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Forgetting Our Personal Past: Socially Shared Retrieval-Induced Forgetting of Autobiographical Memories

Charles B. Stone
Université catholique de Louvain

Amanda J. Barnier and John Sutton
Macquarie University

William Hirst
The New School

People often talk to others about their personal past. These discussions are inherently selective. Selective retrieval of memories in the course of a conversation may induce forgetting of unmentioned but related memories for both speakers and listeners (Cuc, Koppel, & Hirst, 2007). Cuc et al. (2007) defined the forgetting on the part of the speaker as *within-individual retrieval-induced forgetting* (WI-RIF) and the forgetting on the part of the listener as *socially shared retrieval-induced forgetting* (SS-RIF). However, if the forgetting associated with WI-RIF and SS-RIF is to be taken seriously as a mechanism that shapes both individual and shared memories, this mechanism must be demonstrated with meaningful material and in ecologically valid groups. In our first 2 experiments we extended SS-RIF from unemotional, experimenter-contrived material to the emotional and unemotional autobiographical memories of strangers (Experiment 1) and intimate couples (Experiment 2) when merely overhearing the speaker selectively practice memories. We then extended these results to the context of a free-flowing conversation (Experiments 3 and 4). In all 4 experiments we found WI-RIF and SS-RIF regardless of the emotional valence or individual ownership of the memories. We discuss our findings in terms of the role of conversational silence in shaping both our personal and shared pasts.

Keywords: autobiographical memories, conversations, socially shared retrieval-induced forgetting, self-relevance, silence

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People often talk to others about their personal past. These discussions may reinforce mentioned memories (Blumen & Rajaram, 2008; Skowronski & Walker, 2004), implant new memories (Loftus & Pickrell, 1995), scaffold the development of autobiographical memories (Fivush, Haden, & Reese, 1996), or even forge "collective" memories (Hirst, Manier, & Apetroaia, 1997; see Hirst & Echterhoff, 2012; Rajaram & Pereira-Pasarin, 2010, for reviews). A salient feature of discussing the past is that individuals do not mention all that they can in the course of a conversation (Echterhoff, Higgins, & Levine, 2009; Marsh, 2007; Weldon, 2001). Discussing the past is selective.

This selective remembering has been shown to induce forgetting for certain types of memories in both speakers—those remembering—*and* listeners—those paying attention to the reported memories. The former is referred to as *within-individual retrieval-induced forgetting* (WI-RIF; see Anderson, Bjork, & Bjork, 1994), the latter, *socially shared retrieval-induced forgetting* (SS-RIF; Cuc, Koppel, & Hirst, 2007; Stone, Barnier, Sutton, & Hirst, 2010). The material and conditions under which WI-RIF and, particularly, SS-RIF occur are only beginning to be understood. We are interested here in whether selective remembering can induce forgetting for emotional and unemotional autobiographical memories, exploring for the first time its occurrence in both speakers and listeners. We are particularly interested in whether listening to an intimate (i.e., a boyfriend/girlfriend or a husband/wife) selectively recount a shared experience will induce forgetting in the listener.

Our interest in SS-RIF and autobiographical memories springs from two often cited observations: (a) that people build their identity, at least in part, around memories of their personal past (Brewer, 1986; Neimeyer & Metzler, 1994; Neisser, 1986) and (b) that the self is constructed, in part, through an individual's inter-

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Charles B. Stone, Research Institute for Psychological Sciences, Université catholique de Louvain, Louvain-la-Neuve, Belgium; Amanda J. Barnier and John Sutton, Australian Research Council Centre of Excellence in Cognition and Its Disorders, Department of Cognitive Science, Macquarie University, Sydney, New South Wales, Australia; William Hirst, New School for Social Research, The New School, New York, New York.

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Correspondence concerning this article should be addressed to Charles B. Stone, Research Institute for Psychological Sciences, Université catholique de Louvain, Place du Cardinal Mercier, 10, B-1348 Louvain-la-Neuve, Belgium. E-mail: charles.stone@uclouvain.be

actions with others (Mead, 1934). If SS-RIF can influence what people remember about their past, then it can serve as a cognitive mechanism via which the self is shaped through social interactions. Here we are particularly interested in how conversations may help shape an individuals own self-construal, as well as the self-construals they share with others. For example, when Phil and his girlfriend discuss their shared experience of being lost on Mt. Rainer (see McLean & Pasupathi, 2011), Phil's selective account of this experience may not only reshape his memory of the trip but also his girlfriend's. Phil may neglect to talk about the tension that erupted between them during the trip. As a result, both Phil and his girlfriend may have difficulty accessing memories of the tension when they think about the trip. Consequently, they may describe themselves in the future as good, compatible traveling companions. In this way, Phil shapes not just his own self-construal through what he recollects but also that of this girlfriend's.

At present, there is some evidence that people may be able to induce themselves to forget their own autobiographical memories, that is, WI-RIF for autobiographical memories (Barnier, Hung, & Conway, 2004). Although SS-RIF has been found for a wide variety of material, including stories (Stone et al., 2010), no one has explored, as yet, SS-RIF for autobiographical memories. It is risky to generalize from the work on WI-RIF and SS-RIF on stories, for instance, and conclude that SS-RIF can occur for autobiographical memories. For instance, the accessibility of autobiographical memories does not follow the standard forgetting curve: more temporally distant memories being less accessible than more recent ones. Rather, autobiographical memories formed during late adolescence/early adulthood are more accessible than memories, as an example, formed during middle age (see Rubin, Rahhal, & Poon, 1998, for a review). Researchers need to treat autobiographical memories as a special class of memories (see, e.g., Conway, 2001; Conway & Pleydell-Pearce, 2000; Gilboa, 2004) and test whether, for example, the findings regarding memory for word pairs or fictional stories also applies to autobiographical memories. As we argue, there are good reasons to apply this caveat to SS-RIF.

Socially Shared Retrieval-Induced Forgetting

In the original RIF paradigm developed by Anderson et al. (1994), participants studied category-exemplar pairs (e.g., *fruit-apple*, *fruit-orange*, *vegetable-broccoli*, *vegetable-pea*) and then received retrieval practice for half of the items from half of the categories. The experimenter controlled the items practiced by providing the participants with category names and the first letters of the studied exemplars (e.g., *fruit—ap____*). The participants were asked to recall the exemplar. On a final recall test, participants attempted to recall all of the originally studied exemplars when prompted with the relevant category labels. The experimental design created three types of items: Rp+, practiced items from practiced categories (e.g., *fruit—apple*); Rp−, nonpracticed items from practiced categories (e.g., *fruit—orange*); and Nrp, nonpracticed items from nonpracticed categories (e.g., *all of the vegetables*). Not surprisingly, individuals remembered more Rp+ items than Nrp items on final recall, what is known as the practice effect (Rp+ > Nrp). However, less intuitively, individuals remembered more Nrp items than Rp− items (Nrp > Rp−), what is known as the RIF effect. In other words, selective retrieval of items (Rp+) induced forgetting of related items (Rp−) relative to nonpracticed, nonrelated items (Nrp). Although various explanations for such retrieval-induced forgetting have been proposed (see, e.g., Dodd, Castel, & Roberts, 2006), an inhibitory model is the most generally accepted explanation (see Anderson, 2003; Veling & van Knippenberg, 2004; Wimber et al., 2008).

Cuc et al. (2007) extended the original RIF paradigm into a social setting by introducing a "listener." In their study, the "speaker" and the "listener" both studied the word pairs. The listener then attended to the speaker as she selectively recalled items during the retrieval practice phase. Finally, both speaker and listener recalled the original material individually. Cuc et al. argued that RIF should be observed in listeners if they concurrently, albeit covertly, retrieve along with the speaker. In such an instance, the covert, but selective remembering on the part of the listener would be similar to that of the speaker, and, as a result, both should exhibit the same RIF pattern. Cuc et al. further argued that such concurrent retrieval should be more likely to occur when listeners monitor the accuracy of the speaker's recall than, for instance, the fluidity with which the remembering occurs. As predicted, they found that both speakers and listeners demonstrated the standard RIF pattern: that is, Nrp > Rp−, when listeners were encouraged to monitor for accuracy, but only RIF for speakers when the listeners were encouraged to monitor for fluidity.

Cuc et al. (2007) not only found both WI-RIF and SS-RIF for word pairs but also extended their results to a coherent story. Additionally, Stone et al. (2010) found that WI-RIF and SS-RIF were observed for details as well as central (i.e., memorable) elements of a story. Finally, and importantly, Cuc et al. (see also Coman, Manier, & Hirst, 2009; Stone et al., 2010) found both WI-RIF and SS-RIF when the selective practice of the story was embedded within a free-flowing conversation. These results suggested that when two people discussed similar experiences or possess similar memories, then selective remembering on the part of a speaker in a conversation would induce similar forgetting in both the speaker and the listener. This convergence increases the possibility that members of a conversation will develop a shared or collective rendering of the past (see, e.g., Stone et al., 2010; see also Hirst & Manier, 2008) and, in doing so, create a basis for increasing the social connection among discussants (Hirst, 2010). This observation underscores the importance of studying SS-RIF of autobiographical memories, inasmuch as the effect of mutual RIF should have more of an effect on sociability when what is remembered—and forgotten—are events from the discussants' personal past.

RIF and Autobiographical Memories

The present study of RIF and autobiographical memory builds on a study by Barnier, Hung, and Conway (2004), which showed WI-RIF for autobiographical memories. In the elicitation phase of their study, Barnier et al. asked participants to generate autobiographical memories in response to positive, negative, and neutral category cues. They also asked participants to provide a "personal cue" for each elicited memory, which would help them to later retrieve the specific memory during the retrieval practice phase. In the learning phase, an experimenter verbally provided participants with each category cue (e.g., happy), personal cue (e.g., dancing) and autobiographical memory (e.g., when I went to my high school

prom with Danny). During the retrieval practice phase, the experimenter verbally provided participants with the category cue and the personal cue sets and asked them to generate the autobiographical memory associated with each set. However, retrieval practice was selective, and this selective practice thereby created three types of memories: practiced memories from practiced categories (Rp+), nonpracticed memories from practiced categories (Rp−), and nonpracticed memories from nonpracticed categories (Nrp). A final recall test followed the retrieval practice phase.

The results of Barnier et al. (2004) make two points worth underscoring. First, they extended RIF to autobiographical memories for the first time, establishing that RIF can be found for meaningful material relevant to the self. Second, they found that RIF occurred for positive, negative and neutral autobiographical memories. Although other researchers have only found RIF for some but not all emotional valences (e.g., for neutral items, Dehli & Brennen, 2009, and negative items, Kuhbandner, Bäuml, & Stiedl, 2009; but see Barber & Mather, 2012), they did not examine emotionally valenced autobiographical memories. The results of Barnier et al.'s study were partially supported by Wessel and Hauer (2006), who also found WI-RIF for negative autobiographical memories when individuals selectively practiced related, negative memories. Wessel and Hauer did not explicitly test positive or neutral memories.

Will the findings of Barnier et al. (2004) extend to SS-RIF? Although both WI-RIF and SS-RIF are initiated by the selective remembering of the speaker, SS-RIF only occurs if the listener concurrently retrieves. Therefore, it might be possible to observe WI-RIF for autobiographical memories but not observe SS-RIF where concurrent retrieval is not guaranteed. Consider two scenarios: a listener attending to the recollections of a mere acquaintance and the same listener attending to the recollections of an intimate. If the listener reasonably assumes that the intimate is more likely to be accurate than the acquaintance, then she might not make the effort to concurrently retrieve along with the intimate. On the other hand, she might be more likely to monitor for the accuracy of what the acquaintance recollects (see Wegner, Erber, & Raymond, 1991). SS-RIF, then, might be observed when acquaintances recollect but not when intimates recollect. Whether this line of reasoning is right or not, the possibility of differences arising across these two scenarios underscores the difficulty of applying what is known about WI-RIF to instances of SS-RIF.

At least one study suggests that SS-RIF for autobiographical memories is possible. Coman et al. (2009) found RIF for both speakers and listeners when two people discussed how they spent their day on September 11, 2001. It is difficult to generalize from this study, however. First, events such as September 11 are distinctive in that, unlike autobiographical memories more generally, confidence in the accuracy of the memory remains high even as accuracy declines (Talarico & Rubin, 2007). Second, Coman et al. only found a limit in accessibility, as measured by recognition times, rather than forgetting per se. Finally, we are interested here in the consequences of listening to others recount the listener's own autobiographical memories. Coman et al., however, examined instances in which what a speaker said about the speaker's own experiences induced forgetting in the listener for the listener's experiences.

Goals of the Present Study

The present research, then, had six goals. First, we wanted to replicate Barnier et al.'s (2004) finding that RIF is found for emotional and unemotional autobiographical memories and extend it to SS-RIF by repeating their experiment in a social setting.

Second, we wanted to extend our understanding of the conditions that elicit concurrent retrieval. Cuc et al. (2007) showed that monitoring for accuracy led to SS-RIF, but monitoring for fluidity did not. We expected that if listeners were told to monitor for accuracy of a recounted autobiographical memory, then, all other things being equal, findings similar to those for word lists or stories should emerge; that is, SS-RIF for autobiographical memories should emerge when monitoring for accuracy. We examined here, however, the effect of monitoring for self-relevance, a type of monitoring heretofore unexplored in experiments on SS-RIF. We investigated monitoring for self-relevance because it frequently occurs as one attends to recollections about one's personal past. In some instances, judgments of self-relevance may occur implicitly (Conway & Pleydell-Pearce, 2000). In other instances, the judgment might be explicit, intentionally undertaken, and accessible to consciousness.

We focused here on explicit judgments of self-relevance, building on research in which experimenters instructed individuals to rate material according to its self-relevance. This research has found that such judgments improve subsequent memory for the material (Kuiper & Rogers, 1979; Rogers, Kuiper, Kirker, 1977; Symons & Johnson, 1997). What effect would such monitoring have on SS-RIF? A speaker's selective recall might lead to concurrent, covert remembering on the part of a listener if the listener bases her self-relevance judgments on what they themselves remember about the recollected event. In such instances, we would expect to observe SS-RIF. On the other hand, listeners might not retrieve the memory of the event itself but, rather, related memories, which might help them put the recollected memory in context. In such instances, we might not observe SS-RIF. Although the latter no doubt occurs, we expected that judgments of self-relevance would usually be accompanied by acts of retrieving the recollected memory as well. We therefore expected to observe SS-RIF when listeners monitored for self-relevance.

Third, we wanted to examine the role of memory ownership. A speaker can recollect an event that they themselves experienced, or an event that was experienced by the listener. In the former, it is an autobiographical memory. In the latter, it was a memory that the speaker learned about the listener but did not experience herself. We treated this factor as a matter of ownership. Rememberers *owned* an autobiographical memory only if they themselves experienced the remembered event. They did *not own* the memory if they learned of the remembered event from another person but did not experience it themselves. Barnier et al. (2004) studied the effect of selective remembering speaker-owned autobiographical memories on the speaker's memory. Our interest here was in the selective remembering of listener-owned autobiographical memories on the listener's memory. Would SS-RIF be greater for listener-owned memories than for speaker-owned memories and would WI-RIF be greater for speaker-owned memories than for listener-owned memories? Studies of SS-RIF to date have failed to find any differences between the level of WI-RIF and SS-RIF, but none of these studies have used, as stimulus material, pre-

established memories. Ownership may diminish RIF inasmuch as it may be difficult to inhibit already well-established memories. On the other hand, Anderson et al. (1994) found that strong exemplars were more likely to lead to RIF impairment than weak exemplars. They reasoned that strong associates elicited greater competition during acts of selective practice than did weak associates. In a similar way, owned autobiographical memories may more readily compete during selective practice than unowned memories.

Fourth, we wanted to examine instances in which autobiographical memories were simultaneously speaker-owned and listener-owned, and those in which they were either speaker-owned or listener-owned, but not both. In the former instances, we refer to them as shared autobiographical memories; in the latter instance, unshared. This terminology needs to be qualified, given the multiple sense of the word *shared* (see Thompson & Fine, 1999, for a discussion of this problem). One person may *tell* another person about an experience they had. In this sense of the word, the memory is shared, but that is not the sense we are using here. Rather, we focused not on whether there was an exchange of autobiographical memories but on whether the *experience* underlying the autobiographical memory is shared. Shared autobiographical memories involved shared experiences; unshared autobiographical memories did not. Shared autobiographical events are particularly interesting to study in that the reshaping of memories elicited by RIF is more likely to have an effect on social cohesion and sociability when shared rather than unshared memories are involved (see Hirst, 2010; Hirst & Brown, 2011; Hirst, Cuc, & Wohl, 2012). Consequently, the present set of experiments was designed to investigate SS-RIF for both shared and unshared memories.

Fifth, and related to the fourth goal, we were specifically interested in examining shared memories among intimates. Other studies of social aspects of memory have shown effects for the level of intimacy. For instance, when remembering collaboratively, intimates were more susceptible to false memories and less susceptible to collaborative inhibition than were strangers (Andersson, 2001; Andersson & Rönnberg, 1995; French, Garry, & Mori, 2008). This difference was due in part to intimates forming mnemonic communities (Zerubavel, 2004) or, as Wegner and colleagues called them, "transactive memory systems" (TMS; Wegner, Erber, & Raymond, 1991; Wegner, Giuliano, & Hertel, 1985, see Peltokorpi, 2008, for a review; see also Rajaram & Pereira-Pasarin, 2010). Within a transactive memory system, intimate couples were able to use their knowledge of their partner's expertise to efficiently remember more items than they would have if collaborating with a stranger. It is not clear, however, why this explanation should apply to issues of retrieval-induced forgetting. Here the issue is not spreading the burden of remembering, but whether to concurrently retrieve. Moreover, as noted above, one might not expect SS-RIF with intimates, in that one may trust the intimate's memory and, consequently not make the effort to concurrently retrieve. Given the important role intimacy plays in other discussions of social aspects of memory, it seemed critical to consider it in the present context as well.

Finally, we wanted to replicate the finding of Hirst and his colleagues (Coman et al., 2009; Cuc et al., 2007; Stone et al., 2010) that WI-RIF and SS-RIF can occur when the selective practice is embedded in a conversation. In the conversations explored here, participants were merely asked to recall their memories. Cuc et al. (2007) argued that these instructions were enough to encourage participants to monitor for the accuracy of what the other says. But this might not be true if one is listening to another recount a shared experience. To the extent that one trusts the other's memory, then one might simply accept the validity of what is said (Koppel, Wohl, Meksin, & Hirst, 2012). Such trust may hold when someone who experienced it with you, such as an intimate partner, is recalling a self-generated autobiographical memory. The same trust may not hold if a stranger is recounting the listener's autobiographical memories, which were only briefly studied an hour before.

Four experiments addressed these six goals. All the experiments probed for the presence of WI-RIF and SS-RIF for autobiographical memories. All allowed us to contrast RIF for unshared autobiographical memories and shared autobiographical memories. Experiments 1 and 2 employed a procedure in which the experimenter instructed the speaker about what to recall during the retrieval practice phase. Experiments 3 and 4 involved free-flowing conversations. Experiments 1 and 3 used two strangers as speaker and listener; Experiments 2 and 4 used intimate couples.

Experiment 1

This experiment probed for socially shared retrieval-induced forgetting (SS-RIF) following experimenter-controlled practice, as in the first experiment of Cuc et al. (2007). The experimental design allowed us to (a) extend RIF for autobiographical memories (Barnier et al., 2004) to SS-RIF by including a listener who monitored the speaker selectively practice either the speaker's or the listener's autobiographical memories, (b) test for the effect of memory ownership, (c) test for the effect of emotional valence, and finally, (d) explore whether SS-RIF emerges when listeners make self-relevance judgments about what the speaker remembers. The experiment employed strangers as the participants.

Method

Participants and design. Forty-eight strangers (24 pairs; 18 male, 30 female) were recruited in New York City from The New School through posters displayed across campus and the general population using online postings on craigslist.org. Analyses found no significant differences between The New School and craigslist.org populations on final recall, so this variable was not analyzed further. To ensure participants did not know each other before arriving to the laboratory, they were asked to indicate how well they knew the other participant (1 = *not at all*; 7 = *very well*). All individuals responded with 1. Participants ranged in age from 18 to 63 years (M = 30.70, SD = 13.31). The experimenter compensated all participants U.S. $25. The experimenter also organized all individuals into pairs consisting of one speaker and one listener as they arrived to the laboratory. The pairs comprised 10 female-female pairs, four male-male pairs, and 10 female-male pairs. Analyses found no significant differences on final memory recall across these pair types (but see Barber & Mather, 2012). The experimental design consisted of two between-individuals factors (role—*speaker and listener* and autobiographical memory ownership—*own vs. other's*) and two within-individual factors (retrieval type—*Rp+, Rp− and Nrp*—and cue valence—*positive, negative and neutral*). The data of one person, whose final recall was more

than three standard deviations away from the mean, were removed from the final analysis. Their partner's data, however, was retained in the final analysis as the pattern of our results remained the same even if we removed him from our study. Thus, the following analyses comprised the results of 47 participants.

Materials. We used Barnier et al.'s (2004) nine category cues to elicit autobiographical memories. The cues were designed to elicit three positively valenced memories (*entertaining, happy, excitement*), three negatively valenced memories (*tragedy, sickness, horrified*), and three neutrally valenced memories (*hard-working, patient, polite*). We included a demographics sheet asking participants their sex, how old they are, their ethnicity (optional), their marital status, their level of education and their native language.

Procedure. The experiment consisted of five phases over 2 days: (a) elicitation, (b) learning, (c) retrieval practice, (d) final recall, and (e) post-experimental inquiry. The experimenter elicited the participants' autobiographical memories individually on Day 1 and then conducted the rest of the experiment on Day 2. In the elicitation phase, the experimenter ran the participants individually; in the learning and retrieval practice phases, the experimenter tested them in pairs; and in the final testing phase, the experimenter tested them individually once again.

Elicitation. Upon their arrival, the experimenter informed the volunteers that they were participating in an experiment on personal memories. He said that he would present cues to them verbally and that they must generate a specific, personal autobiographical memory from any part of their life as quickly as possible in response to each cue. The experimenter defined a specific memory as "a unique, single event that you have experienced, typically measured in seconds, minutes, or even hours, but not days" (see Barnier et al., 2004, p. 463). The experimenter then told participants that each cue would be presented multiple times, and they needed to generate unique memories for each presentation of the cue. The presentation of the cues was random with the only restriction being that the same cue was not presented consecutively. The experimenter also told participants that their memories needed only to be 10–15 words in length. He instructed participants to say "yes" as soon as they had a memory in mind and then to recall the memory aloud. The experimenter wrote down the memory, as well as recorded it on a micro-cassette recorder. To ensure memories were elicited, the experimenter provided the participants with as much time as needed to generate them. The experimenter measured the time from the beginning of the verbal presentation of the cue to the point when the participants uttered, "yes." After each memory generation, the experimenter asked participants to estimate how old they were at the time of the event, to rate the memory in terms of clarity ("how clear is your memory of the event"; 1 = *not at all clear*, 7 = *extremely clear*) and to rate the emotional valence ("how negative or positive is your memory of this event"; 1 = *very negative*, 4 = *neither negative nor positive*, 7 = *very positive*). Finally, for each memory, the experimenter asked participants to provide a "personal cue." This was described as a word that would remind participants of the stated event, if asked about it again. Participants generated, described, dated, and rated memories for each cue until 30 memories were elicited to the nine category cues—four memories for each of the six experimental category cues (e.g., happy, excitement; tragedy, horrified; patient, hardworking) and two memories to each of three filler category cues (e.g., entertaining, sickness, polite). The two memories elicited for each of the three filler categories were presented at the beginning and end of the list of memories during the learning and retrieval practice phase to control for primacy and recency effects. Thus, only the 24 memories elicited from the six experimental categories acted as Rp+, Rp−, and Nrp items. All the category cues were counterbalanced between filler and experimental categories to ensure that all cues were used to elicit Rp, Nrp, and filler autobiographical memories (see Appendix).

Learning. The learning phase commenced on the second day. The experimenter paired participants based upon their availability. Only one participant's memories from the pair were used in each experiment. Thus, for one member of the pair, the memories were autobiographical, that is, owned; for the other member, the memories were new material, that is, unowned. This was assigned based on the participant's arrival to the laboratory. The experimenter introduced the members of the pairs to each other and instructed them that the memories they were about to hear might be either their own or the memories of an individual not currently participating in the experiment. Thus, one of the participants was provided his own memories to learn. However, the other participant in the pair was completely unaware as to whether the memories provided were indeed the partner's memories (which was the case) or the memories of a complete stranger. Thus, in the minds of these participants, the memories may have been new to both participants. Furthermore, the experimenter did not tell participants for whom the material was "new" that the memories were in fact from the other person in their pair in order to protect the privacy of participants. According to the information supplied during the debriefing, these participants stated that they never became aware of the origin of the practiced memories.

In the learning phase, the experimenter verbally provided participants with 30 category cue, personal cue, and elicited memory associations, we referred to these as *memory triads.* The experimenter explained to the participants that their task was to learn the association between the category cue, personal cue, and the elicited memory. Participants had 20 s to study each triad before the experimenter moved onto the next triad (see Barnier et al., 2004). The experimenter presented three of the filler triads first (one from each valence) and the other three filler triads last (again, one from each valence). The order of the filler triads was randomly determined and those appearing first and last were counterbalanced. In between these filler sets were the experimental memory triads. In the elicitation phase, we solicited four memories for each of the six cues, thereby creating four memory triads for each cue. In order to minimize connections between the memory triads during the learning phase, we presented one triad per cue before presenting another triad from the same cue. That is, the presentation was blocked. The order of the memories within a block was random. In other words, there were four experimental blocks, consisting of six critical memories, two positive, two negative, and two neutral. We refer to the memories contained in the experimental triads as the *critical memories*. After supplying the 30 triads, the experimenter indicated that this phase of the experiment was finished.

Retrieval practice. The retrieval practice phase commenced immediately after the learning phase. The experimenter informed participants that one of them (to be called the speaker) would receive extra practice for some, but not all of the memories studied during the learning phase. The experimenter told the speakers that

they would be verbally provided a category cue (e.g., happy) and the associated personal cue (e.g., dancing). Their goal was to recall aloud the memory associated with the category cue and personal cue. The experimenter informed speakers that they would have 20 s to think of the correct memory.

Prior to commencing retrieval practice, the experimenter handed the listener a self-relevance sheet. He instructed the listener to rate how relevant the memories generated by speakers were to herself, that is, to her personal identity (1 = *low self-relevance*; 7 = *high self-relevance*). If the memories were not the listener's, the experimenter told the listener to base her ratings on events she had experienced in the past that were similar to the memories selectively practiced by the speaker. The experimenter instructed the listener neither to help nor correct the speaker if he failed to remember the memory accurately or within the allotted time. In instances when the speaker was unable to retrieve the memory, the experimenter instructed the listener to leave the rating blank. The experimenter provided no specific feedback for either correct or incorrect responses. After a correct/incorrect response or after 20 s elapsed, the experimenter proceeded to the next trial.

Half of the pairs received retrieval practice on the memories elicited from the speaker during the elicitation phase; the other half received retrieval practice on memories elicited from the listener during the elicitation phase. Thus, in one condition, the speaker "owned" the memories, and the listener did not. In the other condition, the listener "owned" the memories, and the speaker did not.

As in the learning phase, three filler sets began the practice phase and three ended it. The intermediate practice trials consisted of only Rp sets. For all the Rp sets only two of the four triads associated with each cue in the set were presented. Thus, the practice phase involved six filler memory triads and six Rp memory triads. The memories from the unpracticed sets (the Nrp sets) were classified as Nrp. The unpracticed memories from the practiced Rp sets were classified as Rp−. The practiced memories from the Rp sets were classified as Rp+. The memory triads were practiced three times. As a result, there were 36 practice trials. The order of the practiced memories was randomly determined. The selection of the memories to be practiced from a category was counterbalanced; speakers were either provided the first and third or the second and fourth memories from the Rp categories (see Barnier et al., 2004). No two memories associated with the same category cue were practiced consecutively.

Final recall. The experimenter provided participants with a 10-min distraction task between the retrieval practice phase and the final recall. During the distraction period, the pair was presented with a Sudoku puzzle to complete. After this distraction, the experimenter informed participants that the next phase would be the last, and it would be completed individually. In separate rooms, participants sat in front of a computer screen. The instructions on the screen informed participants that they would be given all nine category cues for 60 s each (see Barnier et al., 2004). Participants had to verbally recall as many of the memories for each of the categories as possible from the original list of memories provided *during the learning phase*, not just those that received extra practice. The experimenter provided participants with microcassette recorders to record their recall. After they finished reading the instructions, participants pressed any key to be presented with the first category cue. They then proceeded to the next category cue after 60 s elapsed. After they finished with all nine cues, the experimenter instructed participants to complete a demographics sheet.

Post-experimental inquiry. Immediately after the final recall phase, the experimenter asked participants about their experiences throughout the experiment. Specifically, he asked how easy or difficult it was to learn the category cue-personal cue-autobiographical memory triads, retrieve the memories during retrieval practice and recall the memories at final recall (1 = *extremely easy*; 7 = *extremely hard*).

Results and Discussion

First, we report the mnemonic characteristics of the autobiographical memories elicited on day one. We ask, in particular, whether each emotional cue elicited appropriate emotional memories. Second, we report speakers' success rate during the retrieval practice phase as well as listeners' ratings of self-relevance. Finally, and most important, we report the final recall data and focus on WI-RIF, SS-RIF, and the role of memory ownership and cue valence. Preliminary analyses revealed no difference on final recall according to age, gender, ethnicity, marital status, education, or native language, and so these variables were not analyzed further.

Memories at elicitation. During the elicitation phase, all participants elicited 30 autobiographical memories. We conducted a 3 (memory retrieval—*Rp+, Rp− and Nrp*) × 3 (cue valence—*positive, negative and neutral*) repeated-measures analysis of variance (ANOVA) of mean memory generation latency (in seconds). Although Barnier et al. (2004) found that participants took longer to generate memories to neutral category cues, we found no main effect for emotional valence, $F(1, 142) = 0.083$, $p = .774$, $\eta_p^2 = .001$. There were no other significant main or interaction effects (all Fs < 2.17; all ps $> .12$). Overall, participants generated each memory within an average of about 16 s ($M = 15.37$, $SD = 8.89$).

For the memories used in the experiment (only one individual's set of memories was used for each pair), we conducted three separate 3 (memory retrieval) × 3 (cue valence) repeated-measures ANOVAs with the following dependent variables: (a) participants' estimate of the age of their memories (in years), (b) ratings of clarity, and (c) ratings of memory valence. There were main effects of cue valence for all three dependent variables: age of memories, ratings of clarity, and ratings of memory valence: $F(1, 71) = 12.7$, $p = .012$ $\eta_p^2 = .101$; $F(1, 71) = 8.66$, $p = .023$, $\eta_p^2 = .050$; and, $F(1, 71) = 1382.34$, $p < .001$ $\eta_p^2 = .899$, respectively. Participants generally elicited memories encoded at an earlier age (in years) when provided negative cues ($M = 20.89$, $SD = 6.34$) than when provided neutral cues ($M = 23.46$, $SD = 6.25$) and positive cues ($M = 23.87$, $SD = 6.49$), $t(71) = 3.38$, $d = 0.29$, $p < .001$, and, $t(71) = 3.80$, $d = 0.34$, $p < .001$, respectively. The age of memories elicited to positive and neutral cues did not differ significantly, $t(71) = 0.40$, $d = 0.03$, $p = .613$. Memories elicited to positive cues ($M = 5.93$, $SD = 0.73$) were rated as clearer than those elicited to negative cues ($M = 5.59$, $SD = 0.75$) and neutral cues ($M = 5.80$, $SD = 0.76$), $t(71) = 3.46$, $d = 0.39$, $p < .001$, and, $t(71) = 1.60$, $d = 0.19$, $p = .022$, respectively. The clarity of neutral and negative cued memories did not differ significantly, $t(71) = 1.17$, $d = 0.11$, $p = .22$. Most importantly, participants rated memories elicited to positive cues ($M = 6.35$, $SD = 0.55$) as more positive/less negative than memories elicited

to both neutral ($M = 4.52$, $SD = 0.90$) and negative cues ($M = 2.34$, $SD = 0.92$), $t(71) = 18.82$, $d = 2.37$, $p < .001$, and, $t(71) = 40.35$, $d = 4.78$, $p < .001$, respectively. Memories elicited to neutral cues were also more positive/less negative than memories elicited to negative cues, $t(71) = 16.89$, $d = 1.97$, $p < .001$. Generally, the critical memories were from similar ages (except for negative cued memories that were earlier in age) and also clear (positive cued memories the clearest). Importantly, positive, negative, and neutral cues elicited positive, negative, and neutral memories, respectively.[1]

Retrieval practice success and self-relevance. During retrieval practice, speakers correctly retrieved most of the Rp+ memories ($M = 0.90$, $SD = 0.11$; see Table 1). This high level of performance held across conditions. A $2 \times 2 \times 3$ mixed-design ANOVA with memory ownership (own vs. other's memories) and practice order (1 and 3 or 2 and 4) as between-individuals factors and cue valence (positive, neutral, negative) as a within-individual factor yielded no significant main or interaction effects (all Fs < 3.82; all ps $> .28$).

Listeners rated the speakers' recall during retrieval practice for how relevant the retrieved memories were to their own personal identity. A mixed design $2 \times 2 \times 3$ ANOVA similar to the one above, but now with self-relevance as the dependent variable yielded no significant main or interaction effects. Overall, listeners rated all Rp+ memories as moderately self-relevant ($M = 4.47$, $SD = 0.37$). Furthermore, listeners' ratings of self-relevance were not a function of memory ownership or cue valence, although there was a trend toward rating their own memories as more self-relevant (again, see Table 1). A subsequent correlation analysis found no significant relation between the memory's self-relevance and size of the SS-RIF for listeners (i.e., Rp−), $r(23) = .131$, $p = .553$.

These results suggest that the speakers were generally able to accurately retrieve all the memories during the retrieval practice phase, regardless of the memories' nature. Furthermore, when the listener monitored the speaker retrieving the speaker's own memories, the listener followed the instructions of the experimenter and based their self-relevance ratings on memories they have of semantically similar events that they themselves experienced.

RIF effects at final recall. We wanted to determine whether speakers and listeners exhibited WI-RIF and SS-RIF for both their own and another person's personal memories, and whether this was moderated by the valence of the cue. We conducted a $2 \times 2 \times 3 \times 3$ mixed-design ANOVA with role (speakers and listeners) and memory ownership (own vs. other's memories) as between-individuals factors and memory retrieval (Rp+, Rp−, Nrp) and cue valence (positive, neutral, negative) as within-individual factors. The dependent variable was the proportion of items (out of 2 for Rp+ and Rp−; out of 4 for Nrp) recalled for a particular retrieval type. Our analysis revealed main effects for memory retrieval, memory ownership, and cue valence: $F(1, 43) = 20.45$, $p < .001$, $\eta_p^2 = .332$; $F(1, 43) = 5.75$, $p = .021$, $\eta_p^2 = .118$; and, $F(1, 43) = 8.75$, $p = .005$, $\eta_p^2 = .169$, respectively. We found no other main or interaction effects (all Fs < 2.00, all ps $> .05$; see Table 2). Most notably, however, we failed to find an interaction between retrieval and role, suggesting equal practice and RIF effects for both the speakers (i.e., WI-RIF) and the listeners (i.e., SS-RIF), $F(1, 43) = 0.576$, $p = .452$, $\eta_p^2 = .013$.

The main effect for memory retrieval reflects the presence of a practice effect (Rp+ > Nrp) and RIF effect (Nrp > Rp−). Planned t tests confirmed the practice effect in that participants recalled significantly more Rp+ memories ($M = 0.71$, $SD = 0.23$) than Nrp memories ($M = 0.56$, $SD = 0.23$), $t(46) = 5.41$, $d = 0.65$, $p < .02$. RIF occurred in that participants recalled fewer Rp− memories ($M = 0.30$, $SD = 0.30$) than Nrp memories, $t(46) = 8.70$, $d = 0.93$, $p < .02$ (see Table 2). As for the main effect of memory ownership, participants remembered their own memories ($M = 0.61$, $SD = 0.24$) better than a stranger's memories ($M = 0.47$, $SD = 0.20$). With regard to the main effect for cue valence, subsequent t tests revealed participants recalled more negative cued memories ($M = 0.57$, $SD = 0.24$) than positive cued memories ($M = 0.48$, $SD = 0.25$), $t(46) = 3.30$, $d = 0.37$, $p = .02$. Neutral cued memories ($M = 0.53$, $SD = 0.23$) were also remembered better than positive cued memories ($M = 0.48$, $SD = 0.25$), $t(46) = 2.13$, $d = 0.21$, $p = .038$.

In sum, with respect to the four goals stated in the introduction to this experiment: (a) RIF for autobiographical memories extended, not just to speakers but also to listeners, at least when the speaker and listener are strangers. (b) Whereas people remembered their own autobiographical memories better than other's autobiographical memories, the size of the practice effect and RIF impairment was not a function of memory ownership. (c) Similarly, whereas people remembered negative and neutral autobiographical memories better than positive autobiographical memories, again, emotional valence did not affect the size of the practice effect or RIF effect. Significant RIF impairment was observed regardless of the emotional valence of the memory. (d) One does not have to instruct listeners to monitor for accuracy to produce SS-RIF. It is sufficient for listeners to monitor for the self-relevance of the autobiographical memories.

Table 1
Experiment 1: Retrieval Practice Success and Self-Relevance for Strangers

Ownership	Cue valence		
	Positive	Neutral	Negative
	Retrieval practice success[a]		
Own	0.88 (0.26)	0.89 (0.23)	1.00 (0.00)
Other's	0.93 (0.13)	0.88 (0.21)	0.89 (0.19)
	Self-relevance ratings[b]		
Own	5.13 (0.51)	4.60 (0.57)	4.84 (0.66)
Other's	4.40 (0.78)	3.95 (0.55)	3.70 (0.64)

Note. Proportions in parentheses are standard deviations.
[a] Proportion of memories recalled out of total number of memories possible. [b] Average ratings of self-relevance (1 = *low self-relevance*; 7 = *high self-relevance*).

[1] For each of the following three experiments, we conducted these same analyses for the autobiographical memories used in each respective experiment. We found similar patterns of results across the experiments. In the interests of space, we have not included these analyses for Experiments 2–4 in the text. The data and analyses are available online as supplemental material.

Table 2
Experiment 1: RIF Effects at Final Recall for Strangers (Proportion of Memories Recalled Out of Total Memories Possible)

Ownership	Item type	Overall	Emotional valence		
			Positive	Neutral	Negative
		Speaker (WI-RIF)			
Overall	Rp+	.67 (.24)**			
	Rp−	.27 (.27)*			
	Nrp	.56 (.22)			
Own	Rp+	.74 (.23)**	.67 (.33)*	.75 (.26)**	.79 (.26)**
	Rp−	.31 (.33)*	.29 (.40)*	.29 (.33)*	.33 (.26)**
	Nrp	.58 (.27)	.56 (.32)	.56 (.30)	.62 (.23)
Other	Rp+	.61 (.24)*	.54 (.33)*	.67 (.33)*	.63 (.31)**
	Rp−	.24 (.21)**	.25 (.34)*	.21 (.26)**	.25 (.26)**
	Nrp	.54 (.17)	.42 (.27)	.58 (.27)	.63 (.20)
		Listener (SS-RIF)			
Overall	Rp+	.74 (.21)*			
	Rp−	.35 (.34)*			
	Nrp	.61 (.23)			
Own	Rp+	.80 (.21)**	.77 (.26)*	.77 (.26)**	.87 (.23)**
	Rp−	.44 (.34)**	.46 (.42)**	.41 (.38)**	.45 (.42)**
	Nrp	.67 (.21)	.59 (.28)	.68 (.20)	.73 (.24)
Other	Rp+	.68 (.21)**	.63 (.31)**	.67 (.25)**	.75 (.26)**
	Rp−	.25 (.35)**	.21 (.33)*	.29 (.39)**	.25 (.39)**
	Nrp	.54 (.24)	.44 (.27)	.58 (.25)	.52 (.25)

Note. Proportions in parentheses are standard deviations. All proportions with asterisks are significant compared to the proportion directly below them. RIF = retrieval-induced forgetting; WI = within-individual; SS = socially shared; Rp+ = practiced items from practiced categories; Rp– = nonpracticed items from practiced categories; Nrp = nonpracticed items from nonpracticed categories.
* Significant at the .05 level. ** Significant at the .01 level.

Experiment 2

The aim of Experiment 2, then, was to explore whether we might find a different pattern of results when the pair consisted of intimate couples remembering shared, autobiographical memories. Experiment 2 followed the methodology of Experiment 1 with two exceptions: (a) The experimenter limited participation to intimate couples who had been together for at least 6 months, and (b) at elicitation, the experimenter asked participants to elicit autobiographical memories they experienced (i.e., shared experiences) with their intimate partner, or at least had been told about by their partner.

Method

Forty individuals (20 couples; 20 female, 20 male) were recruited in New York City from The New School through poster displays across campus and the general public via online postings on craigslist.org. Again, as in Experiment 1, preliminary analyses found no significant differences between The New School and craigslist.org populations on final recall so this variable was not analyzed further. Participants ranged in age from 20 to 69 years ($M = 31.38$, $SD = 11.95$). Recruitment of participants was limited to intimate couples romantically involved for at least 6 months. Length of the couples' relationships ranged from 10 to 576 months ($M = 84.70$, $SD = 116.86$). The experimenter compensated participants with U.S. $25. As in Experiment 1, the experimental design consisted of two between-individuals factors (role—*speaker and listener* and autobiographical memory ownership—*own vs. other's*) and two within-individual factors (retrieval type—*Rp+, Rp− and Nrp* and cue valence—*positive, negative and neutral*). To examine whether the length of each couples' relationship moderated final recall patterns, we included this variable in a subsequent regression analysis.

Unlike Experiment 1, in Experiment 2 the experimenter instructed the participants to recollect memories of events they experienced with their partner (e.g., "when he proposed to me at my 25th birthday party"). Specifically, the experimenter provided the same instructions to the participants as in Experiment 1 but with the following additions: "The autobiographical memories I need you to recollect are memories about events that you jointly experienced with your intimate partner. They should not be memories you experienced independently of your intimate partner." If, on occasion, participants were unable to think of such a memory, they were allowed to provide a memory they had shared with their partner through a previous conversation. We allowed this indirect recollection inasmuch as some participants found it difficult to recollect 30 memories of experiences entirely shared with their partner. Overall, 90% of memories elicited experiences shared with their partner. Analyses revealed no significant difference between the final recall of those memories of shared experiences or merely subsequently shared through conversation, and, therefore, this factor was not considered any further. In line with Experiment 1, we still maintained the distinction between "own" and "other's" memories upon analysis. While the fact that intimate couples elicited memories of shared experiences may have blurred this dichotomy compared to the unshared autobiographical memories elicited by the strangers, the idiosyncratic ways each member of the couple encoded and retrieved these memories may nonetheless play a determining role as to the ease by which the memories are retrieved.

Results and Discussion

Preliminary analyses revealed no difference on final recall according to age, gender, ethnicity, marital status, education or native language and so these variables were not analyzed further. As noted in footnote 1, characteristics of the elicited memories were similar to those reported in Experiment 1. Critically, negative, positive and neutral cues elicited negative, positive and neutral memories, respectively.

Retrieval practice success and self-relevance. We undertook a $2 \times 2 \times 3$ mixed-design ANOVA with memory ownership (own vs. other's memories) and practice order (1 and 3 or 2 and 4) as between-individuals factors and cue valence (positive, neutral, negative) as a within-individual factor and speakers' retrieval practice success rate. It yielded a main effect for cue valence, $F(1, 16) = 5.65$, $p < .05$, $\eta_p^2 = .261$. There were no other significant main or interaction effects (all Fs < 1.72, all ps $> .54$). Subsequent t tests confirmed that speakers correctly recalled significantly more negative cued Rp+ memories ($M = 1.00$, $SD = 0.00$) than positive cued ($M = 0.88$, $SD = 0.22$) or neutral cued memories ($M = 0.70$, $SD = 0.41$), $t(20) = 2.52$, $d = 0.77$, $p < .05$, and, $t(20) = 3.27$, $d = 1.03$, $p < .05$, respectively. Overall, however,

speakers correctly retrieved most of the Rp+ memories (M = 0.86, SD = 0.03; see Table 3).

We also examined the self-relevance ratings. A 2 × 2 × 3 mixed-design ANOVA with memory ownership (own vs. other's memories) and practice order (1 and 3 or 2 and 4) as between-individuals factors and cue valence (positive, neutral, negative) as a within-individual factor when examining the listeners' self-relevance ratings yielded no significant main or interaction effects (all Fs < 2.53, all ps > .28). Overall, listeners rated all Rp+ memories as highly self-relevant (M = 5.17, SD = 0.19). This was not surprising as the listener, for the most part, also experienced the memories retrieved by the speaker prior to the experiment. Furthermore, listeners' ratings of self-relevance were not a function of memory ownership or cue valence (see Table 3). Again, these results were expected since the stimulus material was shared, autobiographical memories. Importantly, a subsequent correlation analysis found no significant relation between the memory's self-relevance and the listeners' RIF impairment of related memories, $r(20)$ = .205, p = .386.

RIF effects at final recall. We conducted a 2 × 2 × 3 × 3 mixed-design ANOVA with role (speaker and listener) and memory ownership (own vs. other's memories) as between-individuals factors and memory retrieval (Rp+, Rp−, Nrp) and cue valence (positive, neutral, negative) as within-individual factors. The dependent variable was the proportion of items recalled for a particular retrieval type. Our analysis revealed main effects for memory retrieval and role, $F(1, 36) = 33.76$, $p < .001$, $\eta_p^2 = .484$, and, $F(1, 36) = 4.83$, $p = .034$, $\eta_p^2 = .118$, respectively. We found no other main or interaction effects (all Fs < 1.92, all ps > .175; see Table 4). As in Experiment 1, we found no interaction between retrieval and role suggesting equal practice and RIF effects for both the speakers (i.e., WI-RIF) and the listeners (i.e., SS-RIF), $F(1, 36)$ = 0.374, p = .55, η_p^2 = .010.

The main effect for memory retrieval reflects the presence of a practice effect (Rp+ > Nrp) and RIF effect (Nrp > Rp−) in our results. Planned t tests confirmed the practice effect, in that participants recalled significantly more Rp+ memories (M = 0.70, SD = 0.25) than Nrp memories (M = 0.55, SD = 0.23). RIF occurred in that participants recalled significantly fewer Rp− memories (M = 0.29, SD = 0.25) than Nrp memories, $t(39)$ = 5.83, d = 0.62, $p < .001$ and, $t(39)$ = 8.40, d = 1.08, $p < .001$, respectively (see Table 4). The main effect for role arises because, overall, the listeners (M = 0.58, SD = 0.21) remembered more items than the speakers (M = 0.45, SD = 0.20). This result was surprising. We did not expect to find a difference, in that we expected that the covert retrieval (undertaken by the listener) should be as effective in boosting memory as overt retrieval (Smith & Roediger, 2011). It is noteworthy that we did not find this difference in Experiment 1.

Notably, the impairment of the Rp− items did not vary as a function of the couples' length of relationship, $F(1, 39)$ = 0.07, p = .163. In other words, the length of a couples' relationship did not influence the level of memory impairment.

The results are similar to Experiment 1: The level of impairment due to RIF did not depend on role, ownership, or emotional valence. However, unlike Experiment 1, we did not find a main effect for memory ownership; since the memories were shared, autobiographical memories, the speaker and listener were, in essence, both "owners" of the memories. Experiment 2 extends the results of Experiment 1 by establishing that practice effects and WI-RIF and SS-RIF are found even when the speaker and the listener are intimates. These results suggest intimacy does not moderate either WI-RIF or SS-RIF, at least among the couples we tested.

Table 3
Experiment 2: Retrieval Practice Success and Self-Relevance for Intimate Couples

Ownership	Cue valence: Positive	Neutral	Negative
	Retrieval-practice success[a]		
Own	0.85 (0.24)	0.65 (0.47)	1.00 (0.00)
Other's	0.90 (0.21)	0.75 (0.35)	1.00 (0.00)
	Self-relevance ratings[b]		
Own	5.40 (0.51)	5.00 (0.25)	5.70 (0.43)
Other's	5.42 (0.52)	4.85 (0.26)	4.69 (0.44)

Note. Proportions in parentheses are standard deviations.
[a] Proportion of memories recalled out of total number of memories possible. [b] Average ratings of self-relevance (1 = *low self-relevance*; 7 = *high self-relevance*).

Table 4
Experiment 2: RIF Effects at Final Recall for Intimate Couples (Proportion of Memories Recalled Out of Total Memories Possible)

Ownership	Item type	Overall	Emotional valence: Positive	Neutral	Negative
		Speaker (WI-RIF)			
Overall	Rp+	.65 (.27)**			
	Rp−	.20 (.23)*			
	Nrp	.47 (.23)			
Own	Rp+	.68 (.29)**	.65 (.24)**	.75 (.35)*	.65 (.41)**
	Rp−	.25 (.26)*	.15 (.24)**	.35 (.41)**	.25 (.26)**
	Nrp	.48 (.25)	.48 (.28)	.45 (.23)	.53 (.30)
Other	Rp+	.62 (.26)**	.67 (.41)**	.70 (.26)**	.50 (.33)**
	Rp−	.15 (.18)**	.18 (.24)**	.10 (.21)**	.20 (.35)**
	Nrp	.47 (.23)	.40 (.29)	.55 (.20)	.45 (.31)
		Listener (SS-RIF)			
Overall	Rp+	.76 (.22)**			
	Rp−	.36 (.26)**			
	Nrp	.62 (.21)			
Own	Rp+	.85 (.20)**	.85 (.24)*	.89 (.24)**	.82 (.25)*
	Rp−	.45 (.29)**	.50 (.33)*	.45 (.37)*	.40 (.39)**
	Nrp	.72 (.20)	.68 (.21)	.72 (.22)	.75 (.26)
Other	Rp+	.67 (.21)*	.60 (.32)**	.75 (.35)**	.65 (.34)**
	Rp−	.28 (.19)*	.20 (.26)*	.35 (.34)*	.30 (.35)*
	Nrp	.52 (.18)	.53 (.22)	.60 (.21)	.43 (.24)

Note. Proportions in parentheses are standard deviations. All proportions with asterisks are significant compared to the proportion directly below them. RIF = retrieval-induced forgetting; WI = within-individual; SS = socially shared; Rp+ = practiced items from practiced categories; Rp– = nonpracticed items from practiced categories; Nrp = nonpracticed items from nonpracticed categories.
* Significant at the .05 level. ** Significant at the .01 level.

Experiment 3

The study of SS-RIF for autobiographical memories was motivated in part because people often recall their personal past in conversations. With this observation in mind, in the next two experiments, following Cuc et al. (2007), we moved beyond the carefully controlled selective practice of Experiments 1 and 2 and examined the effects of selective practice when embedded in a free-flowing conversation. Experiment 3 is the conversational analogue to Experiment 1 and differed from Experiment 1 in three ways. First, we replaced the experimenter-controlled retrieval practice (speaker) and monitoring (listener) phase with a free-flowing conversation (see Cuc et al., 2007; Stone et al., 2010). Second, since there was no experimenter-controlled retrieval practice, the experimenter did not elicit a "personal word" during the elicitation phase. As a result, participants were only provided the general cue and memory during the learning phase. Finally, an additional distraction task was included between the learning phase and the conversation phase to prevent any ceiling effects during the participants' discussions.

Method

Forty-four individuals (22 pairs; 20 male, 24 female) were recruited in Sydney, Australia from the student population at Macquarie University via flyers posted around campus. All respondents indicated that they did not know the other person in their pair. Participants ranged in age from 18 to 29 years ($M = 21.55$, $SD = 2.86$). They were compensated AUS $30 for their time. The experimenter also organized all individuals into pairs consisting of one speaker and one listener as they arrived at the laboratory. The pairs comprised nine female-female pairs, seven male-male pairs, and six female-male pairs. Analyses found no significant differences on memory recall across these pair types (but see Barber & Mather, 2012). As in Experiments 1 and 2, the experimental design consisted of two between-individuals factors (role—*speaker and listener* and autobiographical memory ownership—*own vs. other's*) and two within-individual factors (retrieval type—*Rp+, Rp− and Nrp* and cue valence—*positive, negative and neutral*).

After elicitation and a Day 2 learning phase similar to Experiment 1, as well as a 10-min movie recall distraction task, the experimenter informed the two participants they would now be given an opportunity to discuss the memories presented at the beginning of this experimental session. The experimenter provided the following instructions:

> Next, you both will be given an opportunity to freely discuss the memories provided to you at the beginning of today's session. The ultimate goal is not necessarily to *list* all the memories. Rather, discuss the memories as naturally as possible. This may entail discussing all the memories or merely a subset of them. I will let you both know when the conversation phase of the experiment is over. Please continue to discuss the memories until I say stop. You may begin.

The experimenter terminated the conversation when silences of five to 7 s occurred in their conversation. Previous research has shown this to be an appropriate indicator that the conversation is over (Stone et al., 2010). Conversations lasted, on average, approximately 5 min and were tape-recorded.

Results and Discussion

Coding scheme. We followed the procedure developed by Cuc et al. (2007; see also Stone et al., 2010). Each conversation was transcribed. Two coders then used these transcripts to identify Rp+ (memories mentioned in the conversation), Rp− (memories related to mentioned items, but left silent) and Nrp (memories from categories left completely silent). Several points about the coding scheme need to be emphasized (for additional coding scheme details, see online supplemental material). Coders first identified whether a participant was a speaker or a listener. That is, for each memory mentioned in the conversation, one participant was coded as a speaker, the other as the listener. Coders then determined for each critical memory from the original list, whether it was Rp+, Rp−, or Nrp for the speaker and for the listener. When a critical memory was mentioned in the course of a conversation, it was coded as a Rp+ memory for the speaker and the listener. Rp− memories represented those memories semantically related to the Rp+ memories (i.e., from the same category) but left silent in the course of the conversation. For a listener, Rp− items were silent memories related to what the speaker stated but were unrelated to anything the listener had stated. For speakers, Rp− memories were silent memories related to what the speakers themselves stated. Nrp memories were those items from categories that were left completely silent by both participants in the course of the conversation. For example, if a speaker mentioned the memory "When I was struck by lightning outside of Kansas City" (horrified category) but did not mention any other "horrified" and "tragedy" memories and similarly, the listener did not mention any other "horrified" and "tragedy" memories, then the "lightening" memory would be coded as Rp+ for the speaker and the listener. Similarly, all other "horrified" memories would be coded as Rp− memories for both speaker and listener. All "tragedy" memories would be coded as Nrp memories. If both members of the pair mentioned a memory from a category, the mentioned memories were coded as Rp+ for speakers, as well as the associated Rp− memories. Reliability between the two coders was good ($\kappa = .93$). Disagreements were discussed and resolved to each party's satisfaction.

On average, the pairs provided a sufficient number of Rp+ ($M = 5.88$, $SD = 1.62$), Rp− ($M = 5.43$, $SD = 1.85$), and Nrp ($M = 12.69$, $SD = 2.70$) memories in the course of a conversation to permit data analysis (see also Cuc et al., 2007; Stone et al., 2010). These figures are comparable to the six Rp+ and Rp− items and 12 Nrp items experimentally implemented in Experiments 1 and 2 and in previous research by Barnier et al. (2004).

Preliminary analyses revealed no difference on final recall according to age, gender, ethnicity, marital status, education, or native language and so these variables were not analyzed further. Again, the characteristics of the elicited memories were similar to those in Experiment 1 (see, again, footnote 1).

RIF effects at final recall. We conducted a $2 \times 2 \times 3 \times 3$ mixed-design ANOVA with role (speaker and listener) and memory ownership (own vs. other's memories) as between-individuals factors and memory retrieval (Rp+, Rp−, Nrp) and cue valence (positive, neutral, negative) as within-individual factors. The dependent variable was the proportion of items recalled for a particular retrieval type. Our analysis found main effects for memory retrieval and memory ownership, $F(1, 40) = 8.76$, $p = .005$, $\eta_p^2 = .180$, and, $F(1, 40) = 12.15$, $p = .001$, $\eta_p^2 = .233$, respectively (see

Table 5
Experiment 3: RIF Effects at Final Recall for Strangers (Proportion of Memories Recalled Out of Total Memories Possible)

Ownership	Item type	Overall	Emotional valence		
			Positive	Neutral	Negative
		Speaker (WI-RIF)			
Overall	Rp+	.74 (.21)**			
	Rp−	.22 (.25)**			
	Nrp	.60 (.23)			
Own	Rp+	.85 (.20)**	.88 (.27)**	.82 (.29)**	.85 (.24)**
	Rp−	.34 (.29)**	.28 (.34)*	.44 (.30)*	.29 (.27)**
	Nrp	.70 (.21)	.56 (.24)	.71 (.23)	.74 (.19)
Other	Rp+	.64 (.22)**	.50 (.21)**	.76 (.27)**	.66 (.22)**
	Rp−	.09 (.17)**	.03 (.18)**	.13 (.15)**	.11 (.15)**
	Nrp	.50 (.14)	.47 (.13)	.50 (.17)	.52 (.14)
		Listener (SS-RIF)			
Overall	Rp+	.66 (.19)**			
	Rp−	.24 (.22)*			
	Nrp	.55 (.20)			
Own	Rp+	.72 (.19)**	.76 (.23)**	.70 (.17)**	.69 (.19)**
	Rp−	.30 (.29)*	.20 (.34)*	.31 (.30)*	.38 (.28)*
	Nrp	.55 (.25)	.57 (.29)	.54 (.34)	.53 (.22)
Other	Rp+	.60 (.18)**	.61 (.23)**	.59 (.27)**	.59 (.21)**
	Rp−	.18 (.22)*	.08 (.23)**	.19 (.27)**	.25 (.25)*
	Nrp	.55 (.26)	.55 (.30)	.58 (.23)	.53 (.25)

Note. Proportions in parentheses are standard deviations. All proportions with asterisks are significant compared to the proportion directly below them. RIF = retrieval-induced forgetting; WI = within-individual; SS = socially shared; Rp+ = practiced items from practiced categories; Rp– = nonpracticed items from practiced categories; Nrp = nonpracticed items from nonpracticed categories.
* Significant at the .05 level. ** Significant at the .01 level.

Table 5). We found no other main or interaction effects (all Fs $<$ 2.80, all ps $>$ .10). Again, we found no interaction between retrieval and role suggesting equal practice and RIF effects for both the speakers (i.e., WI-RIF) and the listeners (i.e., SS-RIF), $F(1, 40) = 0.854$, $p = .375$, $\eta_p^2 = .074$.

The main effect for memory retrieval reflects the presence of a practice effect (Rp+ $>$ Nrp) and RIF effect (Nrp $>$ Rp−) in our results. Planned t tests confirmed the presence of a practice effect, in that participants recalled significantly more Rp+ memories ($M = 0.70$, $SD = 0.27$) than Nrp memories ($M = 0.57$, $SD = 0.15$), $t(43) = 3.11$, $d = 0.60$, $p < .01$. RIF occurred in that participants recalled fewer Rp− memories ($M = 0.22$, $SD = 0.21$) than Nrp memories, $t(43) = 14.64$, $d = 1.92$, $p < .01$ (see Table 5). As for the main effect of memory ownership, not surprisingly, participants remembered their own memories ($M = 0.57$, $SD = 0.17$) better than a stranger's memories ($M = 0.42$, $SD = 0.11$).

In sum, the results found with free-flowing conversations are similar to those found in the more controlled setting of Experiment 1, although we found no main effect for cue valence in this experiment. Overall, there was clear evidence of RIF for autobiographical memories, independent of ownership, role, or emotional valence. RIF, and importantly, SS-RIF, appears to be a possibility for autobiographical memories and not just in the experimentally contrived modes of interaction but in free-flowing conversations as well.

Experiment 4

Experiment 4 examined intimate couples. Although Experiment 2 demonstrated that WI-RIF and SS-RIF occurs when intimate couples are provided experimenter-controlled selective retrieval practice, it is not evident that intimates would produce similar retrieval effects in the context of a conversation. The retrieval practice in Experiment 2 was stripped of meaningful social interactions. Such confined social remembering may have limited or abolished any mnemonic benefits of remembering with an intimate partner (Harris, Keil, Sutton, Barnier, & McIlwain, 2011).

Method

Forty individuals (20 couples; 21 female, 19 male) were recruited in Sydney, Australia from the student population at Macquarie University via flyers posted around campus. As in Experiment 2, participation was limited to intimate couples. Participants ranged in age from 18 to 44 years ($M = 23.95$, $SD = 5.23$). The length of the couples' relationships ranged from 7 to 80 months ($M = 26.93$, $SD = 23.38$). Participants were compensated AUS $30. As in the three prior experiments, the experimental design consisted of two between-individuals factors (role—*speaker and listener* and autobiographical memory ownership—*own vs. other's*) and two within-individual factors (retrieval type—*Rp+, Rp−, and Nrp* and cue valence—*positive, negative and neutral*). Again, as in Experiment 2, to examine whether the length of each couples' relationship moderated retrieval patterns, we included this variable in a subsequent regression analysis.

Experiment 4 followed the methodology of Experiment 3 with two exceptions: (a) Participants were limited to intimate couples who had been together for at least 6 months, and (b) at elicitation, each participant was asked to elicit autobiographical memories they experienced with their intimate partner, or at least had been told about by their partner, in a manner similar to Experiment 2. Overall, 83% of memories elicited were experiences shared with their partner. Analyses revealed no significant difference between the final recall of those memories of shared experiences or merely subsequently shared through conversation and, therefore, was not considered any further.

Results and Discussion

The coding scheme for the conversations was identical to Experiment 3. Reliability between the two coders was good ($\kappa = .97$). Preliminary analyses revealed no difference on final recall according to age, gender, ethnicity, marital status, education, or native language and so these variables were not analyzed further. The conversations provided a sufficient number of Rp+ ($M = 8.03$, $SD = 1.79$), Rp− ($M = 5.35$, $SD = 1.90$), and Nrp ($M = 10.62$, $SD = 1.35$) memories to permit data analysis (see Barnier et al., 2004; Cuc et al., 2007; Stone et al., 2010). The characteristics of the elicited memories were similar to those in Experiment 1 (see, again, footnote 1).

RIF effects at final recall. We conducted a 2 × 2 × 3 × 3 mixed-design ANOVA, with role (speaker and listener) and memory ownership (own vs. other's memories) as between-individuals factors and memory retrieval (Rp+, Rp−, Nrp) and cue valence (positive, neutral, negative) as within-individual factors. The de-

pendent variable was the proportion of items recalled for a particular retrieval type. Our analysis found main effects for memory retrieval and memory ownership, $F(1, 36) = 17.11$, $p < .001$, $\eta_p^2 = .322$, and, $F(1, 36) = 7.41$, $p = .010$, $\eta_p^2 = .171$, respectively. We found no other main or interaction effects (all Fs < 1.00, all ps $> .336$; see Table 6). As found in the prior three experiments, there was no interaction between retrieval and role suggesting equal practice and RIF effects for both the speakers (i.e., WI-RIF) and the listeners (i.e., SS-RIF), $F(1, 36) = 0.592$, $p = .466$, $\eta_p^2 = .103$.

The main effect for memory retrieval reflects the presence of a practice effect (Rp+ > Nrp) and RIF effect (Nrp > Rp−) in our results. Planned t tests confirmed a practice effect in that participants recalled significantly more Rp+ memories ($M = 0.79$, $SD = 0.23$) than Nrp memories ($M = 0.63$, $SD = 0.20$), $t(39) = 4.98$, $d = 0.74$, $p < .001$. RIF was present in that participants recalled significantly fewer Rp− memories ($M = 0.38$, $SD = 0.20$) than Nrp memories ($M = 0.63$, $SD = 0.20$), $t(39) = 9.71$, $d = 1.25$, $p < .001$, respectively (see Table 6). The main effect for memory ownership occurred because, overall, individuals remembered more memories they themselves elicited ($M = 0.68$, $SD = 0.17$) than the memories elicited by their partner ($M = 0.52$, $SD = 0.16$).

As in Experiment 2, the impairment of the Rp− items did not vary as a function of the couples' length of relationship, $F(1, 38) = 0.07$, $p = .163$. In other words, the length of a couples' relationship did not influence the level of memory impairment.

Table 6
Experiment 4: RIF Effects at Final Recall for Intimate Couples (Proportion of Memories Recalled Out of Total Memories Possible)

Ownership	Item type	Overall	Emotional valence		
			Positive	Neutral	Negative
Speaker (WI-RIF)					
Overall	Rp+	.81 (.30)**			
	Rp−	.37 (.20)**			
	Nrp	.60 (.25)			
Own	Rp+	.89 (.25)**	.95 (.12)**	.83 (.29)**	.88 (.19)**
	Rp−	.45 (.32)**	.44 (.27)*	.47 (.32)**	.44 (.29)*
	Nrp	.70 (.27)	.67 (.20)	.73 (.26)	.68 (.23)
Other	Rp+	.72 (.25)**	.70 (.22)**	.85 (.28)**	.62 (.19)**
	Rp−	.29 (.15)**	.17 (.20)**	.30 (.17)*	.40 (.24)*
	Nrp	.51 (.25)	.50 (.27)	.55 (.21)	.48 (.29)
Listener (SS-RIF)					
Overall	Rp+	.78 (.23)**			
	Rp−	.36 (.21)*			
	Nrp	.66 (.25)			
Own	Rp+	.87 (.21)**	.90 (.17)**	.82 (.22)**	.90 (.19)**
	Rp−	.40 (.31)*	.50 (.34)**	.27 (.29)**	.45 (.33)**
	Nrp	.77 (.23)	.75 (.27)	.80 (.25)	.75 (.22)
Other	Rp+	.69 (.22)**	.64 (.31)**	.80 (.25)**	.63 (.27)**
	Rp−	.32 (.27)*	.34 (.23)*	.34 (.35)*	.29 (.26)*
	Nrp	.55 (.20)	.54 (.25)	.56 (.19)	.54 (.24)

Note. Proportions in parentheses are standard deviations. All proportions with asterisks are significant compared to the proportion directly below them. RIF = retrieval-induced forgetting; WI = within-individual; SS = socially shared; Rp+ = practiced items from practiced categories; Rp– = nonpracticed items from practiced categories; Nrp = nonpracticed items from nonpracticed categories.
* Significant at the .05 level. ** Significant at the .01 level.

In sum, the results of Experiment 3 extended to intimate couples: conversing with an intimate about shared experiences led to RIF, both in the speaker and the listener. The present results have further demonstrated the robustness of RIF, in that it is not mediated by role, ownership, or emotional valence—a finding arising in all the experiments so far reported.

General Discussion

Six goals motivated our research. First, we sought both to replicate the results of Barnier et al. (2004), who studied RIF for individual, emotional, and unemotional autobiographical memories, and to extend their findings to SS-RIF. In this way, we sought to establish that access to autobiographical memories can be affected by listening to others selectively remember. We were particularly interested in the effect of selective remembering on how well the listeners subsequently remembered unmentioned material. In all four experiments we found that selectively retrieving emotional and unemotional autobiographical memories induced forgetting for the participants' own related but unretrieved emotional and unemotional autobiographical memories. Critically, this pattern of forgetting occurred both when the participants selectively recollected the memories themselves and when they listened to someone else selectively recollect them. The present results add to the growing literature demonstrating the power of social interactions in shaping the way individuals remember the past (see Hirst & Echterhoff, 2012). What it shows is that even something as personal as an autobiographical memory can be changed through social interactions, so that autobiographical memories that were accessible at one point become less accessible at others. By extending SS-RIF to autobiographical memories, we offer at least one mechanism through which the self may be socially constructed.

Second, in Experiments 1 and 2, we used a monitoring task different from the ones employed to date in studies of SS-RIF: judging self-relevance. Although most studies of the effect of self-relevance judgments on memory have found that the monitoring task leads to better retention, our chief interest here was whether these judgments could also lead to SS-RIF. Although a range of different processes might be evoked when a person judges the self-relevance of a memory, memory retrieval is probably involved. Our findings suggest that the memory recalled by the speaker is also retrieved by the listener. This concurrent retrieval produces the observed SS-RIF. There are clearly circumstances in which self-referencing is likely to be a conversational goal and others in which it would be less likely. For instance, the setting of a therapeutic setting might be more likely to evoke self-referential processing than, for instance, listening to a friend recall a shared experience at a dinner party. The present findings suggest that one might find greater SS-RIF in the therapy session than at the dinner party. Thus, we can start to make predictions as to under which circumstances we would expect a speaker to induce the listener to forget their own autobiographical past.

As Barnier et al. (2004) emphasized, the RIF effect for autobiographical memory is in some ways unexpected. In particular, scholars assume that hierarchically related autobiographical events are represented in memory in a coherent, integrated fashion (Conway, 2005; Conway & Pleydell-Pearce, 2000; Conway, Singer, & Tagini, 2004). However, Anderson and McCulloch (1999; see also Carroll, Campbell-Ratcliffe, Murnane, & Perfect, 2007) have claimed that RIF is diminished, if not eliminated, when the to-be-

remembered material is integrated. One would expect, then, that RIF for autobiographical memories should be either diminished or eliminated. Barnier et al. (2004) suggested that the RIF impairment they found might not have occurred because the autobiographical memories solicited were unrelated to each other. The same argument would hold for the present study. In addition, we would argue that it is hard to extrapolate from Anderson and McCulloch's study of integration across word pairs to integration of stories and on to the present work on autobiographical memories. When is it appropriate to say that two autobiographical memories are integrated? Or are unintegrated? Furthermore, the monitoring goal of self-relevance may have prevented integration. Indeed, prior research examining self-relevance has shown such judgments to increase the memorability of the judged memory (Kuiper & Rogers, 1979; Symons & Johnson, 1997). Such increased memorability may have prevented participants from integrating the retrieved memory with the related memories. In either case, the present research suggests that people, at times, can be induced to forget emotional autobiographical memories when monitoring for self-relevance.

As to our third goal, we explored whether ownership of the autobiographical memories moderated the occurrence of SS-RIF. That is, would the SS-RIF we observed for unshared listener-owned autobiographical memories differ from unshared, speaker-owned autobiographical memories? In the "stranger" experiments (Experiments 1 and 3), participants remembered their own autobiographical memories better than the stranger's memories. However, even though they remembered their own memories better overall, the benefit did not eliminate the RIF effect (see Barnier et al., 2004). Such a result speaks to the automaticity of inhibition as a result of selective retrieval (Conway & Fthenaki, 2003; but see Román, Soriano, Gómez-Ariza, & Bajo, 2009). Moreover, it suggests that the monitoring task of self-relevance is powerful enough to elicit SS-RIF, even when dealing with something as memorable as one's own memories. Even an individual's own highly memorable autobiographical memories may be susceptible to forgetting as a result of social interactions.

Fourth, we verified that RIF held for shared autobiographical memories (i.e., memories of a shared experience), as well as for unshared, autobiographical memories. This finding is important because it suggests that, when recollecting mutually experienced events, social interactions can induce forgetting in similar ways in both the speaker and the listener. Hirst (2010, see also Hirst & Brown, 2011; Hirst et al., 2012; Stone et al., 2010) has argued that, rather than treating the malleability of memory as a design flaw, one could view it as adaptive. Specifically, the changes in memory that occur through social interactions may promote the convergence of memory among those involved in the social interaction. This resulting consensus, or what some have referred to as a collective memory (see Hirst & Manier, 2008) is adaptive because it can facilitate social cohesion and drive the formation of collective identities. In the case of induced forgetting, the result is a collective memory in which the community members forget the same events from the past, as well as collectively remember others (Stone et al., 2010). The collective memories formed around shared autobiographical memories, of course, are not the kind formed by the large groups usually discussed in articles on collective memories—nations, for instance. Rather they are the kind formed by the type of groups we tested here: intimate couples. Our findings suggest that the conversations intimate couples have about their mutually experienced past can lead to a shared rendering, with some aspects of this past mutually remembered, others mutually forgotten. Such a shared rendering no doubt provides a strong social bond.

Fifth, although we wanted to emphasize the importance of SS-RIF for shared memories among couples, we also wanted to explore whether similar SS-RIF and WI-RIF would be found for both strangers and intimate couples. We did. This result is important, inasmuch as intimacy has moderated collaborative remembering in other contexts (see, for example, Wegner et al., 1985, 1991). The fact that intimacy did not moderate WI-RIF is consistent with results that indicate that the inhibition that follows selective retrieval is automatic (Conway & Fthenaki, 2003; but see Román et al., 2009). As for SS-RIF, the listeners, whether they were strangers or intimates to the speaker, faced the same tasks; that is, in Experiments 1 and 2, they were asked to judge the self-relevance of the memories recollected by the speaker. The level of self-relevance of each memory may have varied, but not necessarily the degree to which the listener concurrently remembered with the speaker. Similarly, in Experiments 3 and 4, all participants were given the task of recalling as many memories as they could from the generated list. In comparison to strangers, intimate couples may remember different memories during the conversation than pairs of strangers (Harris et al., 2011). Nevertheless, there is no a priori reason to assume that the relationship between participants affected the degree to which they concurrently, albeit covertly, retrieved during the conversation (see also Barber, Rajaram, & Fox, 2012, for related work about the importance of joint retrieval). Indeed, our results suggest that it did not matter.

Finally, the results we found for both WI-RIF and SS-RIF did not depend on carefully controlling the practice. Rather we found WI-RIF and SS-RIF for autobiographical memories even when practice was embedded in a free-flowing conversation. Although these conversations took place within a laboratory, participants were free to converse as naturally as possible. Clearly, the goal of jointly recounting the past is powerful enough to elicit concurrent retrieval from listeners.

Two issues remain: (a) In Experiments 3 and 4, our RIF results may have been a consequence of the Rp− items being generally less memorable relative to the Rp+ items and therefore not discussed in the conversations or recollected on final recall, and (b) our results may be due to output interference (i.e., the recall of Rp+ items interfered with the recall of Rp− items in the final memory test; see Anderson et al., 1994). To address the first issue, we rank ordered the elicited memories of 40 randomly selected individuals from Experiments 3 and 4 (20 per experiment) in terms of when they were mentioned in the elicitation. We assumed that more accessible memories were mentioned first. If the memorability hypothesis is correct, then Rp+ items (i.e., items mentioned in conversation) should have a lower average ranking (elicited earlier) than Rp− items. We found no evidence that this was the case. As for the second issue, we assessed for possible output order effects following the procedure devised by Macrae and Roseveare (2002; see also Barnier et al., 2004; Conway, Harries, Noyes, Racsmány, & Frankish, 2000). We examined the final recall of 80 randomly selected participants from the four experiments (20 per experiment). Following sequencing recall procedure, we rank ordered the Rp+ and Rp− items recollected at final recall. Our results indicated no significant difference in order of recall for Rp+ and Rp− items, suggesting our RIF results were not due to output interference.

It is also worth noting two nuanced differences across the four experiments. First, participants remembered the neutral memories better than positive memories, but only in Experiment 1. Second, for intimate couples, we found a main effect for memory ownership in Experiment 4, when practice was embedded in a conversation, but not in Experiment 2, when practice was experimentally controlled. The explanations for these contradictory results across the experiments are not readily apparent. We want to stress, however, that none of these differences moderated the RIF effects in all four experiments, demonstrating the robustness of both the WI-RIF and SS-RIF effect.

The present results are the first to demonstrate SS-RIF when individuals, be they strangers or intimate partners, freely discuss their autobiographical past. They supply insight into the way social influences can shape autobiographical memories, and, in turn, influence personal identity (see also Rajaram & Pereira-Pasarin, 2010). Researchers have understood for a long time the close connection between autobiographical memory and personal identity (Brewer, 1986; Neimeyer & Metzler, 1994; Neisser, 1986), as well as the extent to which the self is socially constructed. The present research underscores a heretofore unappreciated way in which social interactions, particularly, conversations, may help shape personal identity. One might have expected that practice effects can reinforce some autobiographical memories, while leaving others susceptible to decay (see Stone, Coman, Brown, Koppel, & Hirst, 2012, for a discussion of this). What the present work suggests is that autobiographical memories left silent and related to what is talked about are particularly susceptible to forgetting. The selective remembering that characterizes most conversational acts of autobiographical recollections may have the unexpected effect of inducing people to forget personal details from both their own personal lives and the lives they share with their partner.

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(*Appendix follows*)

Appendix

Experimental Stimuli

Category cue sets		
A	B	C
Horrified	Tragedy	Sickness
Patient	Hardworking	Polite
Entertaining	Excitement	Happy

Distribution of category cue sets across experimental phases

	Counterbalancing cue orders		
Variable	1	2	3
Phase			
Elicitation	A–C	A–C	A–C
Learning	A–C	A–C	A–C
Retrieval practice	A, B	A, C	B, C
Final recall	A–C	A–C	A–C
Cue type			
Rp	B	A	C
Nrp	C	B	A
Filler	A	C	B

Note. Rp = practiced categories; Nrp = nonpracticed categories.

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