psychological processes through which neglect is carried out are still not entirely clear. Is encoding failure the locus of mnemic neglect? We doubt that self-threatening information meets with complete encoding failure, given that across these and all other experiments we have conducted (Green & Sedikides, 2004; Sedikides & Green, 2000) almost a third of the central negative self-referent feedback (i.e., 31%) is retrieved. Thus, such feedback is encoded, but the corresponding memory trace, albeit available, is weak to retrieve. Is retrieval failure, then, the lo-

cus of the mnemic neglect? This is a plausible account. Self-threatening information may be blocked at retrieval. This hypothesis anticipates uneven recall but equivalent levels of recognition for central negative and central positive self-referent behaviors (Mischel, Ebbesen, & Zeis, 1976). We are currently testing this prediction through recognition and source memory experiments.

Our findings have relevance for autobiographical memory research. Indeed, they provide an explanation for the well-established empirical pattern of better autobiographical memory for positive rather than negative events (Skowronski, Betz, Thomon, & Shannon, 1991; Walker, Skowronski, & Thompson, 2003). People remember negative relative to positive life events poorly due, in part, to differences in on-line processing of the two event types. Negative events, judged as self-threatening, are allocated fewer on-line cognitive resources and are processed shallowly compared to the latter. As such, long-term memory discrepancies between the two types of events are not surprising.

Given the robustness of mnemic neglect, do people miss out on the opportunity to benefit from negative feedback? More specifically, how do people cope with central negative feedback given to them by important others (e.g., relationship partners)? Such feedback certainly cannot be neglected. Research by Wentura and Greve (2004; Greve & Wentura, 2003) suggests that, in such cases, people cope with feedback quite creatively: They misinterpret or redefine it. For example, they will downgrade the trait diagnosticity of a behavior (e.g., "I may be a poor listener, but being a poor listener does not necessarily make a bad partner"), a tactic that Wentura and Greve (2004) labelled as self-immunization. If this tactic fails, due to epistemic boundaries or reality constraints (Stapel & Schwinghammer, 2004; Klein, 2001), the next step will be the defensive downward adjustment of trait centrality (e.g., "being a good partner is not necessarily the trait that will get you ahead in life").

We cannot and do no wish to rule out the possibility that central negative self-referent feedback is processed deeply and, thus, remembered relatively well. Indeed, we would be interested in the (rather limited, we believe) conditions under which such processing occurs, and also in the individuals most prone to such processing. For example, it is likely that people do process deeply central negative feedback when it refers to self-attributes that they consider important and modifiable (Dauenheimer, Stahlberg, Spreeman, & Sedikides, 2002; Dunning, 1995). Such processing would be in the service of long-term improvement (Sedikides, 1999; Trope, Gervey, & Bolger, 2003). Moreover, we would expect for this sort of processing to be more pronounced among individuals who are repressors rather than sensitizers (Ashley & Holtgraves, 2002), state rather than action oriented (Koole, 2004), low rather than high in

self-esteem (Vohs & Heatherton, 2004), and prevention rather than promotion focused (Förster, Higgins, & Werth, 2004).

In conclusion, our research findings are compatible with other theoretical and empirical statements on the nature of self-defense. People regard the self as priceless possession and guard it with vigilance and determination, if not stubborn close-mindedness (Greenwald, 1980; Pemberton & Sedikides, 2001; Schimel, Arndt, Banko, & Cook, 2004). The more applicable to their central self-aspects the threat is perceived to be, the more vehemently the self is defended (Campbell & Sedikides, 1999; Greenwald, 1981). Where central self-aspects are concerned, people can tolerate being given feedback that clashes with their prior self-knowledge; what they cannot tolerate is being given feedback that devalues them, regardless of how negatively they view themselves.

APPENDIX. BEHAVIORS USED IN EXPERIMENT 2

TRUSTWORTHY AND UNTRUSTWORTHY BEHAVIORS

Old Behaviors

X would borrow other people's belongings without their knowledge.
X would keep secrets when asked to.
X would be unfaithful when in an intimate relationship.
X would follow through on a promise made to friends.
X would often lie to X's parents.
An employer would not rely on X to have an important project completed by the deadline.
A teacher would leave X alone in a room while taking a test and not be afraid that X would cheat.
People would be willing to tell X embarrassing things about themselves in confidence.

New Behaviors

X would remember to pick things up for a friend.
X would completely forget about an important meeting at work.
X would handle confidential tasks at work successfully.
X would not report a large source of income on X's income taxes.
When X found a wallet containing a lot of money, X would track down the owner and return it.
Even though X had a lot of work, X would not cheat on a homework assignment.
X would not pay back money that X owed to a friend.
X would gossip about a good friend to other people.

KIND AND UNKIND BEHAVIORS

Old Behaviors

X would make fun of others because of their looks.
X would offer to care for a neighbor's child when the babysitter couldn't come.
X would purposely hurt someone to benefit X.
X would help people by opening a door if their hands were full.
X would refuse to lend class notes to a friend who was ill.
X would make an obscene gesture to an old lady.
X would help a handicapped neighbor paint his house.
X would volunteer time to work as a big brother/big sister to a child in need.

New Behaviors

X would take care of a friend's pet for the entire summer.
X would ignore someone at a party that X didn't know very well.
X would take care of a sick friend for several days.
X would criticize a friend's boyfriend or girlfriend in front of this friend.
X would drive a friend around while the friend's car was being repaired.
X would help a roommate study for a difficult exam even though X had a great deal of work to do.
X would refuse to lend money to a brother or sister.
X would get in a heated argument with someone over a minor issue.

Note: X refers to either self (i.e., "I") or Chris

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