

# The Role of Narratorship and Expertise in Social Remembering

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**Abstract.** Are individuals more likely to serve as a vehicle for social contagion because they are perceived as experts or because they talk a lot? This study parses the contribution of expertise and narratorship by asking groups of three or four individuals to study variants of a curriculum vitae (CV) and then to recall the CV individually, as a group, and once again individually, with a recognition test following the final recall. The group was falsely led to believe that one member had expertise. Narratorship was also determined. Expertise and Narratorship contributed independently to critical false recollections, with Narratorship contributing more than Expertise. The way a conversation unfolds and the emergence of a narrator can reshape memories.

**Keywords:** memory, social contagion, collective memory, expertise, narrator

## Introduction

While memory research has historically investigated the way in which individuals in isolation recall the past, remembering is often a social process, in which groups of individuals collectively recall a previous event. The context may be as seemingly benign as a couple recalling how they first met, or a group of college friends sharing their memories from their freshman year. Social remembering is particularly worthy of study because it has legal consequences, such as the way in which conversations among eyewitnesses affect what they recall after witnessing a crime; and political consequences, such as the influence that competing politicians or media sources can have on the public when invoking different versions of past events.

In their studies of social remembering, a burgeoning group of scholars have demonstrated that what people remember is not simply a matter of how an event is encoded, but also a consequence of postevent social interactions (for a discussion see Hirst & Echterhoff, 2008). Although there may be many ways in which social interactions may shape subsequent remembering, social contagion, which refers to the spread of a memory across a group, offers one increasingly well-studied social means for shaping and reshaping memory. Often treated as an extension of the postevent misinformation effect (Loftus & Pickrell, 1995; Meade & Roediger, 2002; Roediger, Meade, & Bergman, 2001), it usually is captured in experimental settings in which one conversational participant implants supplementary or provides contradictory information, thereby altering the memory of other conversational participants (e.g., Gabbert, Memon, & Allan, 2003; Loftus, 1993; Meade & Roediger, 2002; Weldon, 2001; Wright, Self, & Justice, 2000). In these experiments, the conversation that serves as a medi-

um for social contagion can involve only two people or a small group (Basden, Basden, & Henry, 2000; Todorov, Lalljee, & Hirst, 2000). Moreover, it can be carefully controlled or unstructured and free-flowing (Meade & Roediger, 2002; Roediger et al., 2001; Walther, Bless, Strack, Rackstraw, Wagner, & Werth, 2002; Wright et al., 2000). The results of these experiments indicate that a social interaction as commonplace as a conversation can dramatically alter the memory of its participants, in some situations changing an original encoding into something entirely different.

Conversations, however, may not be as good a medium for social contagion as research suggests, at least not in all instances. In order for a conversation to serve as a vehicle for social contagion, two conditions must be met. First, conversational participants must introduce in the conversation information about the past that at least one participant does not possess. We refer to these memories as *unshared*. (We use this term in the sense of *not being held by everyone*. We do not mean to imply that conversational participants do not converse with each other about the information.) Second, these introduced unshared memories must reshape the memory of other conversational participants. Only then will social contagion occur.

Concerning the first condition – the introduction of unshared memories – it can be met in many experimental settings by carefully controlling conversational dynamics and what conversational participants say (e.g., Meade & Roediger, 2002). However, outside the laboratory, in naturally occurring, free-flowing conversations, unshared memories do not routinely emerge in a conversation. Group recounting is selective, with the group usually recalling more than any individual alone would (so-called *collaborative facilitation*, Basden, Basden, Bryner, & Thomas, 1997; Meudell, Hitch, & Boyle, 1995; Weldon & Bellinger, 1997), but less

than the sum of what each individual is capable of recalling (so-called *collaborative inhibition*; e.g., Andersson & Ronnberg, 1995; Basden et al., 2000; Weldon & Bellinger, 1997). Moreover, this selective remembering takes on a particular shape in many conversations, in that members of a group are more likely to recount memories that all the participants possess (*group-held memories*) than they are to recount unshared memories (for a review see Stasser, Taylor, & Hanna, 1989). As a consequence of this *collective information sampling bias*, the opportunity of spreading unshared memories to other group members is limited. Conversational participants jointly recounting the past are more likely to rehearse group-held memories than introduce unshared memories.

There are exceptions to these rules, however, and understanding these exceptions may further our appreciation of when conversations can best serve as vehicles for social contagion. For instance, Cuc, Manier, Ozuru, and Hirst (2006) showed that, in conversations in which one person dominates the recounting, memories unique to this dominant narrator may be more likely to emerge in the recounting than would the unshared memories of nonnarrators. As a result, the unshared memories of the narrators can spread across the group, with the postgroup memories of the conversational participants converging on the distinctive pre-group rendering of the dominant narrator.

The present paper is concerned with how Cuc et al.'s (2006) findings bear on what we have identified as a second condition for social contagion: that recounted unshared memories influence the memories of other conversational participants. We examine whether the recounted unshared memories of a dominant narrator are more likely to influence the memories of other conversational participants than are the occasionally recounted unshared memories of nonnarrators. Cuc et al. did not directly address this issue. If the answer is in the affirmative, then dominant narrators should have a greater influence on the subsequent memories of their fellow conversational participants than would be expected simply from the size of their contributions in the recounting.

There are at least two reasons why such a disproportionate influence might arise. First, because dominant narrators introduce more information into the conversation, they are better able to craft the story line than other conversational participants and, in doing so, may draw attention to what they say. As a result, what they recount should be riper for social contagion than what others recollect.

Alternatively, the advantage of the dominant narrator may arise simply because group members may view the dominant narrator as an expert. Here it is assumed that people who talk a lot are often viewed as experts (Petty & Cacioppo, 1984). This perception is important when understanding the advantage of dominant narrators because perceived expertise enhances social contagion (Dodd & Bradshaw, 1980; Smith & Ellsworth, 1987). Although it should be possible to separate expertise from narratorship, the two are often confounded: Like dominant narrators, experts tend to talk a lot and introduce unshared memories in the

conversation (Larson, Christensen, Abbott, & Franz, 1996; Stasser, Stewart, & Wittenbaum, 1995; Stewart & Stasser, 1995; Wittenbaum, 1998, 2000). And, as we noted, dominant narrators may often be viewed as experts. But dominant narrators do not have to be viewed as experts. Moreover, experts do not always need to dominate a discussion. It is possible to imagine settings in which experts spend most of their time listening, preferring only to intervene in the discussion at critical points.

The questions for us here, then, are twofold

- 1) Do the recounted unshared memories of the dominant narrator have an advantage in influencing the memories of other conversational participants over the recounted unshared memories of nonnarrators?
- 2) Is this advantage because dominant narrators speak a lot or because they are perceived as experts?

In exploring these questions, we employ a modified version of Cuc et al.'s (2006) paradigm, which focused not on the spread of supplementary information, but the social contagion of contradictory information. Moreover, we adopt a modified version of the experimental paradigm introduced by Wittenbaum (1998, 2000) to specify expertise: Group members will be falsely lead to believe that one randomly selected member of the group has an advantage on the memory task that they will all be asked to complete.

Finally, we were interested in creating experimental conditions that will ensure a wide range in the level of the contribution made by experts in the conversation. In pilot work, we found that, without any instructions about how much "designated experts" should speak, experts usually dominated a discussion, often reaching a "ceiling" on how much could be said in a conversation. Moreover, we found that instructions to the "designated experts" to limit what they said did not produce the desired effect: What is little for one person is a lot for another. However, such instruction satisfied our need for a substantial range in conversational contributions. We, therefore, asked all "designated experts" to limit what they said, expecting that would result in the desired wide range in how much they uttered.

Because we were concerned that the instructions about limiting speech might have an unanticipated effect on the nonexperts, we employed two instructional conditions:

- 1) a *private* condition, in which the expert was told privately that they should speak as little as possible in the group and should avoid dominating the discussion, and
- 2) a *public* condition, in which the expert was given the same instruction, but now in front of the other group members.

In both conditions, the expert was told that their job was to listen to what other group members say and only to interject if they feel that it was necessary.

In summary, previous findings suggest that both expertise and narratorship will serve as sources of misinformation. However, research has yet to examine the two factors separately. This study has the circumscribed goal of untan-

gling the influence of expertise and narratorship as a source of socially shared misinformation. Specifically, it explores whether dominant narrators have a greater influence on the postevent information effect than experts do, whether the influence of the narrators is independent of any effect expertise might have, and finally whether the mode by which instructions are given to the expert (private vs. public) affects the postevent misinformation effect.

## Method

Each member of a group of three or four individuals received different versions of a curriculum vitae (CV) of a job candidate to study and recall individually. Following the individual recall, participants were asked to jointly recount the CV. In each group, the participants were falsely led to believe that one of the participants possessed greater expertise for the material than the other participants. Following the group recounting, participants were instructed to recall the original CV individually and then to complete a four-alternative forced-choice recognition test. The alternatives were made up of the critical items that differed across the four versions of the CV. That is, the alternatives in the four-alternative forced-choice recognition probe consisted of the critical items drawn from the four different versions. By varying the level of expertise of the participants and by calculating the level of contribution of each participant in the group recounting, we were able to track the contribution of expertise and narratorship to the postevent information effect.

## Participants

A total of 101 native English-speaking adults (private condition:  $n = 61$ ; public condition:  $n = 40$ ) participated in the experiment in either three-person or four-person mixed-sex groups to create a total of 28 groups.<sup>1</sup> Data were not collected in one group because of technical difficulties with the audio recording equipment. Thus, 16 groups were tested with instructions given using the private method and 12 groups with instructions given using the public method. Participants were students recruited from classes at The New School for Social Research or through advertisements placed on Craig's List ([www.craigslist.com](http://www.craigslist.com)). They were paid \$25 for their participation.

## Stimulus Material

The stimulus material consisted of a CV, a modified version of the one used by Wittenbaum (1998, 2000). The CV

contained 52 facts about the candidate's education and employment background. Of the 52 facts in the CV, we randomly selected 10 and identified them as *critical items*. We constructed four different versions of these 10 critical items and incorporated them in the CV to produce the four different versions. For instance, one CV stated that "Jon had a professorship that was renewable every year," while on the other CVs it was renewable for either 2, 3, or 4 years. In addition to the 10 critical items, we also randomly selected 10 additional facts from the CV to test participants on later. These facts did not vary across the four versions of the CV. From this material, we also constructed 20 four-alternative forced-choice recognition probes. In 10 instances, a probe consisted of the four versions of a critical item, e.g., "Jon had a professorship that was renewable (1) every year, (2) every 2 years, (3) every 3 years, or (4) every 4 years." The 10 "control" probes contained one version-consistent item and three plausible distracters.

## Design and Procedure

As in Cuc et al. (2006), the experiment was divided into five phases: (1) pregroup individual study, (2) pregroup individual free recall, (3) a group recounting, (4) a postgroup individual free recall, and (5) a postgroup individual recognition test. In a departure from Cuc et al. (2006), one participant in each group was randomly assigned the role of an expert. The experiment began with the group of participants assembling in the same room. Following Wittenbaum (2000), participants were instructed in front of each other that they would be acting as members of a hiring committee. The experimenter explained that, as in the real world, where some committee members have more experience than others, one committee member will be chosen to serve as the senior committee member (SCM), whereas the other participants will be junior committee members (JCM). The experimenter then asked the participants to draw a slip of paper from a box, which would indicate whether they would play the role of SCM and JCM. The drawing would continue until someone was chosen to be SCM. In reality, the slips all contained the label "Senior Committee Member." The person first randomly selected to participate in the draw was always the SCM. The outcome was announced to the group. The experimenter, then, told all the participants that, in order to make the assignment credible, the SCM would have more time to study the CV they were about to receive, and that the CV the SCM received would contain more information than the CV the JCMs received. This information was misleading. Study time was equal for both the SCM and the JCMs, and the CVs were similar, except for the critical

<sup>1</sup> We had different sized groups because, in 44% of the trials, one member of the group failed to appear at the appointment time. We compared results for the three- and four-person groups and found no difference. As a result, in all analyses we did not treat group size as a factor.

details. Expertise was operationalized as being assigned the SCM role. In the results section, we refer to the SCM as the “perceived expert.”

Following expert assignment, the experimenter ushered participants into separate testing rooms. Subsequently, the experimenter gave each participant the CV of the fictitious job candidate. Each participant randomly received a different version of the CV, with each version differing in the content of the critical items. Participants were individually instructed that they would have 15 min to study the CV, which they would later discuss with the other group members. Each participant was then given a questionnaire from a separate experiment as a distracter task. The JCMs were told that the SCM would not be completing the questionnaire, but would spend the allocated 15 min studying the candidate in more detail. The JCMs were told that the other JCMs would be proceeding as they were. After 15 min had elapsed, the experimenter instructed each participant to recall individually everything they could remember about the two candidates into a hand-held tape recorder. The same recall procedure was followed for the SCM and the JCMs. Following the pregroup individual free recall, participants were brought back into the original room.

The manipulation phase then began. For the private instructions condition, prior to leaving her personal room, the SCM was given instructions about how much to contribute to the conversation. In the public instructions condition, the SCM received the instruction after returning to the common room. In this condition, the instructions were given in front of all group members. In the instructions, the experimenter told the SCM to speak *only* when she felt that it was very important: “As the SCM, your job is to primarily listen to what the other group members say. Please interject only if you feel that it is necessary or if group members left out some important information.”

After these preliminaries, the group recounting phase began. It commenced with the group discussing what they did over last New Year’s Eve. The experimenter elicited this reminiscence in order to facilitate conversation among the group of strangers. The experimenter was present for the entire time, ensuring that group members did not discuss any of the stimulus material. After 10 min of this incidental conversation, the experimenter instructed the group that they should recall as a group as many details that they could about the candidate. Participants were explicitly instructed to recall the information contained in the CV and to avoid discussing their impressions of the candidate for the position. The experimenter reminded the group that one member was serving as the SCM (pointing to the group member), whereas the other group members were JCMs. The experimenter also indicated once again that the SCM had spent more time studying the CV rather than completing the questionnaire. Participants were given no additional instructions about how the group recounting should proceed. The group recounting was recorded on a tape recorder with full knowledge of the participants. The experimenter remained present in order to ensure that the participants followed the instructions.

Following group recounting, participants were then ushered back into separate rooms and instructed to individually recall everything they could remember about the candidate. We employed the same instructions here as for the pregroup individual free recall. The postgroup individual free recall always began 5 min after the end of the group recounting. After the postgroup individual free recall, each participant was asked to complete another distracter questionnaire, again for 15 min. Following the distraction, the participants completed the four-alternative forced choice recognition task. At the end of the recognition task, participants were asked to rate on a scale of 1–5 the degree to which they thought the SCM knew the information better than the other members in the group. Any score above 3 indicated that the SCM’s knowledge was better than the other members; any score below 3 indicated worse knowledge. A score of 3 indicated that the SCM’s knowledge was equivalent to everyone else’s.

The study then concluded with a debriefing session in which the experimenter assessed each participant’s experience of the study and, in particular, their awareness of various experimental manipulations. The debriefing session revealed that participants were not suspicious of the expertise manipulation, the stimulus materials, or the instructions during the second individual recall phase.

This design and procedure yielded four independent variables (Instructions, Recall Phase, perceived Expertise and Narratorship). Instructions refer to the public versus private conditions. Recall Phase refers to performance in the pregroup recounting, performance in the group recounting, and performance in the postgroup recounting. For perceived Expertise, participants were classified as either an expert or nonexpert according to the role that they played in the conversation (as the SCM or one of the JCMs), a dichotomous measure of perceived Expertise. (As noted, throughout the remainder of the paper, SCM and JCM are referred to as experts and nonexperts, respectively.) For Narratorship, a participant was classified as either a narrator or a nonnarrator using a modification of a method devised by Cuc et al. (2006). In addition, this modified measure of Narratorship also produced a continuous measure of Narratorship for each participant in the group recounting. We were interested in the four combinations of Expertise and Narratorship any participant might hold. We principally examined two dependent variables, Critical false recognitions and Critical false recollections.

## Results

### Preliminary Analyses

Inasmuch as our dependent measures involved an individual performing a memory test in isolation, there was no need to be concerned about possible interactional effects among group members (see Kashy & Kenny, 2000). Consequently, standard ANOVA was used in the following analyses.

Two coders determined the proportion of critical items mentioned by each participant throughout the three phases of the study. In less than 2% of the cases were there ambiguities between the two coders, and these were resolved. In order to determine the role participants played in a conversation, that is, whether they were a dominant narrator or a nonnarrator, we modified the procedure devised by Cuc et al. (2006). Cuc et al. tabulated the number of idea units uttered in a conversation. Inasmuch as our focus here lies on critical items, we measured Narratorship by calculating the proportion of critical items a conversational participant spoke and used this count as a measure of level of Narratorship. The more critical items contributed by a conversational participant, the greater the level of narratorship of this participant. In order to categorize participants as either the *dominant narrator* or a *nonnarrator*, we defined the former as the participant who offered the most critical items. In nine groups, two group members tied for most critical items mentioned. In these cases, they were both considered dominant narrators. In total there were 9 expert dominant narrators, 19 expert nonnarrators, 28 nonexpert dominant narrators, and 45 nonexpert nonnarrators.

In order to determine whether the original Cuc et al. classification scheme would have assigned the role of dominant narrator to other participants, we analyzed 10% of the group recountings using Cuc et al.'s scheme: We did not find any differences in the classification of participants. For this analysis, the correlation between the number of critical items mentioned by a participant in the group recounting and the number of idea units in the recounting by this participant was  $r(12) = .75, p < .05$ .

It did not seem to matter whether the instructions were private or public. In an ANOVA with three between-subject factors – Instructions (private vs public), Narratorship (narrator vs nonnarrator), and Expertise (expert vs nonexpert) – we failed to find a main effect for instruction nor any interactions between instructions and the other factors. As a result, we combined the data from the two instruction conditions in subsequent analyses.

We also analyzed whether our manipulation of Expertise appropriately affected perceived Expertise. Participants were asked to rate how knowledgeable experts appeared to be in the group recounting compared to nonexperts. Ratings of nonexperts were not assessed. Participants rated experts as displaying greater knowledge than the nonexperts ( $M = 3.62, SD = .95$ ). We conducted a one-sample *t*-test to investigate whether experts were rated significantly above the neutral value of 3. The analyses showed that expert ratings were significantly greater than the neutral value,  $t(27) = 3.38, p < .002, d = .65$ . Interestingly, experts who were narrators received significantly higher ratings than experts who were nonnarrators,  $t(26) = 2.35, p < .03, d = .99$  (narrator,  $M = 4.20, SD = .76$ ; nonnarrator  $M = 3.35, SD = .95$ ).

We first look at the data from the pregroup individual free recall, the group recounting, and the postgroup indi-

vidual free recall to determine the proportion of critical items introduced in each phase of the study. We then focus on the performance in the recognition test. Finally, we further examine pregroup and postgroup recollections. In each instance, we explore how the various dependent measures vary as a function of perceived Expertise and conversational role, with the aim of determining the relative contribution of Narratorship and Expertise to the imposition of memories onto others.

## Critical Items in Pregroup, Group, and Postgroup Recall

In some instances, we could not determine the critical items that appeared in either the pregroup individual free recall, the group recounting, or the postgroup individual free recall because of technical problems, such as tape recorder failure, a poor recording, or mumbling. We treated the uncollected data as a missing cell in our analyses. For instance, a participant may have had tape recorder problems during the individual pregroup free recall but produced reliable data in the group recounting. We kept the data from the group recounting and the postgroup individual free recall and treated the pregroup individual free recall as missing data. As a result, the degrees of freedom in our ANOVA differed across analyses, as did the degrees of freedom in our posthoc analyses. In less than 3% of the cases did an individual recall in the group recounting a critical item that was featured in a version of the CV other than his or her own. We excluded these items from our analyses.

There were several instances in which group members introduced competing critical items into the group discussion. However, the competing information pertained to a single critical item in a group recounting in all instances and then in only 13% of the recountings. They were included in the analyses.

Table 1 contains the proportion of critical items mentioned by a particular participant in her pregroup individual free recall, the group recounting, and her postgroup individual free recall. The literature on group remembering indicates that, without consideration of conversational role or expertise, what is recollected in the group recounting is less than the sum of the pregroup individual recollections (e.g., Andersson & Ronnberg, 1995; Baden et al., 2000; Weldon & Bellinger, 1997). Such collaborative inhibition suggests that an individual's recollection in the group recounting should, on average, be less than his or her pregroup individual recollection. On the other hand, because the group recounting will still contain more than any individual is capable of remembering alone, the group recounting can – and does – improve subsequent recollections. As a result, the proportion of critical items in the postgroup individual recollections should be greater than the proportion of critical items in the pregroup recollections (Cuc et al., 2006). As

*Table 1.* Proportion of critical items mentioned during pregroup individual recollections, group recounting, and postgroup individual recollections, as a function of Expertise and Narratorship

	Pregroup	Group	Postgroup
Dominant narrator			
Expert	.46 (.19)	.42 (.18)	.46 (.21)
Nonexpert	.46 (.16)	.41 (.12)	.47 (.15)
Nonnarrator			
Expert	.32 (.14)	.18 (.10)	.37 (.19)
Nonexpert	.18 (.17)	.15 (.11)	.22 (.17)

*Note.* Standard deviations (*SD*) are in parentheses.

to the role of Narratorship and Expertise, according to the collective information sampling bias, both dominant narrators and experts should have a larger number of critical items in the group recounting than nonnarrators and nonexperts, respectively.

In order to test these predictions, we undertook an ANOVA with Recall Phase (pregroup, group, and postgroup) as a within-subject factors and Narratorship and Expertise as between-subject factors. Given that the sphericity assumption was violated,  $\chi^2(2) = 12.11, p < .02$ , we used a Huynh-Feldt correction. There was a significant main effect for Recall Phase,  $F(2, 148.33) = 15.14, p < .001, \eta_p^2 = .16$ , a significant interaction between Recall Phase and Narratorship,  $F(1, 148.33) = 4.63, p < .02, \eta_p^2 = .06$ , and a trend for the three-way interaction between Recall Phase, Narratorship, and Expertise,  $F(1, 148.33) = 3.03, p < .06, \eta_p^2 = .04$ . There was no significant interaction between Recall Phase and Expertise. Posthoc analyses showed that the proportion of critical items recalled by a participant in the pregroup recollection was significantly greater than the proportion of critical items the participant recalled in the group recounting,  $t(86) = 3.71, p < .001, d = .28$ , demonstrating once again the effects of collaborative inhibition. In addition, the proportion of critical items recalled by a participant in his postgroup recollection was greater than the proportion of critical items recalled by this participant in his pregroup recollections,  $t(86) = 3.27, p < .002, d = .18$ , reaffirming the benefits of group recounting on subsequent remembering. Investigating whether experts and dominant narrators introduced more critical items in the group discussion, we found no difference between experts ( $M = .26$ ) and nonexperts ( $M = .23$ ),  $t(91) = .79, p = .43, d = .18$ . However, our findings revealed a significant difference between dominant narrators ( $M = .41$ ) and nonnarrators ( $M = .16$ ),  $t(91) = 9.60, p < .001, d = 1.96$ . Although the proportion of recalled critical items was small, the results confirm in large part the predictions we made based on the literature: (1) the presence of collaborative inhibition, (2) a positive effect of group recounting on subsequent recall, and (3) an advantage for narrators to introduce their critical items into the group.

## Critical False Recognitions

When it comes to the postgroup recognition test, our main interest was whether the rate of critical false recognition depended on the source of the critical item in the group recounting. Could the source of the critical false recognitions be traced to the critical items mentioned in the conversation by other participant, and if so, does the source vary in a systematic way along the dimensions of Expertise and Narratorship? We, therefore, focused our analysis on the false recognition rate for critical items, that is, items that varied across the four versions of the CVs. In order to calculate the critical false recognition rate, for each group member, we first identified the critical items she had contributed to the group recounting. We then examined the proportion of times other participants had falsely recognized one of these critical items in their postgroup recognition. We undertook this analysis one participant at a time. For example, if Participant A mentioned five critical items in the group recounting, we first determined what proportion of these items were falsely recognized in the postgroup recognition by Participant B. We then undertook a similar calculation for Participant C, and finally another for Participant D. We then averaged the proportions calculated for Participants B thru D to arrive at a measure of the influence Participant A's group recounting had on subsequent recognition. We tabulated the data in Table 2 by identifying whether the source of a critical false recognition, in our example, Participant A, was an expert or nonexpert, as well as a dominant narrator or a nonnarrator. Our experimental design does not allow us to look at the effect one expert might have on the critical false recognition rate of another expert, inasmuch as there was only one expert per group. This design feature makes it difficult to make sense of any data we collected on the effect of nonexperts on experts. We, therefore, streamlined our data analysis to the critical false recognition rates of nonexperts.

Cuc et al. (2006) treated Narratorship as a dichotomous variable (dominant narrator versus nonnarrators). Inasmuch as we had no a priori reason to believe otherwise, we initially followed Cuc et al.'s lead and used an ANOVA in our analysis. We then explored whether similar results could be obtained if we treated Narratorship as a continuous variable, now employing a regression analysis. In our ANOVA of calculated proportions there were two between-subject factors: Expertise (expert versus nonexpert) and Narratorship (narrator versus nonnarrator). We were seek-

*Table 2.* Proportion of influence participants had on nonexperts during the postgroup recognition task. Results are shown separately for Expertise and Narratorship

	Expert	Nonexpert
Dominant narrator	.29 (.14)	.15 (.15)
Nonnarrator	.13 (.16)	.10 (.20)

*Note.* Standard deviations (*SD*) are in parentheses.

ing to determine whether critical items recounted by dominant narrators have an advantage in influencing the memories of other conversational participants and whether the dominant narrators have this advantage because they speak a lot or because they are perceived as experts. We found a significant main effect for Narratorship,  $F(1, 97) = 5.86, p < .02, \eta_p^2 = .06$ , providing support for the claim that narrators have an advantage in imposing their memories onto others (see Table 3). We also found a main effect for Expertise,  $F(1, 97) = 4.03, p < .05, \eta_p^2 = .04$ , thereby replicating previously reported expertise effects (Dodd & Bradshaw, 1980; Smith & Ellsworth, 1987). Our failure to find a significant interaction between Narratorship and Expertise,  $F(1, 97) = 1.51, p > .22$ , suggests that that Expertise and Narratorship act independently on critical false recognitions.

*Table 3.* Proportion of critical items in the pregroup recall of a participant that surfaced in the postgroup recall of the other participants

	Expert	Nonexpert
Dominant narrator	.08 (.07)	.05 (.06)
Nonnarrator	.03 (.05)	.01 (.03)

*Note.* Standard deviations (*SD*) are in parentheses.

As for the regression analysis, we first explored what would be the most appropriate way of expressing Narratorship as a continuous variable. In the Introduction, we speculated that dominant narrators might have an advantage in influencing others' memories, independent of their expertise, because they dominate the discussion and thereby help shape the way the memory was remembered by the group. In addition, because dominant narrators speak more, they will likely draw greater attention to themselves. Dominant narrators could accomplish this outcome in at least two ways:

- 1) Their contribution could be purely arithmetic: The more a dominant narrator talks the more she should influence other members of the group. In this case, if the probability of falsely recognizing a critical item is the same across items, then the probability of falsely recognizing one out of ( $n$ ) items should increase with ( $n$ ), where ( $n$ ) is the number of critical items mentioned by an individual. As a consequence, according to this arithmetic model, the critical false recognition rate for items for any individual might depend on how much this individual talks, in absolute terms. Our first measure, then, is the number of critical items mentioned by a participant in the group recounting.
- 2) Alternatively, dominant narrators might have a disproportionate effect on the memory of other conversational participants because they probably shape the narrative and draw more attention to themselves than do the other participants. This model would assert that the dominance of the narrator should depend on the extent to

which they speak more than anyone else, not the absolute amount they spoke. That is, what might be important is the ratio between how much the dominant narrator says and what other participants say, not the absolute amount the source utters. We therefore calculated the total number of critical items mentioned by a participant divided by the average number of critical items mentioned by the other participants. A ratio of one would indicate that the participant contributed no more critical items to the recounting than the average of the other participants in the group.

The data suggest that the ratio model is a better account of the main effect of narratorship on critical false recognition rates than the arithmetic model. Although the number of utterances and the ratio measure are significantly correlated,  $r = .81, p < .001$ , regression analysis suggests that the ratio measure is sufficient to account for the level of critical false recognition. We undertook a stepwise regression, with two independent variables, the number of critical items recalled by a person and the ratio measure associated with that person. The dependent measure was that person's critical false recognition rate. The analysis produced a single model with one independent variable: the ratio measure,  $F(1, 92) = 15.37, p < .001, R^2 = .15$ , (Ratio standardized  $\beta = .38, t(92) = 3.92, p < .001$ ; Critical items recalled standardized  $\beta = .09, t(92) = .57, p = .57$ ). We therefore use this ratio measure when discussing the contribution of Narratorship to critical false recognitions.

We used this ratio measure in a regression to contrast the relative levels of contribution of Narratorship and Expertise to critical false recognitions. In this regression, we treat both Narratorship and Expertise as continuous variables. As explained above, we averaged critical false recognition rates across the nonexperts in the group to obtain a value for the dependent variable of the regression. The Narratorship measure was the ratio measure for the dominant narrator; the Expertise measure was the average expertise rating of the group. Both independent variables were centered for a step-wise regression, which included the contribution of their interaction on the dependent variable. The model that accounted for our data best contained only the ratio measure of Narratorship as a predictor,  $F(1, 27) = 14.54, p < .002, R^2 = .36$  (Ratio standardized  $\beta = .60, t(27) = 3.81, p < .001$ ; Expertise standardized  $\beta = -.13, t(27) = -.73, p = .47$ ; Ratio  $\times$  Expertise standardized  $\beta = -.43, t(27) = -.96, p = .34$ ). The effect of Narratorship on critical false recognitions is strong enough to make the contribution of Expertise negligible. In order to investigate whether we had a good enough statistical power to examine the associations between variables, we computed a retrospective power analysis. The power analysis revealed a .87 coefficient, which indicates adequate power to detect associations among our variables at a  $p < .05$ , and a sample size of 27.

## Critical Items Moving from Pregroup Individual Recollections to Postgroup Individual Recollections

These analyses of critical false recognitions indicate that (1) critical items recounted by dominant narrators have an advantage in influencing the memories of other conversational participants over the critical items recounted by non-narrators, and (2) this advantage arises because the dominant narrators speak disproportionately more than anyone else. We sought further support for these findings in the postgroup individual free recall. Although the number of recalled items is small, discernable patterns can be found. Some 67% of the critical items mentioned by a participant in the pregroup recollection found their way in that participant's postgroup recollection. But more to the point is the proportion of critical items uttered by one member of the group in the group recounting that appeared in the postgroup of the other group members (see Table 3).

Unlike the recognition data, in order to try to adjudicate between Expertise and Narratorship, we did not begin our analyses of the recall data with an ANOVA. Our study of the recognition data established the appropriateness of treating Narratorship as a continuous variable. We therefore proceeded directly with a step-wise regression. In doing so, we conformed to a procedure proposed by Aiken and West (1991), first centering the ratio measure of Narratorship before entering it into the regression. We then entered Expertise as a categorical variable (contrast coded:  $-.5 = \text{nonexperts}$ ;  $+.5 = \text{experts}$ ), followed by the product for the interaction between Narratorship and Expertise as predictors. This procedure seemed appropriate given that we experimentally manipulated who in the group was an expert and who was a nonexpert. The dependent variable was the averaged proportion of critical items from the pregroup recollection of a group member (expert or nonexpert) that emerged into the other members' postgroup recollections (only nonexperts).

The model that accounted for our data best contained only the Narratorship ratio,  $F(1, 92) = 11.02, p < .002, R^2 = .11$  (Ratio standardized  $\beta = .33, t(92) = 3.32, p < .001$ ; Expertise standardized  $\beta = .19, t(92) = 1.92, p < .06$ ; Ratio  $\times$  Expertise standardized  $\beta = -.02, t(92) = -.18, p = .86$ ). Hence, Narratorship explains more of the social contagion effects than does Expertise. Again, we computed a retrospective power analysis in order to examine whether we had a large enough sample to detect the associations among the variables. The power analysis revealed a .80 coefficient, which indicates adequate power to detect associations among our variables at a  $p < .05$ , and a sample size of 92.

## Discussion

Previous work showed that if the speaker is perceived as an expert or dominates the conversation as a narrator, they

are more likely the source of false memories than if the speaker does not possess these characteristics. The present paper established that the effect of narratorship does not depend on perceived expertise. That is, even though a dominant narrator might often be viewed as an expert, when these two factors are separated, narratorship can still affect the degree to which a listener is influenced by a speaker. Thus, narratorship has a dual advantage in facilitating social contagion:

- 1) It promotes the introduction of unshared memories into the group recounting, as established by Cuc et al. (2006), and
- 2) It increases the probability that these introduced unshared memories will reshape the memories of other conversational participants.

Of course, narratorship was not experimentally manipulated in the present experiment, making any causal claim tentative. Given this caveat, it would appear that whether or not they are viewed as experts, conversations with dominant narrators will have an advantage in promoting social contagion. Of course, there may be instances in which listeners resist the influence of narrators, as the substantial literature on warnings and resistance suggests (Chambers & Zaragoza, 2001; Dehon, 2006; Echterhoff, Hirst, & Hussy, 2005; Loftus, 2005; McCabe & Smith, 2002; Watson, McDermott, & Balota, 2004; Wright, 1993; Wood & Quinn, 2003). Even with a warning about the reliability of a narrator, narrators may still be able to influence subsequent remembering (Muller & Hirst, in press).

Our results suggest only that the effect of expertise cannot account fully for the effect narratorship appears to have on subsequent remembering, not that expertise has no effect. Moreover, the present results should not be taken to suggest that expertise always has less of an influence on subsequent remembering than narratorship. The size of the group may affect the level of contribution of expertise. Since Simmel (1949), scholars have recognized that the dynamics of a group changes with the size of the group. Most of the studies demonstrating an effect of expertise on the misleading postevent information effect have dealt with groups of two. But experts may contribute less in the creation of false recognitions in groups larger than two. A frequently mentioned explanation for the misleading postevent information effect involves source-monitoring difficulties, with theorists arguing that participants falsely recognize misleading information because they do not make the effort to monitor the source of a memory (Johnson, 2006). Variables such as Expertise affect the size of the misleading postevent information effect because they alter the effort participants make when monitoring the source of their memories. In a pair of two, the nonexpert of the pair will not make an effort to monitor the source of a memory, because they trust that the other member of the pair, the expert, will not say something factually incorrect. The expert of the pair, on

the other hand, will continue to make an effort to monitor the source of the other participant's memories, because she does not share the same level of trust for her colleague, the nonexpert. Under these circumstances, experts should be more likely to be a source of a critical false recognition than nonexperts.

When the group is larger, however, there is no guarantee for nonexperts that the source of their memories is the expert. They may know who the expert is, but they may not know whether the source of their memory is the expert. The source could be one of the other nonexperts. Consequently, there is more of a need to monitor for the source of their memories, whether or not an expert was present in the conversation. This increased need for source monitoring would diminish any advantage Expertise might have in influencing subsequent remembering. In terms of our present results, then, the influence of Expertise may have diminished as a function of group size. Moreover, research investigating the role of status in audience tuning has also demonstrated that high status alone is not sufficient for social effects on memory (Echterhoff, Lang, Krämer, & Higgins, in press).

Interestingly, we found that an effect of Narratorship arose in part because the dominant narrator spoke a disproportionate amount when compared to the other conversational participants, not simply because they spoke a lot. That is, our results about the relative contribution of experts and dominant narrators were based on the relative contribution of dominant narrators to a conversation, not their absolute contribution. This conceptualization conforms nicely with our original claims about the advantage the dominant narrator might have. By speaking a disproportionate amount, the dominant narrator does at least two things:

- 1) calls attention to what she says and
- 2) has an advantage in crafting the narrative.

If she merely spoke a lot, with other conversational participants speaking almost as much, then neither of these outcomes would be likely.

Cuc et al. (2006) emphasized that by serving as vehicles of social contagion, dominant narrators were able to shape the memories of group participants to reflect their own rendering of the past. The emerging consensus can be treated as the group's collective memory (Coman, Brown, Koppel, & Hirst, in press; Hirst & Echterhoff, 2008; Hirst & Manier, 1996, 2008; Olick, 1999). By collective memory, we mean a shared memory that has the potential to bear on a group's identity. We are focusing here on the "shared" aspect of collective memories. Our results underscore the powerful influence a dominant narrator can have on the formation of a collective memory and hence collective identity. Moreover, our results suggest that this effect can occur independent of whether the narrator is viewed as an expert. One can imagine a variety of circumstances in which one person dominates a discussion, even though the group does not view the

individuals as possessing any special knowledge or expertise. In many such instances, it is merely a matter of politeness that supplies the opportunity for dominance. In others, it may be the group members' personality. Whatever the reason, the present research indicates that this simple act of politeness or the personality of the group members may have dramatic (and in some cases, dire) consequences for the way the group remembers the past.

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