Becoming Famous Overnight: Limits on the Ability to Avoid Unconscious Influences of the Past

Larry L. Jacoby
McMaster University
Hamilton, Ontario, Canada

Colleen Kelley
Williams College

Judith Brown and Jennifer Jasechko
McMaster University
Hamilton, Ontario, Canada

Nonfamous names presented once in an experiment are mistakenly judged as famous 24 hr later. On an immediate test, no such false fame occurs. This phenomenon parallels the sleeper effect found in studies of persuasion. People may escape the unconscious effects of misleading information by recollecting its source, raising the criterion level of familiarity required for judgments of fame, or by changing from familiarity to a more analytic basis for judgment. These strategies place constraints on the likelihood of sleeper effects. We discuss these results as the unconscious use of the past as a tool vs its conscious use as an object of reflection. Conscious recollection of the source of information does not always occur spontaneously when information is used as a tool in judgment. Rather, conscious recollection is a separate act.

Is Sebastian Weisdorf famous? To our knowledge he is not, but we have found a way to make him famous. Subjects read a list of names, including *Sebastian Weisdorf,* that they were told were nonfamous. Immediately after reading that list, people could respond with certainty that Sebastian Weisdorf was not famous because they could easily recollect that his name was among those they had read. However, when there was a 24-hr delay between reading the list of nonfamous names and making fame judgments, the name *Sebastian Weisdorf* and other nonfamous names from the list were more likely to be mistakenly judged as famous than they would have been had they not been read earlier. The names became famous overnight.

This becoming famous overnight can be termed a *sleeper effect.* Reading a nonfamous name must increase its familiarity, and the delay must influence familiarity less than recollection of the source of that familiarity. After a delay, an old nonfamous name is judged as famous because it seems familiar and is not recognized as being from the earlier-read list. The differential effect of delay on familiarity and on recollection of the source of that familiarity is similar to the sleeper effect observed in attitude change research (e.g., Greenwald, Pratkanis, Leippe, & Baumgardner, 1986; Hovland, Lumsdaine, & Sheffield, 1949; Pratkanis, Greenwald, Leippe, & Baumgardner, 1988). In those experiments, a persuasive message from a low-reliability source did not influence attitudes immediately but did change attitudes after a delay. Hovland et al. argued that initially the message was discounted because its untrustworthy source was readily remembered. Across time, the message was said to become dissociated from its source and consequently was not dis-

counted. We discuss our findings regarding fame in the context of the conditions necessary for producing a sleeper effect (cf. Greenwald et al., 1986) and argue that those boundary conditions are important for avoiding misleading effects of the past in a variety of social domains.

The sleeper effect found for fame judgments might differ in important ways from that found in investigations of attitude change. In attitude change experiments, people are asked to evaluate an expressed opinion or the truth of a statement, tasks that might seem very different from that of judging the fame of a name. The manipulation of source in those experiments involved telling subjects that the message came from a person or agency of varying reliability or prestige. Recalling the source of the message in studies of attitude change does not allow one to respond with certainty. The validity of a message is not absolutely determined by knowing that it came from a low- or high-reliability source. However, in our experiments, recollection that a name had been read in a previously presented list ensured that it was nonfamous. The source of the names' familiarity was their prior presentation in a list of nonfamous names.

Despite these differences, we think there are important parallels between the sleeper effect in fame judgments and the sleeper effect on attitude change. The familiarity due to prior presentation of an item that influences fame judgments also influences judgments used to measure attitude change. For example, when unfamiliar but plausible statements are repeatedly presented to subjects, those statements are rated as more true than are statements that have not been previously presented (e.g., Bacon, 1979; Hasher, Goldstein, & Toppino, 1977). Similarly, prior presentation of an affectively neutral item makes it likely that the item will later be rated more positively (e.g., Zajonc, 1980). We argue that effects of this sort are widespread and rest on an attribution process that involves unconscious influences of the past. Findings regarding unconscious influences of the past may

Correspondence concerning this article should be addressed to Larry L. Jacoby, Department of Psychology, McMaster University, Hamilton, Ontario, Canada L8S 4K1

aid one in understanding how messages affect attitudes even without recollection of the source of those messages. For those purposes, there are advantages to be gained by arranging the situation such that recollection of source allows one to respond with certainty.

Unconscious Influences of the Past

Any effect of reading a name on its familiarity that remains when one does not consciously recollect having earlier read the name can be considered an unconscious influence of the past. By *unconscious* we mean only that a person is not aware of a particular prior experience as being the source of effects on performance. Past experience can influence the perception and interpretation of later events even when a person is unable to consciously recollect the relevant prior experience (see Richardson-Klavehn & Bjork, 1988, for a review). Prior presentation of a word can enhance its later tachistoscopic identification (e.g., Jacoby & Dallas, 1981), facilitate completion of a fragmented version of a word (e.g., Tulving, Schacter, & Stark, 1982), increase the speed of identifying the word in a lexical decision task (e.g., Scarborough, Cortese, & Scarborough, 1977), and increase the speed of reading an inverted version of the word (e.g., Kolers, 1976), all without recognition memory for the word. We expected a similar dissociation between effects of reading a name on its familiarity, as measured by fame judgments, and a person's ability to recognize the name as one read in an earlier list.

Unconscious influences of the past might seem surprising. Folk wisdom has it that one benefits from experiences by consciously recollecting those experiences and applying them to a current situation. In contrast, we take a different approach by starting from the assumption that rather than being a necessary precursor, awareness often serves to oppose effects that would otherwise occur. For example, telling a story once might make it more likely that the story will come easily to mind later and be retold without recognizing that one is doing so. Conscious recollection of having previously told the story can be used to avoid repeating oneself. Similarly, in our experiments, reading a nonfamous name has the unconscious influence of increasing the familiarity of that name and makes it more likely that the name will later mistakenly be called famous. Conscious recollection of the name as read in the earlier list opposes this unconscious influence and allows one to be certain that the name is nonfamous.

Placing conscious recollection in opposition to unconscious influences of the past is important methodologically to clearly specify unconscious effects. If conscious recollection and unconscious influences of the past are in the same direction, effects thought to be unconscious may actually be conscious effects that went undetected by the experimenter (e.g., Holender, 1986). This possibility is ruled out when conscious recollection produces effects that are opposite from unconscious influences of the past. Any increase in the probability of mistakenly calling a nonfamous name famous must result from an unconscious influence of the past, because conscious recollection of the name as previously read in the list of nonfamous names would dictate an opposite response. Thus, placing the two in opposition allows one to separate the effects of conscious recollection of source from unconscious influences of the past.

Conscious recollection of the source of familiarity serves as one means of avoiding misleading effects of the past. A second means of avoiding such effects is to use a basis for judgments that is not open to unconscious influences. These two means of avoiding misleading effects of past experience are described in turn.

Conscious Recollection of Source as a Separate Act

The sleeper effect has been interpreted as a dissociation (the loss of an association) across time between memory for source and memory for the message gained from that source (e.g., Hovland et al., 1949). We believe that this interpretation is misleading in that it seems to imply that when the two are "associated," encountering a message results in its earlier source spontaneously and passively coming to mind. In contrast, we think that using a message and consciously recalling its source are separate acts involving a different focus of attention and different retrieval orientations. As a commonplace example, when thinking about a problem we are undoubtedly influenced by the work of others in the field. However, when our attention is focused on the problem, other people's ideas may come to mind and be used without reference to their original source. We may then attempt to recall the source of those ideas, or if we are very focused on the problem and less concerned about unintentional plagiarism, we may not even attempt to remember the source and instead assume that the ideas are our own. Failure to recollect source often occurs simply because one did not make an attempt at recall rather than because one truly forgot the source. Even on an immediate test, recollection of the source of a message and uses of memory for that message involve separate acts. Across time, recollection of source becomes more difficult and uncertain, consuming more time and resources. Unless a high premium is placed on recollection of source, it is likely to be neglected in favor of the task at hand.

If the unconscious use of a message and recollection of its source are indeed separate acts, it is important to determine the conditions that encourage people to attempt to recollect source. The problem is the same as that of determining under what conditions other attributions involved in causal reasoning will be made (e.g., Hastie, 1984; Weiner, 1985; Wong & Weiner, 1981). In some sense, the environment must "ask the question about source"; the situation must be such that conscious recollection of source is worth its expense. Attempts to consciously recollect whether a message has been received from a misleading source might not be worthwhile when retrieval is difficult and the probability of the message coming from that source is low. Most other investigations of memory for source direct people to recall the earlier source of a message (e.g., Johnson & Raye, 1981). This requirement to recall source might overestimate the probability of its being recollected had people not been instructed to do so. In contrast, fame judgments can be used to measure spontaneous monitoring of source. When asked only to make fame judgments, people may not attempt to recollect whether a presented name was in an earlier-read list of nonfamous names. Failure to check whether a name was among those read earlier could result in an old nonfamous name being called famous. Effects on fame judgments can be examined to infer whether spontaneous recollection of source occurred. Factors

that control the probability of people questioning the source of effects of the past become important because they determine how and when one is unconsciously influenced by the past.

Multiple Bases for Judgments

An alternative to conscious recollection of source as a means of avoiding misleading effects of the past would be to base judgments on information not open to such effects. Familiarity is a nonanalytic basis for fame judgments, in that a name can seem familiar either because it was read earlier as a nonfamous name or because the name is truly a famous one that has been encountered outside the context of the experiment. More generally, we have argued that familiarity is the attribution of variations in perceptual and conceptual processing to a particular source (e.g., Jacoby & Kelley, 1987; Jacoby, Kelley, & Dywan, 1989). One source of variations in processing is unconscious influences of past experience. For example, reading a word once allows it to be read more fluently later. Those changes in performance can be attributed to the past and experienced as familiarity. An item seems familiar if it can be easily brought to mind or fluently processed. This account of familiarity in terms of fluency is analogous to Tversky and Kahneman's (1973) account of probability estimations based on an availability heuristic. Although attributions are often correct, the effects of prior experience on processing can also sometimes be misattributed, as when an old nonfamous name is mistakenly experienced as famous. The fluency gained from prior processing can also be misattributed to a statement being true, an object being liked, an argument seeming to "fit," or an idea being intuitively obvious. People may attribute effects on performance to whatever source is most obvious, particularly whatever they are asked to judge in an experiment. Thus, subjective experience that has a basis similar to the feeling of familiarity that we are studying in the fame paradigm may be widely used to make judgments.

Other bases for judgments are more analytic than familiarity. An analytic basis for fame judgments is to call a name famous only if one can recall what the named person did to attain fame. Reading a nonfamous name in the experimental setting would have no effect on fame judgments made analytically. If people change the basis for judgments between an immediate and a delayed test, they can alter the form of a sleeper effect. Total reliance on an analytic basis for fame judgments would allow people to fully avoid misleading effects of earlier reading a name.

Changes in the basis for judgments probably determine the form of sleeper effect observed in investigations of attitude change. For example, personal involvement in an issue makes people use more effortful, conscious evaluation of arguments and rely less on superficial factors such as the absolute number of arguments that are offered (e.g., Chaiken, 1980; Petty & Cacioppo, 1979). Similarly, when people are alerted to the possibility of being misled by familiarity, they may switch from familiarity to a more analytic basis for judgments. The advantage of our fame judgment task is that we are able to detect those changes in the basis for judgment. Unlike attitudes, fame judgments can be scored for correctness. A qualitative change in the basis for judgments would appear as a difference in subjects' discrimination between famous and nonfamous names. Chang-

ing from familiarity to an analytic basis for fame judgments would probably reduce the probability of calling any name famous, but would produce a larger reduction for nonfamous than for famous names and so increase discriminability. By using a signal detection analysis we can measure differences in the discriminability or accuracy of judgments (d'), the differences in probability of saying *famous* to famous names as compared with nonfamous names.

Subjects who become aware of the possibility of mistaking the familiarity as a result of prior presentation for fame, making familiarity errors, could continue to use familiarity as a basis for judgments but not call a name famous unless it was extremely familiar. This use of a stricter criterion for judgments would reduce the probability of calling any name famous, but would effectively eliminate familiarity errors only if all the famous names were more familiar than the old nonfamous names. The change in criterion would influence the form of a sleeper effect. On a delayed test as compared with an immediate test, a person might be less likely to recollect the earlier-read list as the source of a name's familiarity. However, if people used a criterion for making judgments on the delayed test that was sufficiently more strict than that used on the immediate test, there would not be an absolute increase in the probability of mistakenly calling an old nonfamous name famous. The lower probability of recollecting source would be offset by the use of a more stringent criterion for calling a name famous. Again, using a signal detection analysis we can examine differences in criterion by computing the willingness of people to call any name famous.

In our Experiment 1, we sought a sleeper effect on fame judgments and looked for changes in the basis for judgments across an immediate versus a delayed test. In Experiment 2, our aim was to demonstrate that conscious recollection of having previously read a name as the source of its familiarity involves an act that is separate from the use of that familiarity for making fame judgments. In Experiment 3, we examined whether people can ignore effects on familiarity when making fame judgments. In that experiment, both famous and nonfamous names were among those read earlier, so list recognition of a name was irrelevant to a judgment of its fame. People were told that this was true and that they should disregard or ignore any memory for the previously read names. In the General Discussion section, we discuss the results of our experiments in the larger context of different functions of memory.

Experiment 1

Method

Subjects and design. The subjects were 36 students enrolled in an introductory psychology course; 12 students were randomly assigned to each of three test conditions. The names read in Phase 1 of the experiment were all nonfamous. Names were presented to be read either once or four times, manipulated within subjects. A test of fame judgments was given either immediately or 24 hr after subjects read the list of nonfamous names. We included the immediate and 24-hr-delay test conditions to examine the possibility of a sleeper effect. In both of these conditions, names read in Phase 1 were included in the later test of fame judgments. Number of presentations of a name in the earlier-read list might interact with delay such that a sleeper effect would be observed

for names presented once but not for those presented four times. In the third test condition, there was no overlap between names read in Phase 1 and those presented for fame judgments. This third test condition was included as a baseline against which we could examine any effects on fame judgments of confusion among sources of familiarity. For the baseline condition, the test of fame judgments was given immediately after the list of nonfamous names had been read. It seemed unnecessary to include a baseline condition that was tested after a 24-hr delay because subjects were assured that there was no overlap between names read in the earlier list and those presented for fame judgments. This being the case, there is no reason to think that delay would have an effect on fame judgments for subjects in the baseline condition.

Materials. We used a pool of 60 famous and 100 nonfamous names (both first and last names). We attempted to find famous names that could be recognized as famous, but that were generally not so famous that subjects could specify the achievement responsible for the named person's fame. This criterion was meant to make it more likely that subjects would base their fame judgments on the name's familiarity. Nonfamous names that would not be known by the subjects in the experiment were selected from a telephone book and from among the names of the experimenters' acquaintances. Nonfamous names were matched with the famous names on the following characteristics: length of first and last name, sex indicated by the first name, and the nationality of origin of the first and last names. Examples of nonfamous names are Sebastian Weisdorf, Valerie Marsh, and Adrian Marr. Examples of famous names are Roger Bannister, Minnie Pearl, and Christopher Wren.

We broke the nonfamous names into three sets of 20 names that served as test items and two sets of 20 names used to produce the no-overlap test condition. A list of 100 names was presented to be read in Phase 1 of the experiment. This list comprised 20 nonfamous names that were presented once and 20 nonfamous names that were presented four times. A minimum of 12 names separated repetitions of a name. For the immediate and 24-hr-delay test conditions, 40 old nonfamous names were mixed with 20 new nonfamous and the 60 famous names to be presented for fame judgments. We constructed three study lists by rotating names through conditions such that, across lists, names in each set of 20 nonfamous names were presented once, presented four times, or were new for the test of fame judgments. This was meant to ensure that any differences in fame judgments among the prior presentation conditions could not be due to differences in the particular nonfamous names used. Subjects in the no-overlap test condition received the same test list as did those in the other test conditions; however, the list they read in Phase 1 consisted of the 40 nonfamous names that had not appeared in the test list. The presentation order of names for both study and test lists was random with the restriction that not more than 3 names of one type (e.g., once presented nonfamous) could be presented before the presentation of one name of each of the other types (e.g., four times presented nonfamous). Two random orders of the names in each of the three study lists was used.

Procedure. Names were presented on an Apple computer with a Zenith monitor. In Phase 1, names appeared for 2 s in lowercase letters with the initial letter of each first and each last name capitalized. Subjects were instructed to read the presented names aloud. They were told that we were interested in the speed and accuracy of their pronunciation of the names and that their pronunciation was being recorded. Although a microphone was placed on top of the monitor to make the instructions more credible, neither pronunciations nor latencies were actually recorded.

After reading the nonfamous names, subjects were either immediately given the fame judgment test or were dismissed and asked to return the next day at the same time for further testing. Before the test of fame judgments, subjects were reminded that all of the names they had read in Phase 1 were nonfamous ones. Subjects in the immediate and the 24-

hr-delay test conditions were told that the old nonfamous names would be presented along with new nonfamous and famous names for fame judgments. For the no-overlap test condition, subjects were assured that none of the names presented for fame judgments would be from the list of nonfamous names that they had previously read. Subjects in all test conditions were informed that the famous names were not names of people who are extremely famous, such as Wayne Gretzky or Pierre Trudeau, and told that they would not be asked to describe what a named person had done to become famous. These instructions were meant to encourage subjects to use familiarity as a basis for their fame judgments.

The presentation of names for fame judgments used the same display device and visual format as used for presentation of names in Phase 1. Subjects pressed a key on the right for *famous* and a key on the left for *nonfamous*. After a decision had been made by pressing either key, the message *Press center key when ready* appeared on the screen. Pressing the center key resulted in another name being presented for a judgment of its fame. This sequence continued until all of the names in a list had been tested. Each judgment of fame and its latency was recorded by the computer.

The median judgment latency was computed for each subject for each combination of conditions. We performed analyses on these medians rather than on mean latencies to limit the impact of extremely fast or slow latencies. Significance level for all tests was set at $p < .05$.

Results and Discussion

To check the possibility of a change in criterion or in the basis for fame judgments, we performed a signal detection analysis using data from each of the three test conditions. The probability of calling a famous name famous served as the probability of a hit, and the probability of calling a new nonfamous name famous served as the probability of a false alarm. Those probabilities are displayed for each of the three test conditions in the first 2 columns of Table 1. People in the delayed test condition were generally less willing to call either famous or new nonfamous names famous than were those in either of the other two test conditions. This greater conservatism was probably meant to protect against mistakenly calling an old nonfamous name famous. The signal detection analysis provided evidence of a difference in conservatism among conditions by revealing a significant effect of condition on the criterion used for decisions, $F(2, 33) = 4.38$ ($MS_e = 3.69$). The criterion used (β) was lower in the no-overlap test condition (1.37) than in either the immediate or the delayed test condition (2.78 and 3.68, respectively). A second way of reacting to confusion among sources of familiarity would be to increase reliance on a basis for fame judgments that is more analytic than judging a name's familiarity. The difference among conditions in the ability to discriminate between famous and new nonfamous names (d') approached significance, $F(2, 33) = 2.40$ ($MS_e = .279$), $p < .11$. Discrimination in the delayed test condition (1.62) was better than in either the immediate or the no-overlap test condition (1.39 and 1.14, respectively). The difference in d' between the delayed and the no-overlap test conditions was significant, $t(33) = 2.23$. The difference in d' can be taken as evidence that subjects in the delayed test condition, as compared with those in other conditions, relied more heavily on an analytic basis of judging fame. Thus, there was evidence that increasing the delay between reading the list of nonfamous names and making fame judgments resulted in the use of a more stringent criterion and in greater reliance on an analytic basis for fame judgments.

Table 1

Probability of Judging a Name Famous and Median Decision Time (in ms) for Correct Judgments

| | | Type of name | | |
| | | | Nonfamous | |
Test condition	Famous (New)	New	1	4
Immediate				
Probability	.64	.21	.12	.03
Decision time	1,407	1,862	1,606	1,252
Delayed				
Probability	.55	.08	.16	.08
Decision time	1,588	1,670	1,719	1,379
No overlap				
Probability	.68	.28	—	—
Decision time	1,384	1,668	—	—

Note. Correct judgments: famous called *famous;* nonfamous called *nonfamous.*

Later analyses excluded data from the no-overlap test condition and tested for a sleeper effect by comparing the effects of previously reading a nonfamous name on the probability of its mistakenly being called famous in the immediate versus the delayed conditions. Results that entered into those analyses are also displayed in Table 1. An analysis of the probabilities of falsely calling a name famous showed a significant main effect of prior presentation (new vs. once-presented vs. four-times-presented names), $F(2, 44) = 5.17$, and a significant interaction between prior presentation and test condition, $F(2, 44) = 5.44$ ($MS_e = .012$). The form of the interaction clearly reveals a sleeper effect. For the immediate test, old nonfamous names that had been read once or four times (.12 and .03, respectively) were less likely to be called famous than were new nonfamous names (.21). For the delayed test, old nonfamous names read once (.16) were more likely and names read four times were as likely (.08) to be called famous as were new nonfamous names (.08). The probability of calling an old nonfamous name famous increased across delay, whereas that of calling a new nonfamous name famous decreased across the delay. As discussed earlier, the reduction in the probability of false fame for new nonfamous names reflects the use of a more stringent criterion for the delayed test than for the immediate test.

Another set of analyses examined the time to make correct famous and correct nonfamous judgments for the separate conditions. The analysis of times for correct judgments of fame did not reveal any significant effects. Whereas the analysis of correct judgments of fame included data from the no-overlap test condition, the analysis of time to correctly reject nonfamous names included only data from the immediate and the delayed test conditions. That analysis revealed that the time to correctly reject a name as nonfamous varied significantly across conditions, $F(2, 44) = 13.19$ ($MS_e = 101,200$). Nonfamous names that had earlier been read four times were rejected more rapidly (1,316 ms) than were nonfamous names that had earlier been read only once or that were new (1,662 and 1,766 ms, respectively). These differences were probably because recollection of having earlier read a name in the list of nonfamous names could

serve as a quick basis for judging the name as nonfamous. List recognition was probably faster for names read four times than for those read only once. As shown in Table 1, differences in speed of rejecting nonfamous names were larger and sometimes differed in direction on the immediate test as compared with the delayed test. For the immediate test, once-presented old nonfamous names were rejected more rapidly than were new nonfamous names, whereas on the delayed test, once-presented names were rejected less rapidly than were new nonfamous names. This pattern of results can be taken as showing that list recognition serves as a quick basis for rejecting a nonfamous name only if the name's prior presentation can be easily recollected. Otherwise, because of its prior presentation, a name seems familiar and tempts one to call it famous. For the delayed test, conscious recollection of source is likely to follow a feeling that the name is familiar, whereas for the immediate test, recollection of source is likely to be so easy that it precedes assessment of familiarity and allows a quick basis for rejecting a name.

Clearly, the effects of reading a name on its familiarity remained even when people were unable to recollect the source of that familiarity. These effects on familiarity can be taken as an unconscious influence of the past. This is because conscious recollection of earlier reading a name in the list of nonfamous names would dictate a response (nonfamous) that is opposite to that encouraged by a gain in familiarity (famous). Increasing the delay between reading a list of nonfamous names and the test of fame judgments reduced the speed and probability of consciously recollecting a name as previously read but left the effect of reading a name on its familiarity relatively in place, producing a sleeper effect. Indeed, old nonfamous names did become famous overnight.

Investigators of the sleeper effect in attitude change have distinguished between an absolute and a relative sleeper effect (Cook, Gruder, Hennigan, & Flay, 1979). For a relative sleeper effect, subjects who receive a message from a low-reliability source show an increase in acceptance of the message across time relative to subjects who receive the message alone or linked to a source that should increase its acceptance. For an absolute sleeper effect, there is an absolute increase across time in acceptance of the message from a low-reliability source. An absolute sleeper effect has been very difficult to find (Cook et al., 1979; Pratkanis et al., 1988). Indeed, after repeated failures to find an absolute sleeper effect, Gillig and Greenwald (1974) asked whether it was time to lay the sleeper effect to rest. More recently, Greenwald and his colleagues have again considered the conditions under which a sleeper effect can be observed (Greenwald et al., 1986).

The procedure used for our experiment allows us to further analyze the conditions that are necessary for an absolute versus a relative sleeper effect to be observed and also lets us discriminate between those effects and what Cook et al. (1979) term a *boomerang effect.* Cook et al. suggested that a boomerang effect occurs when the source is held in such low regard that attitudes shift in the direction opposite to that recommended by the message, going below even a no-message baseline. They argued that under these conditions, a dissociation of the message and its source cannot be discriminated from effects produced by reversion over time to the no-message baseline that are produced by

forgetting of the message. For our experiment, the new nonfamous names can be treated as a no-message baseline. Our situation was arranged such that it was akin to a situation in which one could be certain that a message was false if it came from a particular source, so a boomerang effect might be expected. Recollection of a name as having been read earlier made it certain that a name was nonfamous. For the immediate test condition, when recollection of source would be expected to be relatively easy, old nonfamous names were less likely to be called famous than were new nonfamous names. However, at the longer delay, judgments for old nonfamous names did not just return to the no-message baseline as would be required to produce evidence of a boomerang effect. Rather, old nonfamous names were more likely to be called famous than were new nonfamous names on the delayed test, providing evidence of a sleeper effect.

Deciding whether the effect was an absolute or a relative sleeper effect is complicated by the fact that subjects used a more stringent criterion and were more likely to use an analytic basis for judging fame on the delayed test than on the immediate test. If one looks only at performance on old nonfamous names, there is weak evidence of an absolute sleeper effect. There was only a small absolute increase in the probability of calling either once-presented or four-times-presented old nonfamous names famous across delay. However, this small absolute increase is more impressive in light of the fact that people were less willing to call any name famous on the delayed test than they were on the immediate test (the change in criterion used for fame judgments). Also weighing against an absolute increase in false fame across delay, people relied more heavily on an analytic basis for fame judgments on the delayed test than on the immediate test. The full pattern of results can be interpreted as showing that delay produced an absolute sleeper effect that was made less dramatic by the use of a more stringent criterion and by greater reliance on an analytic basis for judgments on the delayed test. Both changes in judgments were probably meant to rule out confusion among sources of familiarity but were unsuccessful in doing so.

It seems likely that differences in bases for judgments also play an important role in determining the form of sleeper effect found in investigations of attitude change. When faced with confusion among information sources, people may be more conservative in the statement of their attitudes. More analytic methods of generating attitudes might also be brought into play. Rather than giving a first impression, people may give a more considered reaction when they have reason to doubt the validity of the information that entered into their first impression (cf. Chaiken, 1980; Petty & Cacioppo, 1979).

Experiment 2

Hovland and Weiss (1951) proposed a dissociation account of the sleeper effect. In their studies of attitude change, they noted that after a delay sufficient to produce a sleeper effect, people were still able to recall the source of the message that was responsible for attitude change. To account for this result, Hovland and associates suggested that delay had the effect of weakening the association between the message and its source so that people may "remember what was said without thinking about who said it" (Hovland, Janis, & Kelley, 1953, p. 259). The notion is that the sleeper effect is produced by a loss of the association between a message and its low-reliability source (discounting cue) across time rather than by simple forgetting of source. In contrast, Pratkanis et al. (1988) offered a differential forgetting account of the sleeper effect. They considered the discounting cue as an opposing communication to the message that it accompanies. A sleeper effect results when the cue and the message originally have a near equal impact, but the impact of the cue decays more rapidly than and independently from that of the message.

In the beginning of this article, we argued that conscious recollection of source always involves an act that is separate from other uses of memory for a message. Rather than passively coming to mind because of its association with a message, conscious recollection of source requires a different retrieval orientation along with a change in the focus of attention. Whereas others (e.g., Johnson & Raye, 1981) have measured memory for source by directly asking people to report the source of a message, we used fame judgments as an indirect measure of source recollection. In Experiment 1, people were not directly asked to report source, but recollection of source produced a fame judgment that was opposite to that produced by failure to recollect source. That arrangement allows one to use effects on fame judgments to infer whether source was spontaneously recollected, that is, recollected when people were not directly asked to report source (cf. Hastie, 1984; Weiner, 1985). Among the factors that likely control the probability of spontaneous source attribution are the difficulty of recollecting source (determined by retention interval, interference, etc.) and the payoff for doing so. People are probably less likely to spontaneously check to see whether a message came from a particular source if doing so is difficult and if they are relatively infrequently misled by messages from that source. In Experiment 2, we meant to show that people would make familiarity errors in fame judgments because of failures to recollect source although they could avoid those errors if they were directly asked to report source as well as making fame judgments.

Method

Subjects and design. The subjects were 32 students who were each paid $5 for participating in the experiment. The materials and procedure were similar to those used in Experiment 1's immediate test condition. However, the list of nonfamous names was longer than that read in Experiment 1, and fewer of the names presented for fame judgments in Experiment 2 came from that list than in Experiment 1. Nonfamous names were presented only once in the earlier-read list. These changes were made to make it less likely that people would spontaneously attempt to recollect source when making fame judgments. Type of name (famous, old nonfamous, and new nonfamous) was manipulated within subjects. Subjects in one condition made only fame judgments, whereas those in a second condition were required to make a list-recognition decision as well as a fame judgment for each presented name. We randomly assigned 16 subjects to each of the groups.

Materials. A list of 150 nonfamous names was presented to be read in Phase 1 of the experiment. From that list, 15 names that appeared neither near the beginning nor near the end of the list were selected for presentation for fame judgments. We mixed these 15 old nonfamous names with 45 new nonfamous and 60 famous names to form a test list. Of the new names used, a set of 15 new nonfamous names and a set of 15

famous names were treated as critical for analyses. Analyses examined performance on only the subset of famous names to make the number of observations for famous names equal to that for each of the types of nonfamous name. Two study lists were constructed such that names that served as old nonfamous names when one study list was used served as new nonfamous names when the other study list was used. Other details of the selection of materials and construction of lists were the same as for Experiment 1.

Procedure. The presentation of names to be read in Phase 1 was subject paced. After a name had been read, subjects pressed the space bar on the computer keyboard to cause the name on the screen to disappear and to be replaced 0.5 s later by another name. After reading the list of nonfamous names, the subjects were given the fame judgment test. Subjects were informed that all the names they had earlier read were nonfamous, so if they recognized a name as previously read they could be certain the name was nonfamous. Subjects in a single-task condition were only instructed to judge the fame of tested names, whereas those in a dual-task condition were instructed to make both a fame and a list-recognition memory judgment for each tested name. In the dual-task condition, the fame judgment was made prior to the list-recognition memory judgment. For both conditions, each tested name appeared on the screen with the message *Famous or Nonfamous* printed beneath the name. As in Experiment 1, subjects made fame judgments by pressing a key on the right for *famous* and a key on the left for *nonfamous.* In the single-task condition, pressing a key to make a fame judgment resulted in the screen being cleared. After a 1.5-s delay, the next name was presented for test accompanied by the message directing subjects to judge the name's fame. In the dual-task condition, pressing a key to judge the fame of a name resulted in the message *Famous or Nonfamous* disappearing and being replaced by the message *Old or New.* This message signaled subjects to make a list recognition memory decision by saying *old* or *new.* The experimenter recorded the subject's recognition memory decision by pressing a key on a pad separate from that used by subjects for fame judgments. The pressing of a key by the experimenter immediately cleared the screen, and after a delay of 1.5 s the next name was presented accompanied by the message *Famous or Nonfamous.* Other details of the procedure were the same as in Experiment 1.

Results and Discussion

The probability of calling a name famous is displayed in Table 2 separately for each combination of conditions. We used a signal detection analysis to examine the possibility that subjects used different bases for judgments in the single-task versus the dual-task condition. For that analysis, the probability of calling a famous name famous served as a measure of hits and the probability of calling a new nonfamous name famous served as a measure of false alarms. The criterion used for fame judgments (β) was higher when both recognition memory and fame judgments were required (1.736) than when only fame judgments were required (0.897), $t(30) = 2.424$. Subjects in the two conditions did not differ significantly in their ability to discriminate between famous and new nonfamous names, d', $t(30) < 1$. Requiring subjects to make list recognition judgments as well as fame judgments apparently made them more aware of the possibility of confusion among sources of familiarity. They reacted to this possibility by using a criterion for fame judgments more stringent than that used by subjects who only made fame judgments.

We also compared the probability of calling old versus new nonfamous names famous in the single- versus the dual-task

Table 2
Probability of Judging a Name Famous

Test condition	Type of name		
		Nonfamous	
	Famous (New)	New	Old
Single task	.63	.32	.38
Dual task	.59	.23	.20

condition. That analysis revealed a significant effect of single versus dual task, $F(1, 30) = 4.98$ ($MS_e = .06$). The dual-task condition, which required list recognition as well as fame judgments, resulted in a lower probability of a nonfamous name being called famous (.21) than did the single-task condition, which required only fame judgments (.35), regardless of whether the nonfamous name was old or new. This overall difference in the probability of calling a nonfamous name famous reflects the difference between conditions in stringency of criterion that was described earlier. Of greater interest was the significant interaction between task and type of nonfamous name on the probability of calling names famous, $F(1, 30) = 6.08$ ($MS_e = .007$). When only fame judgments were required, old nonfamous names were more likely to be called *famous* than were new nonfamous names (.38 and .32, respectively). In contrast, when both list recognition memory and fame judgments were required, old nonfamous names were slightly less likely to be called famous than were new nonfamous names (.20 and .23, respectively). This pattern of results shows that source recollection is not always spontaneous. People in the single-task condition made familiarity errors because they failed to recollect source when making fame judgments. Those familiarity errors were avoided by people who were required to recollect source (make list recognition judgments) in addition to judging fame. In part, at least, familiarity errors were produced by people failing to spontaneously recollect source rather than by total forgetting of source.

Comparing results across experiments, subjects in Experiment 2's single-task condition were more likely to call once-presented old nonfamous names famous than they were to call new nonfamous names famous, whereas those in the Experiment 1's immediate test condition were less likely to make such a familiarity error. This pattern of results shows that spontaneous recollection of source when making fame judgments was more likely in Experiment 1 than in Experiment 2. That difference is not surprising. The longer list of nonfamous names read in Experiment 2 made recollection of source more difficult than in Experiment 1. Also, the smaller proportion of old nonfamous names presented in Experiment 2 made a payoff for attempting to recollect source less likely than in Experiment 1. When recollection of source is easy and when the probability of a payoff for attempting to recollect source is high, as in the first experiment, spontaneous recollection of source is more likely. That spontaneous recollection was likely is shown by the pattern of results produced by an immediate test in Experiment 1 being similar to that produced by directly instructing people to recollect source in Experiment 2.

An analysis of the latency of correctly rejecting nonfamous names revealed a marginally significant interaction between single versus dual task and type of nonfamous name, $F(1, 30) = 3.76$ ($MS_e = 66,529$), $p < .06$. When recognition memory as well as fame judgments was required, old nonfamous names were rejected more slowly than were new nonfamous names (1,917 ms vs. 1,692 ms), whereas when only fame judgments were required the latency of rejecting old versus new nonfamous names (1,426 ms vs. 1,452 ms) was roughly equal. Also, particularly for old nonfamous names, the latency of correct rejections was longer when both tasks were required rather than only fame judgments. This effect on the latency of correct rejections indicates that conscious recollection of source requires an act that is separate from the use of familiarity to make fame judgments. Recollection of source followed a feeling that an old nonfamous name was familiar in the dual-task condition and allowed that name to be correctly rejected as nonfamous, but carried the cost of requiring additional time to make a judgment.

List recognition performance in the dual-task condition was very poor. The probability of correctly calling an old nonfamous name old was .25. The probability of a false alarm (calling a new nonfamous name old) was .08. There is good reason to think that this low level of performance does not reflect an absolute limit on subjects' list-recognition performance. The low level of performance probably stems from the relatively small proportion of the names that were old. Even when directed to recollect source (make list recognition judgments), people may spend relatively little time and effort attempting to do so when a small proportion of test items comes from the source in question. Another factor that was probably important for producing the low level of list-recognition performance was that subjects were required to make fame judgments as well as list-recognition judgments. In other experiments (e.g., Jacoby, Woloshyn, & Kelley, in press) that have required only list-recognition judgments but that are otherwise comparable to this experiment, we have observed a much higher level of list-recognition performance.

When monitoring the source of effects on judgments, a person is essentially doing two things at once. Attention must be divided between making judgments based on familiarity, for example, and recollecting the source of familiarity to correct those judgments when necessary. Recollection of source requires attention, as do other attributions (e.g., Bargh & Thein, 1985). In other experiments (Jacoby et al., in press), we have shown that familiarity errors that result from a failure to recollect source are much more likely when people's attention is divided by requiring them to do a digit detection task while making fame judgments. The digit detection task requires attention and makes it less likely that people will spontaneously recollect source. People also differ in the extent to which they monitor their performance by spontaneously recollecting source (cf. Snyder, 1974). We have found that the aged are more likely to make familiarity errors that result from a failure to recollect the source of familiarity than are younger subjects (Dywan & Jacoby, 1988). This disadvantage of the aged is true even for older people whose performance on a test of list recognition is as good as that of younger people. The aged appear less likely to spontaneously recollect source even though they could do

so if asked. This failure of spontaneous source monitoring is consistent with the claim that aging is accompanied by reduced attentional resources (Craik & Bryd, 1981).

Most memory experiments study directed rather than spontaneous recollection. Our results show that directed recollection is sometimes more likely than spontaneous conscious recollection (cf. Weiner, 1985). Our procedure could be extended to examining whether other causal attributions are made spontaneously. If attributions are spontaneous, judgments should not be changed by directly asking people to make attributions as well as judgments. For example, people may spontaneously think of some general personality characteristic of a person when asked to judge whether that person is likely to engage in a particular behavior. If such thinking of a general personality characteristic is spontaneous, judgments should not change when people are required to engage in the dual task of reporting on the general personality characteristic as well as making a judgment about the likelihood of the particular behavior. This research strategy is similar to that used to determine whether the encoding of some type of information is "automatic" (Hasher & Zacks, 1979), but is used at the time of test rather than during study. This difference in the locus of the comparison is important for determining when spontaneous attributions influence performance on some ongoing task such as judging fame. The procedure of comparing performance in a single-task condition with that in a dual-task condition at the time of test can be added to other procedures (Weiner, 1985) that have been developed to determine when attributions are spontaneous.

Experiment 3

Experiment 3 was designed to see whether people could ignore memory for an earlier-read list of names when making fame judgments. In Experiments 1 and 2, a simple rule could be used to correct judgments to avoid misleading effects of familiarity. In those experiments, all of the names read in Phase 1 were nonfamous, so that conscious recollection of a name as having been read in the earlier list meant that it was nonfamous. In contrast, in Experiment 3, we made conscious recollection of list presentation irrelevant to fame judgments by earlier presenting famous as well as nonfamous names to be read. Before making fame judgments, subjects were accurately informed that half of the names they had read earlier were famous and half were nonfamous. They were told that this meant that list recognition of a name when making fame judgments was irrelevant to a judgment of its fame. Given this situation, subjects were advised to ignore memory for the earlier-read list when making fame judgments. An experiment by Neely and Payne (1983) showed that previously reading a name increased the probability of famous and nonfamous names later being called famous equally. We were interested to see whether instructions to ignore memory for having earlier read names would effectively eliminate those effects.

Can people successfully ignore memory for information presented earlier? That they have difficulty in doing so has been shown in a number of domains, such as belief perseverance (Ross & Lepper, 1980) and the effects on judgment of inadmissable evidence in court (Caretta & Moreland, 1983). In our

view, many effects of prior experience are unconscious in that they arise even when people cannot recollect the source of those effects. We did not expect people to be able to ignore effects on familiarity but thought that they might compensate for such effects by changing to a more stringent criterion or to a more analytic basis for fame judgments when faced with the possibility of confusion among sources of familiarity.

Method

Subjects and design. The subjects were 16 volunteers enrolled in an introductory psychology course.

The experiment had three phases. In Phase 1, subjects read a list of randomly intermixed famous and nonfamous names. In the second (baseline) phase, new famous and new nonfamous names were presented for fame judgments. In Phase 3, old names that were read in Phase 1 were mixed with new famous and new nonfamous names and presented for fame judgments. The fame of a name (famous vs. nonfamous) was manipulated within subjects during both Phase 2 and Phase 3. Prior presentation (old versus new) was also manipulated within subjects and factorially crossed with fame of a name in Phase 3.

Materials. We used a pool of 80 famous and 80 nonfamous names. These were the same names used in Experiment 1, with an additional 20 famous names added and 20 of the nonfamous names dropped. We used the same criteria to select additional famous names as was used for Experiment 1. That is, the famous names were meant to be ones that most people would recognize as famous but be unable to recall why the named person was famous.

We broke the names into four sets of 20 famous names and four sets of 20 nonfamous names to construct lists used in the three phases of the experiment. A list of 40 names, 20 famous and 20 nonfamous, was presented to be read in Phase 1. Each name in the list was presented only once. The list presented for fame judgments in Phase 2 consisted of 40 famous and 40 nonfamous names that did not overlap with those read in Phase 1. For the third phase, the 20 famous and 20 nonfamous names read in Phase 1 were mixed with 20 famous and 20 nonfamous names that had not been presented in either of the two earlier phases. These 80 names were presented for fame judgments. The names used in Phase 2 were divided into two blocks of 20 famous names and two blocks of 20 nonfamous names for constructing list formats. We constructed four formats by rotating blocks of famous and nonfamous names through lists used in the three phases. This was done to eliminate the possibility that any differences among conditions could result from differences among the names used to represent the conditions. The presentation order of names in each list was random, with the restriction that not more than 3 names of one type could be presented before the presentation of 1 name of each of the other types.

Procedure. Prior to Phase 2, the fame baseline, subjects were informed that none of the names that were to be presented for fame judgments had been read in the first phase. Before the third phase, subjects were informed that the names presented for fame judgments would now include names that had been read in the first phase. They were told that half of the names read earlier were famous and half were nonfamous, and that new famous and new nonfamous names would also be presented. Subjects were informed that this meant that recognition of a name as previously read provided no information about its fame, so they should ignore any memory for the earlier-read list. Other procedural details were the same as in Experiment 1.

Results and Discussion

The probabilities of calling a name famous during the baseline phase of the experiment are displayed in the first row of

Table 3
Probability of Judging a Name Famous

Test condition	Famous		Nonfamous	
	New	Old	New	Old
Phase 2	.66	—	.40	—
Phase 3	.63	.74	.23	.32

Table 3. We compared judgments during the baseline phase with those for new famous and new nonfamous names in the third phase. As in earlier experiments, we used signal detection analyses to examine the possibility that presenting old names and new names for fame judgments produced confusion among sources of familiarity, and that people reacted to that confusion by changing the basis for their fame judgments. We included only new names in these analyses because only new names appeared in the baseline phase of the experiment. Probabilities of calling a name famous were calculated on the 40 names presented in Phase 2 and the 20 names presented in Phase 3, the phase in which old and new names were mixed.

There was some indication that people reacted to confusion among sources of familiarity by using a higher criterion (β) in the third phase than in the baseline phase (1.47 and 1.11, respectively). This difference in criterion approached significance, $F(1, 15) = 3.73, p < .07$. There was strong evidence that people relied more heavily on an analytic basis for fame judgments when faced with confusion among sources of familiarity. Discrimination between famous and nonfamous names (d') was higher in the third phase than in the baseline phase (1.21 and 0.76, respectively), $F(1, 15) = 8.11$ ($MS_e = .202$).

The probabilities of calling names famous in the third phase of the experiment are presented in the second row of Table 3. Analyses of those data showed that famous names were more likely to be called famous than were nonfamous names (.69 and .28, respectively), $F(1, 15) = 141.20$ ($MS_e = .019$). Also, old names were more likely to be called famous (.53) than were new names (.43; $MS_e = .012$), $F(1, 15) = 12.18$. The interaction between prior presentation and the fame of a name did not approach significance ($F < 1$).

People were unable to ignore the effects on familiarity of reading a name when later making fame judgments. Reading a name increased the probabilities of calling famous and nonfamous names famous equally. However, people did partially compensate for confusion among sources of familiarity by using a more analytic basis for fame judgments when faced with the possibility of confusion among sources of familiarity (Phase 3) than when not faced with such confusion (Phase 2).

Recognizing a name as having been read in the earlier list could not be used to solve the problem of ignoring effects of reading a name on its familiarity. Conscious recollection that a name had been read earlier would only tell one that some of its familiarity came from that source. To accurately discount the familiarity of an old name, a person would have to answer the question "How familiar would this name seem if I had not just read it?" The problem is made even more difficult by the possi-

bility of interactions. Some names, because of factors such as their similarity to famous names or their unusual orthography, may gain more familiarity from a prior reading than do other names. To "correct" the familiarity of a name for its prior reading, these interactions would have to be taken into account. These, along with other difficulties for discounting irrelevant information (e.g., Jacoby & Kelley, 1987; Schul & Burnstein, 1985; Wyer & Budesheim, 1987), make people almost totally reliant on a change to a more analytic basis for judgments to avoid unconscious influences of memory.

General Discussion

Reading a name that one is told is nonfamous increases the probability of that name later being called famous. This effect of reading a name on its familiarity is clearly unconscious in that it does not rely on conscious recollection of the source of the name's familiarity. In Experiments 1 and 2, the unconscious nature of the effect was ensured by arranging the situation such that conscious recollection would dictate a response that was opposite to that produced by gains in familiarity. As well as making nonfamous names seem famous, unconscious influences of the past can serve to increase the accuracy of perception (e.g., Jacoby & Dallas, 1981), reduce the subjective loudness of a background noise (Jacoby, Allan, Collins, & Larwill, 1988), and reduce the judged difficulty for others of anagrams (Jacoby & Kelley, 1987). We (Jacoby & Kelley, 1987; Jacoby et al., 1989) have found it useful to think about these unconscious influences of the past versus conscious recollection in terms of Polanyi's (1958) distinction between tool and object. We first sketch our use of that distinction and then discuss the results of the current experiments in that broader context to illustrate factors that limit one's ability to avoid unconscious influences of the past. Although the discussion centers on familiarity as an unconscious influence, we think that the concerns discussed apply equally as well to other sorts of subjective experience that also serve as a basis for judgments in social situations.

Polanyi (1958) pointed out that when a hammer is used as a tool to pound a nail, one's focus is on pounding the nail and only subsidiarily on the hammer. However, the same hammer can be treated as an object of attention. Similarly, the memory representation of an event such as reading a word can be used as a tool to assist in the later perception and interpretation of that same word, or it can be treated as an object of attention in one's conscious recollection. When used as a tool, memory for a prior event is incorporated into an ongoing activity rather than being treated as an object for reflection. In both cases, it is memory for prior events that is important. However, treating memory as a tool as opposed to as an object involves separate acts that rely on different retrieval cues. By the tool–object distinction, familiarity stems from the use of memory as a tool to perceive and interpret later events. Specifying the source of familiarity requires a change in focus of attention from the task at hand to reflecting on the past. Even when the source could potentially be specified, people may fail to do so spontaneously.

The description of memory as a tool is similar to the stage-setting metaphor of Bransford, McCarrell, Franks, and Nitsch (1977). They suggested that memory serves the function of setting the stage for perception and interpretation of later events. A

similar idea has also been advanced by Trope (1986) to explain unconscious influences of context on person perception. The notion of memory as an object is similar to Johnson's (1983) description of "reflection." By proposing multiple bases for judgments, we follow the lead of many others (e.g., Atkinson & Juola, 1974; Glucksberg & McCloskey, 1981; Hasher & Griffin, 1978; Mandler, 1980; E. E. Smith, Shoben, & Rips, 1974; Zanna & Rempel, in press).

Others have accounted for unconscious influences of memory in terms of differences in memory representations or differences in memory systems (e.g., Cohen & Squire, 1980; Johnson, 1983; Tulving, 1983). Conscious recollection has been said to depend on retrieving the specific details of an experience, whereas unconscious influences reflect the priming of an abstract representation in semantic memory. Alternatively, conscious recollection has been said to rely on declarative memory, whereas unconscious influences of the past reflect procedural memory. The issues have been defined in such a broad way that it would probably be impossible to find critical evidence that would favor our view over these views held by others. However, there is a difference in emphasis. By our distinction between tool and object, we mean to emphasize the importance of differences in retrieval orientations along with that of differences in decision processes.

Attribution as a Separate Act: Measuring Spontaneous Recollection

It has been argued that heavy reliance on directly asking people to make causal attributions has led to an overestimate of the frequency of causal attributions in more natural contexts (e.g., E. R. Smith & Miller, 1983). Spontaneous causal attributions have most commonly been found to occur as an explanation of an unexpected event (e.g., Hastie, 1984; Wong & Weiner, 1981). Similarly, investigators of memory have probably relied too heavily on directly asking people to report on the past or to recognize an item as previously presented, and consequently have overestimated the frequency of conscious recollection in more natural contexts. Spontaneous conscious recollection, like other causal attributions, might most often be elicited by an unexpected event. Gestalt psychologists (e.g., Koffka, 1935, pp. 595–597) pointed out that people recognize a friend in a crowd of strangers and a stranger in a crowd of friends. That is, people do not experience a feeling of familiarity when they encounter a friend in a context in which he or she is usually encountered.

The experiments reported here examined factors that were likely to influence spontaneous recollection of source. Although people were not directly asked to report source, their fame judgments could be used to tell whether source had been spontaneously recollected. Comparisons of judgments in that condition with those in a condition in which people were directly asked to report source as well as make fame judgments showed that recollection of source is not always spontaneous. Comparisons of this sort are likely to be generally useful for specifying factors that give rise to spontaneous causal attributions. For example, a similar procedure could be used to determine when personality attributions are spontaneous. Among the factors that influence the likelihood of spontaneous recollection of source are the difficulty of recollecting source and the payoff for doing so. The

probability of spontaneous source monitoring varies across people and across situations that influence the opportunity for changing retrieval orientation along with the focus of attention.

The procedures in our experiments using a well-defined source are a step toward inventing procedures to study more complex and provocative problems that may also take the form of sleeper effects. One such example is unintentional plagiarism. As anyone who has written a report of empirical work knows, crediting the source of ideas can be controversial. Attempts at creativity seem to increase the probability of unintentional plagiarism. When attempting to be creative, one seldom starts by saying "I'm going to use so-and-so's idea," but rather attempts to take a fresh look at a problem. While thinking, one is probably unconsciously influenced by the ideas of others but apt to find attempts to credit the source of ideas a distraction. Crediting a source follows the use of ideas and sometimes seems almost impossible to do with confidence. Aggravating this difficulty, ideas are often not so well defined that they can be uniquely linked to any one source. What criteria are to be used to judge an idea as being sufficiently different from one proposed by others to justify calling the idea one's own? By these arguments, people attempt to excuse not only their own sins but also (more reluctantly) those of any who may have sinned against them when referencing a source.

Multiple Bases for Judgments

An important concern for observing unconscious influences of the past is differences in the bases that people use for judgments. Familiarity and other sorts of subjective experience serve as a nonanalytic basis for judgments. As such, they are open to unconscious influences of the past because those unconscious influences can easily be misattributed. The effects of prior presentation can be mistaken for a name's being famous, a statement being true, an object being liked, and so forth. In some domains, one has a more analytic basis for judgments. The fame of a name can be judged on the basis of one's ability to recall anything the named person did that would warrant fame. The truth of an argument can be judged on the basis of its internal consistency and its relation to other arguments and data. More analytic bases for judgments are less open to unconscious influences of the past. The form of a sleeper effect that is found depends on the basis that people use for judgments.

However, sometimes there is no good analytic basis for judgments to substitute for nonanalytic subjective experience. In such domains, people are particularly open to unconscious influences of the past. For example, unconscious influences of the past produce large effects when the truth of statements that convey trivia are judged (e.g., Bacon, 1979), when affective judgments about stimuli that are meaningless and originally neutral are made (e.g., Zajonc, 1980), and when decisions that seem totally arbitrary are required (Lewicki, 1985). People cannot escape these effects by shifting to a more analytic basis for judgments. Even identifying the past as the source of effects does not allow one to accurately correct judgments. One is faced with answering a question such as "How familiar would this name seem had I not just seen it?", a question that seems near impossible to answer with certainty. Social judgments may often be nonanalytic rather than analytic and so open to unconscious

influences. For example, if one doubts the "correctness" of his or her spontaneous behavior in a social situation, there is often no good set of rules that can be used as an analytic basis for judgments. Although open to unconscious influences of the past, subjective experience can serve as a more accurate basis for judgments than would the analytic basis provided by a poor theory (e.g., Jacoby & Kelley, 1987).

Specificity of Unconscious Influences

In our experiments, there was an arbitrary relation between a name and the source of its familiarity (the list in which it was read). Similarly, in most other experiments investigating the sleeper effect, the materials used have been such that there is no necessary relation between the content of a message and its source. However, source and content are sometimes more integral, so that the content or meaning of a message is not separable from surface characteristics such as its precise wording or who presented it. For example, people maintain relatively accurate memory for the speaker and the precise wording of a sentence when sentences are high in interpersonal content (e.g., Keenan, MacWhinney, & Mayhew, 1977).

When the content of a message and its source are integral, unconscious influences might be very situation specific. Even when a person is unable to report source or context, reinstating context might have large effects on performance. Increasing the similarity between the conditions of study and test could maximize the unconscious retrieval of misleading information without producing an accompanying increase in conscious recollection of the source of that information (cf. Kelley, Jacoby, & Hollingshead, 1988). An example of unintentional plagiarism can serve to illustrate this possibility. Many people have had the experience of presenting an idea to a colleague only to have the colleague thoroughly reject the idea. In a later conversation, however, the colleague reintroduces the earlier-rejected idea as an insight that he or she just had. The unconscious retrieval of the prior conversation required for the use of memory as a tool may rely on the reinstatement of relatively specific source cues. Nature may be so perverse as to make it likely that one will present a stolen idea as being his or her own to the very person from whom it was stolen. The cues offered by that person's appearance and the content of a current conversation may be similar to those present during the prior conversation and serve as excellent cues for unconscious retrieval of the idea and its use as a tool. This use of a prior experience as a tool, however, is not necessarily accompanied by awareness of the past and can be mistaken for a new insight.

More generally, reinstating the source or details of a prior event may be important for unconscious access to that memory for its use as a tool. Those effects may be largely independent of a person's ability to report the source or details. The implication for the sleeper effect is that reinstating some aspects of study context at the time of test may actually increase the magnitude of the sleeper effect. Similarly, other unconscious effects of the past might be more situation specific than is generally assumed.

By the tool–object distinction we mean to emphasize the possibility that unconscious influences of the past are situation specific in that they depend on reinstating the original context. This is a potentially important difference between our view and

views that account for unconscious influences in terms of differences between memory representations (e.g., Cohen & Squire, 1980; Tulving, 1983). For example, it might be claimed that unconscious influences of the past arise from the priming or activation of an abstract representation that is separate from memory for any particular prior experience. In this view, effects should be relatively context free and so should be observed across test situations that are very dissimilar from the situation that was responsible for priming. The term *priming* seems to be used in this way when describing effects on construct accessibility in social settings (e.g., Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979). The effects of familiarity observed in our experiments cannot have been produced by priming akin to an increase in construct accessibility. In our experiments, large effects were found for nonfamous names, and there was no representation of those nonfamous names in memory to be primed before their presentation in the experiments. Also, the effects are too long-lasting to be easily described as a result of priming (e.g., Jacoby & Brooks, 1984). Other effects that have been taken as evidence for the existence of some abstract representation or procedure that is separate from memory for particular prior experiences might also be better explained in terms of unconscious retrieval along with other differences in the use of memory at the time of test (e.g., Hintzman, 1986; Jacoby & Brooks, 1984; Kahneman & Miller, 1986).

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