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Attributions of Familiarity in Amnesia: Evidence From a Fame Judgment Task

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To evaluate the extent to which amnesic patients can attribute the source of familiarity to its correct source during a fame judgment task, we placed gains in familiarity in opposition to conscious recollection. In a first experiment, patients and controls were told specifically that nonfamous names presented just prior to a fame judgment task were not famous; in a second experiment they were told that nonfamous names were in fact famous. Although such instructions produced dramatically different results in the fame judgment performance of normal control subjects, minimal change in attribution of fame occurred for the amnesic subjects. It is concluded that the amnesic subjects were unable to attribute the familiarity of a previously presented name to its correct source because of their inability to recollect a name's prior presentation. Hence, it may be the nature of the memory query rather than the adequacy of a specific memory system that determines whether or not an amnesic patient can access information in memory.

For some time now, it has been apparent that amnesic patients use the ease with which an item is generated at retrieval as a cue to judge its status in memory. For instance, Warrington and Weiskrantz (1978) found that when amnesic patients were given cues at retrieval that facilitated the regeneration of a previously learned response, they tended to regard that response as correct and appropriate to the task. Cermak and Stiassny (1982) found that amnesic patients could recall as many previously studied words as could control subjects when those words were cued with their highest associate. However, amnesic patients could not recall the words when the cue was a weak associate even when that same cue had been present at input. This outcome runs somewhat counter to Tulving's notion of encoding specificity (Tulving & Thomson, 1973), which states that the strongest cue at retrieval ought to be the one presented at input regardless of extra-experimental strength of association. But, for amnesic subjects, only the strength of association between cue and response seems to determine recall status. It seems as if they responded to the fluency, or ease, with which the item is retrieved to indicate its appropriateness for recall.

More recently, it has been demonstrated that amnesic patients use the fluency with which information is processed for a variety of other judgments that are not necessarily memory related. For instance, Johnson, Kim, and Risse (1985) demonstrated that the likeability of unknown melodies is influenced by previous exposure, even when patients have no explicit memory for these melodies. Squire and McKee (1992) found that amnesic patients attributed fame to previously presented names even though they failed to recognize that the names had been presented. In fact, although not significant, the effect of prior presentation was numerically larger for amnesic subjects than it was for control subjects. Squire and McKee attributed this to the possibility that control subjects occasionally could remember that a name had been presented on the prior list and, thus, could have inhibited a fame judgment. Amnesic patients would not have been able to exercise such control because of their impaired memory for the previously presented names.

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To date, no study has directly examined amnesics' control over these familiarity-based attributions. This seems important because the effects of familiarity appear to be largely indiscriminate and can benefit or harm performance depending on the specific task demands. For instance, in Cermak and Stiassny's (1982) study, amnesic patients not only endorsed target items that were generated in response to strong cues but also endorsed other strong associates that had not been presented on the study list. In fact, their false-alarm rate was significantly higher than that of control patients. Likewise, in Squire and McKee's (1992) fame judgment task, both famous and nonfamous names were more frequently judged as being famous when they had previously been presented.

To examine directly the extent to which amnesic patients can use conscious control when making attributions about previously presented stimuli, we placed gains in familiarity in opposition to conscious recollection in the fame judgment task originally developed by Jacoby, Woloshyn, and Kelley (1989). In the first phase of the experiment, patients were presented with a list of nonfamous names and told explicitly that all the names were, in fact, nonfamous. Thus, the ability to recollect these specific names later would permit their rejection on a fame judgment task. However, if the names were forgotten, as one might expect in amnesia, then it would be possible that the familiarity generated by their prior presentation would lead to the patient's calling the name famous. We had previously proposed that even though amnesic patients show a deficit in conscious recollection, they do not show a loss in fluency produced by a prior presentation (Cermak & Verfaellie, 1992). Thus, we predicted that amnesic patients would be less able than control subjects to counteract the effects of familiarity generated by reading a name. In other words, we expected amnesic patients to demonstrate a larger than normal induced fame effect under conditions in which they were explicitly told the names were not famous. This, in turn, would indicate that they could not normally attribute familiarity to its correct source.

Experiment 1

Method

Subjects. Two groups of subjects participated in this experiment. The first group consisted of 13 amnesic patients. Seven of these patients were alcoholic Korsakoff's patients who were residing in various chronic care facilities in the Boston metropolitan area. All had histories of chronic alcoholism, were unable to recall day-to-day events, and had extensive retrograde amnesia. The other 6 amnesic subjects included 2 anoxic patients, 1 postencephalitic patient, 1 head-injury patient, 1 patient with a severe seizure disorder, and 1 patient with bilateral thalamic lesions. These latter patients were all living at home and displayed the same clinically amnesic profiles as the Korsakoff's patients. The mean age of the amnesic group was 57.5 years, with an average of 13.8 years of education. On the Wechsler Adult Intelligence Scale—Revised (WAIS–R; Wechsler, 1981), the average Verbal IQ (VIQ) score for this group was 101.3. On the Wechsler Memory Scale—Revised (WMS–R; Wechsler, 1987), the average attention score was 104.3, the General Memory score was 74.4, and the Delayed Memory score was 58.8.

The control group consisted of 11 male chronic alcoholics recruited from private homes or local public halfway houses. All had abstained from alcohol for at least 6 months prior to participating in this study. Their average age was 56.3 years, with an average of 13.2 years of education. The group's mean WAIS–R VIQ score was 111.3; the mean WMS–R attention score was 106, the mean General Memory score was 110.7, and the mean Delayed Memory score was 108.8.

Task. The subjects read a list of 40 names from the telephone book, which were presented on a computer screen one at a time. They were then told that, as they may have expected, the names they had just read were not famous but were taken from a phone book. Following this, they were asked to perform a second task, in which they were again shown names one at a time but were asked to judge whether or not the name was that of a famous person. They made this judgment on 120 names. Finally, they were shown 20 more names and asked to recognize which of them had been presented as part of the original pronunciation list.

Materials. A set of famous and nonfamous names, including first, last, and occasionally middle names, was used as stimuli for this study. A list of 60 famous names was selected from a pool of approximately 250 on the basis of a preliminary study conducted on 20 normal men of about the same age as the Korsakoff's patients and the alcoholic control subjects (mean age = 67.4, range = 45–96). Names recognized as famous by 50%–80% of these men were selected for use in the experiment. The rationale for this criterion was that names should seem familiar to most people but not be so obviously famous that all patients would know exactly who the person was. The ultimate goal was to find names that would be judged famous on the basis of fluency rather than explicit recollection of what the person did to become famous. The mean percentage recognition for famous names used in this experiment was 67%.

The list of names that met the 50%–80% recognition criterion was further edited to eliminate names of people who had only recently attained fame, so as not to put amnesic patients at a disadvantage in the fame judgment task. Famous names used in this experiment came from time periods ranging from the medieval era to the early 1970s. Thus, almost

all names used in the study predated the onset of amnesia for memory-disordered subjects. Examples of famous names used are Clifton Fadiman, Giovanni Boccaccio, and Benjamin Disraeli.

A set of 70 nonfamous names selected from the Boston telephone book were chosen to roughly match the famous names on the basis of gender, nationality, and length. Distinctive nonfamous names were preferentially chosen because they seemed especially likely to be misjudged as famous. Examples of the nonfamous names used are Gottlieb Moltenbrey, Vladimir Weingarten, and Carter Heywood.

The presentation order of names for both study and test lists was randomized with the restriction that not more than four names of one type (famous vs. nonfamous or old vs. new) could be presented before a name of another type. Two versions of the task were prepared in such a way that nonfamous names used in one study list were used as fillers in the other test list and vice versa. The presentation of study lists was counterbalanced across subjects. All subjects saw all names in the fame judgment and recognition phases.

Procedure. The names were presented on a Macintosh IIcx computer monitor. In the first phase of the experiment, subjects read a list of 40 nonfamous names aloud. Names were presented for 2.2 s with a 1.8-s blank interval after the presentation of each name. Subjects were told that the experimenter was interested in studying their ability to pronounce people's names and that their pronunciation was being recorded. A tape recorder was set up next to the computer to make these instructions credible.

After reading the names aloud in the study phase, subjects were told that all the names they had just read had been taken from a telephone book and were nonfamous. Subjects were instructed to remember this information about the names they had read because it would help them in the next phase of the experiment, which was a fame judgment task. There was approximately a 1-min delay between the first and second phases while the experimenter set up the fame judgment task.

In the fame judgment phase of the experiment, 30 of the nonfamous names from the study phase were mixed with 30 new nonfamous names and 60 famous names. Subjects made fame judgments by pressing a key on the right for "famous" and a key on the left for "nonfamous." Subjects were instructed to use the index finger of their dominant hand for all responses. Names remained on the screen until a subject responded by pressing a key. After a response, the screen remained blank for 1.5 s before the next name appeared. Each judgment and its latency was recorded by computer.

Upon completion of all 120 names in the fame judgment task, subjects were told that the fame judgment task was over and that they must now decide if names appearing on the screen had been presented previously in the first phase of the experiment, when they had read the names aloud. For this recognition phase, the remaining 10 nonfamous names were mixed with 10 new nonfamous names and presented one at a time on the screen. If subjects did remember a name from the study phase, they were told to press the key on the right, which had been relabeled "old." If they had not seen the name before in the experiment, they were told to press the key on the left, now labeled "new." As in the fame judgment phase, names remained on the screen until a response was made, and the screen remained blank for 1.5 s after each response, before the next name appeared. Each response and its latency was recorded by computer.

Table 1
Percentage of Names Identified as Famous and Percentage of Names Identified as Old in Experiment 1

Subject group	% famous			% old	
	Famous	Old nonfam.	New nonfam.	Old	New
Alcoholic	53.2	9.4	8.8	77.3	12.7
Amnesic	36.7	29.2	16.9	49.2	32.3

Note. nonfam. = nonfamous.

Results

To examine overall accuracy of fame judgments, we first compared performance on famous and new nonfamous names (see Table 1). An analysis of variance (ANOVA) with group (alcoholic, amnesic) as the between-subjects variable and fame (old famous, new nonfamous) as the within-subjects variable revealed a significant main effect of fame, indicating that both alcoholic and amnesic subjects identified old famous names as famous more frequently than they did new nonfamous names, $F(1, 22) = 79.2, p < .01$. There was also a Group × Fame interaction, $F(1, 22) = 11.7$, $p < .01$, indicating that alcoholic subjects were more accurate than amnesic subjects in making fame judgments. Specifically, alcoholic subjects were more likely than amnesic subjects to identify a famous name as famous, $F(1, 35) = 5.1, p < .05$. The difference in performance between the two groups on new nonfamous names failed to reach significance. A signal detection analysis performed on the same data confirmed that alcoholic subjects were more sensitive to the actual fame status of names ($d' = 1.51$ for alcoholic subjects, $d' = .87$ for amnesic subjects), $F(1, 22) = 4.3, p < .05$.[1] There were no differences in response

[1] For hit rates of 1 or false-alarm rates of 0, the signal detection parameters are undefined because the corresponding z scores are infinite. We therefore corrected all hit and false-alarm rates by adding 0.5 to each frequency and dividing by $N + 1$, where N is the number of old or new trials.

bias between the two groups ($\beta = 4.25$ for alcoholic subjects, $\beta = 4.63$ for amnesic subjects).

To examine whether subjects' having read names earlier induced a false fame effect, we compared fame judgment data for new nonfamous and old nonfamous names. An ANOVA with group as the between-subjects variable and exposure (new nonfamous vs. old nonfamous) as the within-subjects variable revealed a main effect of exposure, $F(1, 22) = 8.7, p < .01$, which indicated that old nonfamous names were more likely to be judged famous than were new nonfamous names. There was also a significant interaction between group and exposure, $F(1, 22) = 7.1, p < .05$, indicating that the difference in performance between amnesic and control subjects was much more pronounced for old nonfamous names, $F(1, 26) = 7.5, p < .05$, than for new nonfamous names, $F(1, 26) = 1.3$, *ns*. Thus, the amnesic subjects showed a larger induced fame effect. In fact, whereas amnesic subjects endorsed more old than new nonfamous names, $F(1, 22) = 17.2, p < .01$, the fame judgments of control subjects were not affected by previous exposure.

Recognition data (Table 1) were analyzed by means of an ANOVA with group (alcoholic vs. amnesic subjects) as the between-subjects variable and exposure (target vs. distractor) as the within-subjects variable. A main effect of exposure, $F(1, 22) = 48.5, p < .01$, indicated that targets were identified as old more often than distractors. A Group × Exposure interaction, $F(1, 22) = 16.6, p < .01$, indicated that alcoholic subjects were more accurate than amnesic subjects in recognition judgments. Simple effects revealed that alcoholic subjects identified more targets, $F(1, 41) = 8.4$, $p < .01$, and fewer distractors, $F(1, 41) = 4.1, p < .05$, as old than did amnesic subjects. Analysis of these same data using signal detection parameters revealed higher sensitivity for the alcoholic subjects ($d' = 2.04$) than for the amnesic subjects ($d' = 0.47$), $F(1, 22) = 17.7$, $p < .01$, but no differences in response bias ($\beta = 1.87$ for alcoholic subjects, $\beta = 1.01$ for amnesic subjects).

Group differences in susceptibility to the induced fame effect may be related to subjects' accuracy at making fame judgments in general. Alternatively, they might be related to subjects' recognition memory accuracy. To examine whether either of these factors contributed to the magnitude of the false fame effect, we performed an analysis of covariance (ANCOVA) with fame judgment accuracy (d') and recognition memory accuracy (d') as covariates. For each subject, the dependent measure was an induced fame score, computed as the difference in performance between old and new nonfamous names. Only recognition accuracy tended to predict performance, $F(1, 20) = 4.1, p < .06$.

Discussion

Amnesic patients were more likely to identify a previously read name as famous than newly introduced names, even when explicitly told that the names they had previously read were not famous. Alcoholic control subjects, in contrast, were no more likely to identify a nonfamous name as famous following its presentation on a study list than they would have had it not been presented. The control subjects seemed able to attribute a name's apparent familiarity to its correct source. Having just been told that the names were not famous, they could attribute the source of their familiarity to the fact that the name had just been presented. Amnesic patients appeared to be unable to do this.

These findings expand the results of Squire and McKee (1992), who found that amnesic patients identified previously presented nonfamous names as famous as often as, if not more often than, control subjects when no reference to the previously presented names was made prior to the fame judgment task. To account for the fact that the induced fame effect was numerically somewhat larger in the amnesic subjects, Squire and McKee introduced the possibility that amnesic patients have less control than normal persons over their attribution of familiarity. This hypothesis was borne out in the present experiment in that amnesic subjects attributed the fluency with which a name was processed to the probable fame of the individual rather than to the possibility that they had just read it, even when they had been told the names were nonfamous.

The induced fame effect observed in the amnesic patients can provide an index of memory without awareness in the present experiment. This is because conscious recollection served to produce effects opposite to those produced by gains in familiarity. Amnesic patients produced many false fame errors and, as expected, their recognition memory was quite poor. Alcoholic control subjects, on the other hand, produced few false fame errors and their recognition memory, although not perfect, was quite good. To obtain an estimate of the unconscious effects of memory unopposed by recollection, we estimated, for each group, the probability of identifying nonrecognized names as famous. In other words, we considered that gains in familiarity should be evident only for names that were not recognized. Consequently, we divided the

probability of identifying a name as famous by the likelihood that it would not be recognized as being old. We found that the difference in fame judgments for old and new nonfamous names that were not recognized was quite similar across groups (57.5% vs. 24.9% for amnesic subjects, 41.4% vs. 10% for alcoholic control subjects), indicating that both groups were equally susceptible to gains in familiarity. This meant, therefore, that it was only the ability to attribute this familiarity to its correct source that distinguished the amnesic patients from the control subjects. Indeed, when differences in recognition memory were used as a covariate in the analysis of induced fame, group differences were no longer observed.

This finding that amnesic patients were unable to oppose gains in familiarity accrued by the earlier reading of a name with conscious recollection of the item presentation parallels the effect Jacoby et al. (1989) obtained when normal subjects were tested under conditions of divided attention. However, the subjects in Jacoby et al.'s study protected themselves against fame errors by endorsing fewer items overall as being famous. That is, their knowledge that their memory was unreliable led them to be less willing to identify any item as famous. No similar effect was obtained with our amnesic patients. In fact, the amnesic subjects' criterion for judging names famous was no different from that of the alcoholic controls, suggesting that they were unable to use any form of meta-memory to control their performance.

Despite our efforts not to favor control subjects on fame judgment of actually famous names, we found that they were more sensitive to the actual fame status of names than were the amnesic patients. This was probably because all the amnesic patients had extensive retrograde amnesias. Ideally, all fame judgments could be made solely from some form of semantic or generic memory, but it is likely that normal persons use episodic memory for this as well (Cermak, 1984). At any rate, it is clear that the normal individuals' availability of information about historical figures gave them an advantage on this aspect of the task. Of importance for our present discussion, however, was the finding that fame judgment accuracy did not predict the magnitude of fame errors, suggesting that the amnesic subjects' inability to oppose familiarity was unaffected by their overall judgment accuracy.

In the next experiment, we further explored the boundary conditions of amnesic subjects' ability to attribute familiarity to its correct source. Whereas we had observed here that the amnesic patients were unable to use recollection to oppose familiarity, we did not know whether they could use conscious control to enhance the effects of familiarity. Therefore, we examined this possibility in the context of a task in which the patients were told that names presented on a pronunciation task were, in fact, famous but had been taken from obscure, little publicized, fields. Thus, the patients were encouraged to respond positively to previously presented names when they appeared on the fame judgment task. In this condition, recollection of a name and familiarity generated by its prior reading both acted to enhance the likelihood that a name would be identified as famous, thus providing an index of the combined effects of familiarity and recollection. We anticipated that after having read names, alcoholic control subjects would be much more likely to identify them as famous. For amnesic patients as well, we expected old nonfamous names to be identified as famous more often than new nonfamous names. The magnitude of this induced fame effect, however, depends on subjects' ability to use recollection. If amnesic persons are able to exert any control over the attribution of familiarity, then they should show a larger induced fame effect in Experiment 2 than in Experiment 1. Alternatively, if they are unable to use control, irrespective of the direction in which it operates, then the magnitude of the induced fame effect should be similar in both experiments.

Experiment 2

Method

Subjects. The same subject groups who participated in Experiment 1 participated in Experiment 2. The amnesic group consisted of 7 male Korsakoff's patients and 6 amnesic patients of varying etiologies, all of whom had participated in Experiment 1. The control group consisted of 11 subjects with a history of chronic alcohol abuse, 4 of whom had participated in Experiment 1. The average age of this group was 57.9 years, with 13.2 years of education. The mean WAIS–R VIQ score for this group was 110.9, the mean WMS–R attention score was 102.9, the mean General Memory score was 109.7, and the mean Delayed Memory score was 107.5. For all subjects, a minimum of 6 months had elapsed between participation in the two experiments.

Materials. As in Experiment 1, a list of 60 famous names was selected from a pool of approximately 250 on the basis of a preliminary study conducted on 20 normal men of about the same age as the Korsakoff's and alcoholic subjects (mean age, 66.8 years; range, 48–78 years). The mean fame judgment accuracy for famous names used in Experiment 2 was, by design, 67%. A new set of nonfamous names was selected in the same manner as for Experiment 1.

Procedure. The procedure for Experiment 2 was identical to that of Experiment 1 except for the information given to subjects after the study phase. After reading the 40 nonfamous names aloud in the study phase, subjects in Experiment 2 were told that all the names they had just read had been taken from a recent edition of *Who's Who* and that they belonged to moderately famous people.

Results

To examine the overall accuracy of fame judgments, we again initially compared performance (Table 2) on famous and new nonfamous names. An ANOVA with group (alcoholic vs. amnesic) as the between-subjects variable and fame (old famous vs. new nonfamous) as the within-subjects variable revealed a significant main effect of fame, indicating that both alcoholic and amnesic subjects identified old famous names as famous more frequently than they did new nonfamous names, $F(1, 22) = 121.3$, $p < .01$. There was also a Group × Fame interaction, $F(1, 22) = 17.9$, $p < .01$, indicating that alcoholic subjects were more accurate than amnesic subjects in making fame judgments. They were more likely than amnesic subjects to identify a famous name as famous, $F(1, 39) = 9.6$, $p < .01$, and they also tended to identify nonfamous names as famous less frequently than did the amnesic subjects, $F(1, 39) = 2.99$, $p < .10$. A signal detection analysis performed on the same data confirmed that alcoholic subjects were more sensitive to the actual fame status of names ($d' = 2.19$) than were amnesic subjects ($d' = 0.99$), $F(1, 22) = 13.4$, $p < .01$. There were no differences in response bias between the two groups ($\beta = 2.79$ for alcoholic subjects, $\beta = 2.70$ for amnesic subjects).

To examine whether having read names earlier induced a fame effect, we compared fame judgment data for new and old nonfamous names. An ANOVA with group as the between-subjects variable and exposure (new vs. old nonfamous) as the within-subjects variable revealed a main effect of exposure, $F(1, 22) = 86.0$, $p < .01$, indicating that for both groups, old nonfamous names were more likely to be judged famous than new nonfamous names. A significant interaction between group and exposure, $F(1, 22) = 22.3$, $p < .01$, was also obtained. Testing of simple effects revealed that alcoholic subjects were more likely than amnesic subjects to identify old nonfamous names as famous, $F(1, 36) = 10.9$, $p < .01$. Although amnesic subjects identified new nonfamous names as famous somewhat more frequently than did alcoholic controls, this difference was not significant.

Table 2
Percentage of Names Identified as Famous and Percentage of Names Identified as Old in Experiment 2

Subject group	% famous			% old	
	Famous	Old nonfam.	New nonfam.	Old	New
Alcoholic	77.2	70.3	10.3	78.2	5.5
Amnesic	53.3	43.1	23.6	47.7	25.4

Note. nonfam. = nonfamous.

Recognition data (Table 2) were analyzed by means of an ANOVA with group (alcoholic vs. amnesic) as the between-subjects variable and exposure (target vs. distractor) as the within-subjects variable. A main effect of exposure, $F(1, 22) = 101.6$, $p < .01$, indicated that targets were identified as old more often than distractors. A Group × Exposure interaction, $F(1, 22) = 28.6$, $p < .01$, indicated that alcoholic subjects were more accurate than amnesic subjects in recognition judgments. Simple effects revealed that alcoholic subjects identified more targets, $F(1, 41) = 15.4$, $p < .01$, and fewer distractors, $F(1, 41) = 6.6$, $p < .05$, as old than amnesic subjects did. A signal detection analysis of these same data revealed that alcoholic subjects were more sensitive to the actual status of names ($d' = 2.26$) than were amnesic subjects ($d' = .67$), $F(1, 22) = 24.98$, $p < .01$. Also, alcoholic subjects tended to be more conservative in their recognition judgments than amnesic subjects ($\beta = 2.58$ for alcoholic subjects, $\beta = 1.52$ for amnesic subjects), $F(1, 22) = 4.06$, $p < .10$.

As in Experiment 1, we examined whether differences in susceptibility to the induced fame effect were related to subjects' accuracy at making fame and recognition judgments. An ANCOVA was performed on the induced fame scores (old nonfamous vs. new nonfamous) with group as the between-subjects factor and each subject's fame judgment accuracy (d') and recognition accuracy (d') as covariates. Only recognition accuracy was an accurate predictor of performance, $F(1, 21) = 4.49$, $p < .05$.

Finally, because Experiments 1 and 2 were comparable with the exception of the instructions given to subjects, it was possible to compare the results of both experiments directly. First, to compare overall fame judgments across experiments, we performed an ANOVA with experiment and group as the between-subjects variables and fame (famous vs. new nonfamous) as the within-subjects variable. In addition to the effects obtained in each of the experiments separately,

a significant main effect of experiment was obtained, $F(1, 44) = 7.43$, $p < .01$, as well as a significant Experiment × Fame interaction, $F(1, 44) = 8.17$, $p < .01$. These effects reflected the fact that subjects were more likely to endorse famous names as being famous in Experiment 2 than in Experiment 1. No similar effect was obtained for nonfamous names.

Second, to compare the effect of previous exposure to names across experiments, we performed an ANOVA with experiment and group as the between-subjects variables and exposure (new nonfamous vs. old nonfamous) as the within-subjects variable. Results of this analysis revealed a main effect of experiment, $F(1, 44) = 17.6$, $p < .01$, indicating that more nonfamous names were identified as famous in Experiment 2 than in Experiment 1. This effect was modified by a Group × Experiment interaction, $F(1, 44) = 4.51$, $p < .05$, an Experiment × Exposure interaction, $F(1, 44) = 47.85$, $p < .01$, and a Group × Experiment × Exposure interaction, $F(1, 44) = 29.4$, $p < .01$. These effects revealed that, across experiments, amnesic patients identified old nonfamous names as famous more frequently than new nonfamous names. Although this effect was somewhat larger in Experiment 2 than in Experiment 1, the difference was not significant. Alcoholic control subjects also endorsed more old nonfamous names than new nonfamous names in Experiment 2, but in Experiment 1 they were equally likely to identify old and new nonfamous names as famous.

Discussion

In this experiment, both amnesic patients and control subjects identified previously presented nonfamous names as famous more frequently than they did new nonfamous names. However, the induced fame effect was much larger for the control subjects than for the amnesic subjects. Having been told that all the names they had just seen were in fact famous, control subjects were able to endorse names as famous on the basis of their conscious recollection of these names. This interpretation is supported by the fact that their recognition memory for previously presented names, which is thought to be based at least in part on conscious recollection (Verfaellie & Treadwell, 1993), was indeed quite good. When presented with a previously presented name, control subjects were able to attribute the familiarity the name engendered to its previous presentation, and this in turn, in the context of the present task instructions, provided a basis for judging a name as being famous. Amnesic patients, in contrast, again appeared unable to judge the source of a name's familiarity. As suggested by their poor recognition memory, they were unable to determine whether or not a name had been presented previously, and hence, they could not use this as an additional basis for fame judgments.

In fact, the induced fame effect demonstrated by the amnesic subjects was not reliably different across the two experiments, suggesting that they were unable to use the task instructions to modify their fame judgments. Their performance in a condition in which familiarity and conscious recollection produced effects in the same direction (Experiment 2) was comparable to that in a condition in which the effects of conscious recollection and familiarity were opposed to one another (Experiment 1). Although caution has to be used in accepting the null hypothesis as evidence of the amnesic subjects' exclusive use of familiarity, this finding does suggest that their performance was mediated primarily by a feeling of familiarity, irrespective of whether recollection should have been used to enhance or to oppose the effects of familiarity. Alcoholic control subjects, on the other hand, seemed able to use recollection to offset a feeling of familiarity because they demonstrated dramatic differences in performance depending on the direction in which recollection affected fame judgment.

In addition to a differential effect of fame attribution, the two experiments reported here also differed in subjects' overall likelihood of judging a name famous, with both groups more willing to judge names as being famous in Experiment 2 than in Experiment 1. Because different names were used in the two experiments, this might reflect the fact that names in Experiment 2 were simply more well known to subjects. This is unlikely, however, given that a group of normal subjects on whom these names were normed scored equivalently on both sets of names. More interesting, this finding raises the possibility that fame judgments might be influenced by the task instructions. Because the instructions in Experiment 2 were such that a feeling of familiarity might generally be used as an indicant of fame, even for previously presented nonfamous names, subjects might have relaxed their fame judgment criterion and endorsed names even if they could not explicitly recollect why they were famous. Note that this shift in decision criterion would not affect new nonfamous names because these did not engender a sense of familiarity. The finding that task instructions had a similar effect on the overall fame judgments of

amnesic patients and control subjects is important because it suggests that the amnesic patients' inability to change their fame attribution of previously presented nonfamous names was not due to a general inability to follow instructions. When the instructions promoted familiarity-based decisions, amnesic subjects performed normally. However, when the instructions encouraged the use of recollection-based decisions, amnesic subjects were impaired.

Using this same fame judgment paradigm without oppositional instructions, Squire and McKee (1992) found that amnesic subjects were somewhat more likely than control subjects to attribute fame to previously presented names, even when no instructions as to the nature of the names presented on the study list were provided at all. Squire and McKee hypothesized that this outcome may have been due to the level of control normal subjects can exert during the fame judgment task over the feeling of familiarity produced by the initial presentation of names. The present set of experiments confirmed this hypothesis with Jacoby et al.'s (1989) oppositional task approach. This confirmation points to the importance of applying an oppositional approach when assessing amnesic individuals' implicit performance on other tasks as well. Before accepting the premise that normal or above normal performance by amnesic subjects is qualitatively similar to that of control subjects, it is important to oppose fluency and recollection to assess the contribution of each to overall performance. Our results, combined with those of Squire and McKee (1992), suggest that normal performance may be obtained only when control through recollection is not a factor. Under conditions in which no instructions as to the relevance of previously presented items are given, as in most implicit tasks, amnesic subjects may perform normally because only the fluency of an item, or the effects of that fluency on subsequent performance, is being tested. However, as soon as the instructions necessitate reflection about an item's significance or status in memory, the performance of amnesic subjects becomes impaired. Rather than suggesting that amnesic individuals' familiarity with an item is being mediated by a separate memory system, such as implicit memory, we emphasize that it is the nature of the memory query that defines whether or not they can access information in memory.

Finally, because we have conceptualized the amnesic subjects' impairments in the present task as an inability to attribute the source of a name's familiarity, it is important to consider the current findings in light of amnesic subjects' performance on other source monitoring tasks. Source memory deficits have been observed in amnesic patients and have sometimes (e.g., Schacter, Harbluk, & McLachlan, 1984; Shimamura & Squire, 1987), but not always (Shimamura & Squire, 1991), been linked to frontal dysfunction. In all of these tasks, patients were asked to indicate directly the source from which a fact or piece of information was learned. In the present task, in contrast, we examined how well patients could spontaneously monitor the source of information. Rather than asking them about the source of information directly, we examined how well they could use this knowledge in the context of an unrelated task. The finding in the present study that all amnesic subjects (Korsakoff's patients as well as subjects with other etiologies) were impaired in using the source of a name's familiarity as a basis for fame judgment has two important implications. First, it suggests that source monitoring deficits in amnesia can be demonstrated in the context of indirect as well as direct tests of source information. Second, it appears that these deficits may not be restricted solely to patients with frontal dysfunction. We have hypothesized here that these source monitoring deficits reflect the inability to consciously recollect the episode in which information was presented. However, as Johnson, Hashtroudi, and Lindsay (in press) suggested, this in and of itself may be the product of a variety of processes, drawing on different aspects of activated information. For instance, differences in perceptual records, semantic knowledge, and contextual and affective information characteristic of memories from different sources may all have to be evaluated to make decisions about source. However, their relative importance, as well as the criteria used to make these decisions, may vary considerably across different monitoring situations. Delineating the contribution of these various processes to the performance of amnesic individuals on both direct and indirect monitoring tasks remains an important challenge for future studies.

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1994 APA Convention "Call for Programs"

The "Call for Programs" for the 1994 APA annual convention appears in the September issue of the *APA Monitor.* The 1994 convention will be held in Los Angeles, California, from August 12 through August 16. The deadline for submission of program and presentation proposals is December 3, 1993. Additional copies of the "Call" are available from the APA Convention Office, effective in September. As a reminder, agreement to participate in the APA convention is now presumed to convey permission for the presentation to be audiotaped if selected for taping. Any speaker or participant who does not wish his or her presentation to be audiotaped must notify the person submitting the program either at the time the invitation is extended or before the December 3 deadline for proposal submission.