

Social Memory in Everyday Life: Recall of Self-Events and Other-Events

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A self- and other-diary method was used to investigate the factors affecting memory for different aspects of real-world events. Ss kept a diary of unique events that happened to them during the course of an academic quarter and kept a 2nd diary of unique events that had happened to a close relative or acquaintance. At the end of the quarter, Ss provided both memory and date estimates for all events. When each diary entry was made, Ss provided ratings of the event's memorability, pleasantness, and person typicality. The impact of (a) these prerating factors, (b) the type of diary (self or other), and (c) the gender of the diary keeper on both memory for event content and memory for temporal aspects of the event was assessed. Implications for real-world memory and dating judgments and implications for the principles of social memory that have emerged from laboratory research in social cognition are discussed.

The study of memory is one of the core features of research in social cognition, and in recent years the range of memory issues studied by social cognition researchers has become more diverse. The four issues that are of interest in this article reflect both the centrality of memory to social cognition and the diversity of the memory-related questions that are addressed in the area. The first issue addressed in this article is a classic problem in social cognition: the effect of expectancies on information recall. The second issue is also a classic problem: the effect of the emotional tone of an event on recall for that event. The third issue is relatively new to social cognition: the temporal coding of information in memory and how those codes are used in temporal judgment. The final issue addressed in this article is of general concern to the area: the possible similarities and differences between self-memory and other-memory (i.e., memory of others).

The methodology that allows us to simultaneously investigate these diverse issues comes from recent work in real-world

cognitive psychology, an area devoted to the investigation of memory and cognition in naturalistic contexts (e.g., see G. Cohen, 1989; Gruneberg, Morris, & Sykes, 1988; Neisser, 1982; Neisser & Winograd, 1988; Rubin, 1986). We used a variation of the techniques developed by these researchers. For each of two targets, the self and a close friend or relative, subjects were asked to record one unique event daily in a diary. When recording the event, subjects also provided several different ratings (person typicality, pleasantness, and memorability) for the event. These events were recorded throughout the academic quarter (10 weeks). At the end of the academic quarter, subjects were reminded of the events and were asked to make two key judgments about each: (a) how well they remembered the event, and (b) the date on which the event occurred.

The person typicality ratings allow exploration of the effects of expectancies on recall. The pleasantness ratings allow exploration of the effects of an event's affective tone on recall. In conjunction with the memory data, the dating judgments allow exploration of temporal codes that may underlie the dating judgments. The two diaries (self and other) allow exploration of self-other differences in memory and information processing.

Self-Event Memory and Other-Event Memory

The direct comparison of the characteristics of self-memory to other-memory is particularly important given the wide divergence in how the self is viewed. Researchers from the social cognitive perspective (e.g., Markus & Sentis, 1982; Rogers, Kuiper, & Kirker, 1977; Wyer & Srull, 1989, chap. 13) view self-memory and self-judgment as fundamentally similar to other-memory and other-judgment (for recent reviews, see Greenwald & Pratkanis, 1984; Kihlstrom & Cantor, 1984; Kihlstrom et al., 1988).

One implication of this social cognitive perspective on the self is that there should be some fundamental similarities in the

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way that information about others and information about the self are stored and recalled. For example, experiments that directly compare self-memory with other-memory should find that both are similarly affected by the same manipulated factors. This reasoning does not automatically imply an absence of differences between self-memory and other-memory, but if these differences overtly reflect the common cognitive processes operating at storage and retrieval, then the differences that do exist between self-memory and other-memory should be quantitative rather than qualitative.

However, not all theorists (e.g., Bem, 1972; Gergen, 1982) agree with the thesis that self-processing is fundamentally similar to processing information about others. This notion is supported by evidence suggesting that people are much more likely to think in terms of categories about other people than about themselves (e.g., the fundamental attributional error—see Ross, 1977) and that self-judgments tend to be fairly unstable relative to judgments about others (Levine, Wyer, & Schwarz, 1987; Salancik, 1974). Hence, theorists who disagree with the social cognitive perspective on the self might expect to find qualitative differences in the impact of variables on self-event memory and other-event memory (but there is a possible middle ground—see Higgins, 1989; Higgins, Van Hook & Dorfman, 1988).

The dual-diary method used in this study allows exploration of the possible interactions between the self-other variable and the other variables of interest. The sections that follow discuss in more detail those variables and possible self-other differences that may emerge on those variables.

Consistency of Events With Prior Expectancy (Person Typicality)

Researchers in social cognition have been intensely interested in the impact of expectancies (such as a personality impression of a person) on recall for a person's characteristics and behaviors. The data generally indicate that facts either consistent with or inconsistent with expectancies about a person are better recalled than facts that are expectancy neutral (Hastie, 1980). Furthermore, expectancy-inconsistent information is often better recalled than expectancy-consistent information (e.g., see Bargh & Thein, 1985; Srull, Lichtenstein, & Rothbart, 1985).

In this experiment, the person-typicality ratings collected at event recording allowed us to explore these expectancy effects. A straightforward prediction based on the results of the prior laboratory research would be that both person-typical and person-atypical behaviors will be recalled better than neutral behaviors and that atypical behaviors will be better recalled than typical behaviors.

Note, however, that such data would not provide a simple replication of past research. Despite the apparent robustness of the laboratory findings, these memory consistency-inconsistency effects occasionally have been criticized. In particular, critics have claimed that the inconsistency effect in recall is due to either (a) the highly artificial stimuli used in the experiments or (b) the fact that the task provides relatively little opportunity for subjects to think about the information (see C. Cohen, 1981; Hamilton, Driscoll, & Worth, 1989; Wyer & Martin, 1986).

Neither of these criticisms applies to data collected with the

diary technique. Events recorded in the diaries are obviously not artificial—they are real slices of an individual's life. Furthermore, because subjects collect and record events for an extended period (10 weeks in the present study), they obviously have time to think about the events. Hence, the present experiment has the potential both to provide evidence for the memory inconsistency effect in a context free of the criticisms typically leveled at the laboratory research and to provide evidence about the generalizability of that memory inconsistency effect in a new (for this area) paradigm.

Furthermore, note that the memory consistency-inconsistency effects that we reviewed pertain only to recall for others' events. Because subjects in our study provided data both for themselves and another person, we were able to investigate whether person-typicality effects in recall are the same for self-events and other-events. Although this issue has been addressed by Markus (Markus, 1977; Markus, Crane, Bernstein, & Siladi, 1982), that research did not directly compare self-event recall with other-event recall. The present research design allows a direct comparison.

This self-other comparison is important largely because it is informative about the extent to which people may use self-expectancies. The classic pattern of recall outcomes (heightened recall for person-typical and person-atypical information relative to neutral information; greater recall for person-atypical than for person-typical information) for others' behaviors has long been considered evidence that other-expectancies are involved in processing and storing information. Hence, if that same pattern emerges in the recall of both self- and other-information, then it will suggest that expectancies or person categories are used for both and, more importantly, that there is a fundamental similarity in the way in which self- and other-information is processed. Differences in processing of self- and other-information are suggested to the extent that self-event recall qualitatively differs from other-event recall.

Event Pleasantness

In addition to our interest in the effects of person typicality on the memorability of events, we are interested in the effects of event pleasantness on event memorability. Psychologists have had a long-standing interest in this issue, and as Markus and Zajonc (1985) noted in their review of the cognitive perspective in social psychology, there are several studies demonstrating that positive events are better recalled than negative events. Matlin and Stang (1978) noted that this positivity bias in recall seems to be quite general, appearing in both naturalistic studies of autobiographical memories and laboratory studies using experimenter-generated stimuli (see Wagenaar, 1986, for recent evidence on this issue). However, there are two points to be made about the Matlin and Stang view.

First, not all memory studies produce the positivity effect in recall. In a laboratory study, Kreitler and Kreitler (1968) found a negativity effect. In a diary memory study, Thompson (1985a) found that both positive and negative events were recalled better than neutral events but did not obtain a difference in recall between the positive and negative events. Second, most of these positivity data pertain only to recall of self-events, not to recall of other-events, and there are logical and empirical reasons to

doubt the existence of positivity effects in recall for other-events. Fiske (1980) argued that it is beneficial to the organism to pay more attention to negative stimuli and, furthermore, that this enhanced attention should lead to greater recall of that negative information. Consistent with this hypothesis, research by Skowronski and Carlston (1987), who used an impression-formation paradigm, demonstrated that negative information about other people is better recalled than positive information.

These considerations suggest that, as with the person-typicality variable, a comparison of the pattern of self-event recall and other-event recall could be particularly informative. Assuming that we obtain evidence of a positivity effect in self-event recall (by no means a sure bet), an interaction between the emotional tone of an event and the person involved in the event (self or other) would suggest that mechanisms promoting positivity are specific to self-relevant events. By comparison, a general positivity effect (positive events being recalled better than negative, regardless of the source of the behavior) would suggest that the positivity effect is due to mechanisms that are inherent to the memory system.¹

Temporal Judgment, Temporal Coding, and the Degree of Detail in Event Memory

Recently, Wyer and his associates (Fuhrman & Wyer, 1988; Wyer, Shoben, Fuhrman, & Bodenhausen, 1985) have raised questions about how temporal information is coded in memory and how that temporal information is used to make temporal judgments (also see Wyer & Srull, 1989). Although there are several possible memory-based information sources that people can use to make temporal judgments about events (see Thompson, Skowronski, & Lee, 1988a; Wyer & Srull, 1989, pp. 425–426), we shall focus on two potential sources of information in memory: the recalled descriptive features of an event and the temporal tags that may be encoded with an event.

Event Memory and Event Dating

Because the date of an event is only occasionally stored with that event, subjects must often reconstruct the date on which the event occurred (Brewer, 1988; Brown, 1990; Thompson et al., 1988a). Recent research suggests that the details of event memory play a role in this reconstruction process: The more detailed the memory for the event, the more accurate the date (Thompson, 1985b; Thompson, Skowronski, & Lee, 1988b). The rationale behind this effect is straightforward. The temporally related details of events often provide clues that can help to define the range of possible event dates. If one recalls that snow was on the ground when one's car broke down, the range of dates on which that event was likely to have occurred is considerably narrowed. Thus, the more details one can recall about the event, the greater the chance that one can remember something that can help to date the event more precisely.

This reasoning suggests that factors that heighten event memory should also make dating more accurate. For example, if increases in event pleasantness were associated with heightened memory, one would also expect to find that increases in pleasantness are associated with lowered dating error. This study

provides an opportunity to test this hypothesis in the context of different variables.

Temporal Tags and Event Dating

A second factor that may affect the accuracy of date estimations is the availability of temporal tags. A temporal tag is nothing more than direct temporal information that is encoded along with an event. For example, an individual might recall that an event took place on a Monday without remembering much about the event itself.

Certainly, the notion that some events are temporally tagged is intuitively reasonable, and many researchers (e.g., Linton, 1975) have argued that temporal information about a personal event is routinely stored in memory along with the event. However, whether temporal tagging is a frequent occurrence is an open question. Data provided by Brewer (1988) point to an absence of stored temporal tags: Although subjects in Brewer's study frequently reported remembering information about such things as an event's location and about the actions that occurred in the event, they did not frequently report directly remembering temporal information. Other data provided by Huttenlocher and her colleagues (see Huttenlocher, Hedges, & Bradburn, 1990; Huttenlocher, Hedges, & Prohaska, 1988) similarly suggest that temporal tagging is not a very important factor in temporal estimation.

Our past experience with the diary paradigm, however, has convinced us that people make relatively frequent use of at least one type of temporal tag: day-of-the-week tags. In past dating studies, we observed that people often openly vent their frustration at being able to remember the day of the week on which something happened, but not the exact date. The use of these day tags suggests that people would tend to make dating errors that are multiples of 7 (right day but wrong week). Such a pattern of errors would be strong evidence that people frequently attach temporal tags to events, then use those tags to make dating judgments.

Other evidence supporting the temporal tagging hypothesis might come from an analysis of individual differences in dating accuracy. Skowronski and Thompson (1990) reported that women tended to be more accurate than men in their estimates of the dates on which self-events occurred. To explain this finding, they speculated that because women are generally assigned the social role of keeping track of important temporal tags—birthdays, anniversaries, weddings, and the like—women are generally more likely than men to temporally tag events. We included gender in several of our analyses to replicate our earlier work indicating that women are superior event daters and to investigate whether this effect is due to gender differences in the temporal tagging of events.

A final source of evidence supporting the existence of temporal tagging might come from possible self–other differences in event dating. Because we generally expect self-memory to be more richly detailed than other-memory, self-events should be

¹ Because of the well-known Freudian prediction of memory repression, some may be tempted to automatically assume that this effect is motivationally driven. However, different cognitive mechanisms can also account for a positivity effect in recall.

more likely than other-events to contain temporal tags. We conducted several analyses to investigate this possibility.

Recall Ratings

Our measure of recall in this experiment is a bit unusual: We asked subjects to rate their own recall for each event (a metamemory measure). Because this is an unusual measurement procedure, we note the following three points. First, the memory procedure is equivalent to cued recall, not recognition. The short description written by the subjects in their diaries elicits memory for alternative event characteristics (e.g., duration and exact content) but includes, at best, only a small subset of those characteristics.

Second, no memory study done outside a laboratory can duplicate a standard recall procedure. In a laboratory study, the material to be recalled is known. In this research, however, the content of the material to be recalled is unknown. Consequently, any attempt to abstract material from the events listed in the diaries for use in a laboratory-type study makes assumptions about what should be remembered. Obviously, such assumptions can easily go wrong. One does not encounter this problem with our metamemory measure.

Third, data from previous self-diary experiments strongly suggest that this memory rating procedure indeed reflects recall. In our own research, age plots of the memory rating data typically resemble the classic Ebbinghaus function and behave in other ways predicted in laboratory experiments on recall. These points are discussed in some detail in earlier articles (Thompson, 1982, 1985a, 1985b). Recent data collected by Brewer (1988) directly show that a memory rating procedure produced data similar to those obtained using more standard recognition and recall procedures.

Method

Subjects

Sixty-seven undergraduates who were enrolled in psychology classes at The Ohio State University, Newark Campus, participated in one of three academic quarters: spring 1987, fall 1988, and winter 1988. All subjects received class credit for their participation. Because 5 subjects either had too few entries in their diaries (less than 50% of possible events) or had uninterpretable data for many entries (less than 50% of entries were usable), their data were not entered into our analyses.

Event Recording and Preratings

Subjects kept two diaries, one for themselves and one for another person. The subjects selected this other person. The sole criterion for selection of the other person was that the person had to be a close friend or relative whom the subject saw on an almost daily basis.

We told the subjects to record one event daily in both their self-diary and their other-diary and that there were four restrictions on these events. First, each event had to be unique (i.e., it was expected to occur no more than once during that quarter). Second, each event had to be described in three short sentences or less. Third, in addition to obtaining informed consent from the subjects, we strongly advised them to use discretion in recording other-events—specifically, that subjects should avoid recording events of an unduly personal or embarrassing nature. Finally, when there was a choice among recordable events, sub-

jects were asked to try to record events that differed widely in memorability, person typicality, and pleasantness.

As events were recorded, subjects predicted each event's memorability on a 3-point scale, with 3 being *extremely memorable* and 1 being *not very memorable*. An extremely memorable event was defined as an event that would be remembered 1 year after it occurred. A not-very-memorable event was defined as one that probably would be forgotten after 2 weeks.

Subjects also rated the event's person typicality. Subjects were told to think about the event in relation to the kind of events that typically happened to the diary target and to rate the event accordingly. Subjects were given examples of person-typical and person-atypical events. For instance, subjects were told that getting a C on a history midterm could be either a typical or an atypical event, depending on the person involved. The event would be atypical if the target of the event were the kind of person who always got As on exams, but it would be typical if the target was the kind of person who always got Cs on exams. These ratings were made on a 7-point scale, with -3 being *very atypical* and 3 being *very typical*.

In addition to the predicted memory and typicality ratings, subjects rated the pleasantness of the event for the person who participated in the event. They used a 7-point scale ranging from 3 for *very pleasant* to -3 for *very unpleasant*.²

Procedure

Each of the 67 subjects generated events for approximately 10 weeks. The events were collected weekly.

The exact length of time during which events were recorded varied among subjects, depending on the academic quarter in which the study was conducted and the date on which each subject was tested. The effects of these variations were relatively small: The age of the oldest event that a subject could be asked to recall varied from 68 days to 75 days.

The memory test was administered during the week of final exams of each quarter. Each subject was tested individually. All subjects were first tested on their self-diary, then on their other-diary.

The events from each diary were read to subjects in a random order. As each event was read, subjects first determined whether the event was unique. This procedure was used because subjects obviously could not accurately date events that occurred more than once during the quarter. If the event was not unique, it was deleted, and the subject went on to the next event. If the event was unique, subjects then rated how well the event was remembered on a 7-point scale. This scale was developed by Herrmann and Neisser (1978) and is as follows: *not at all* (1), *barely at all* (2), *not so well* (3), *fairly well* (4), *very well* (5), *almost perfectly* (6), and *perfectly* (7). Each subject was advised that a rating of 7 was very unusual: "This means that if the event involved a conversation, you could recall the conversation word for word."

If subjects thought an event was unique and if subjects reported memory for the event (memory ratings of 2 or above), they were asked to date the event. They did so by referring to a 4-month calendar that provided month names, days, and date numbers. In addition to the calendar information, a block of the days on the calendar was numbered sequentially from 1 to 110. We obscured the starting date for each academic quarter by beginning the number sequence before the start of the

² Subjects were also asked to report their own degree of involvement in the events recorded in their other-diary. Subjects recorded whether they (a) actively participated in, (b) directly observed, or (c) merely heard about the event. The results produced by this variable were redundant with the data provided by the diary target variable. Hence, we do not discuss this variable in this article.

quarter (e.g., if the quarter started on April 1, our calendar numbering would begin in mid-March). The calendar was otherwise blank (i.e., no holidays or special events were noted). When dating events, subjects simply reported the sequential number corresponding to the date on which they thought the event occurred. After all events had been rated and dated, subjects were debriefed and dismissed.

Results and Discussion

Notes on Our Approach to Data Analyses

The final memory ratings and the absolute value of the dating errors (|actual date – estimated date|) were both analyzed (except for the analyses involving gender) by multiple regression methods. There are many regression models that could have been used to analyze these data. The analyses that we performed were derived from methodological considerations, our expectations, and a priori theoretical interests.

The general analytic approach that we used is a variant of the hierarchical technique recommended by J. Cohen and Cohen (1983). In this hierarchical approach, one runs several regression models of increasing complexity, interpreting only the highest order terms in the model. In our first set of primary analyses, we conducted three regressions for each dependent variable: one that included only the three main effects (self- or other-diary, pleasantness rating, and person-typicality rating); one that included the main effects and the three possible two-way interactions (interpreting only the interactions); and one that included the main effects, the two-way interactions, and the three-way interaction (interpreting only the three-way interaction term). In our second set of primary analyses, we investigated quadratic effects by first running a model with both the main effect term and the quadratic term (interpreting only the quadratic term) and then running a second analysis with the addition of the diary target variable and the Diary Target \times Quadratic Effect interaction term. A full explanation of the reasons underlying these analyses is beyond the scope of this article. Interested readers are referred to J. Cohen and Cohen (1983) for a detailed explanation of the rationale (see pp. 224–234 for a discussion of the quadratic analysis strategy and pp. 301–350 for a discussion of the analysis of interactions using multiple regression techniques).

We included event age and subjects as regressors in all of our regression models. More specifically, in schematic terms, the basic regression model that we used was

$$\begin{aligned} \text{target variable} = & \text{intercept} + \text{linear age} \\ & + \text{quadratic age} + \text{subjects} \\ & + \text{effects and interactions of interest.} \end{aligned}$$

Dummy coding was used to treat subjects as a categorical variable in these models, a strategy that allowed us to investigate the relations among our variables in a within-subjects format. Hence, the tests for our effects were extremely powerful compared with an analysis of variance (ANOVA) design, which would have required collapsing across the multiple data points provided by each subject.

Event age was included in these models because we expected age to have powerful linear and quadratic effects on both event

dating and event memory, and the omnibus analyses we performed evinced both linear and quadratic effects of age, smallest $F(1, 6010) = 15.37, p < .001$. Hence, we consistently controlled for these age effects in our main analyses. Our age analyses further indicated that the effect of event age on recall and on dating did not interact with the self–other variable. The overall effects of event age on event memory and on dating error are presented in Figures 1 and 2, respectively. To eliminate repetition, we shall not mention these age-related effects in the analyses that follow.

However, before continuing, it is worth noting that subjects were unaware of the actual date of an event during testing (unless the event was precisely tagged in memory), yet subjects consistently reported poorer recall for older events: The resultant memory function in Figure 1 is Ebbinghaus-like. The exceptions to this continuous decrease in recall across time are events that were recorded in the first week of the diary study. The rated memorability of these first-week events increased slightly, reflecting a likely primacy effect in recall. Because both the age effect and the primacy effect parallel the results of laboratory research, these effects lend a good deal of credibility to our memory measure.

Event Memory: The Effects of Target, Person Typicality, and Event Pleasantness

We were interested in (a) whether an event's pleasantness and an event's person typicality or person atypicality affected memory for events and (b) whether the impact of pleasantness, person typicality, and person atypicality on event recall was dependent on the person involved in the event (self or other).

The data indicate that event pleasantness had a significant impact on event recall. Pleasant events were recalled better than unpleasant events, $F(1, 6006) = 24.15, p < .001, \beta = .055$, and both extremely pleasant and extremely unpleasant events were recalled better than neutral events, quadratic pleasantness $F(1, 6023) = 215.60, p < .001$.

These pleasantness effects were qualified by several higher order interactions involving the diary target variable. Two of these interactions are illustrated by the data depicted in Figure

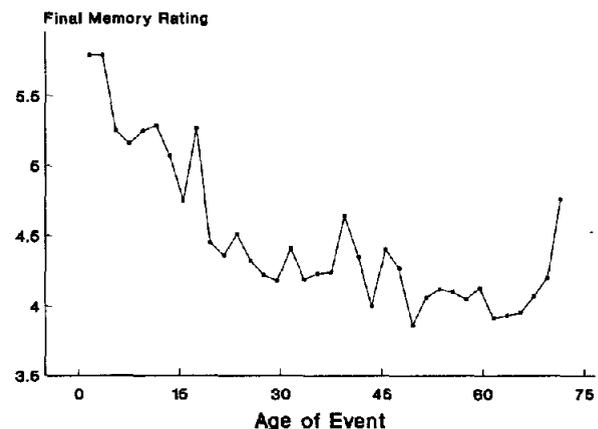


Figure 1. Reported event memory across time. (Data were plotted by averaging ratings for every 2 days.)

3, which presents the recall means for the various diary target-pleasantness combinations.³ As those means indicate, heightened recall for pleasant events relative to unpleasant events occurred primarily when those events were self-relevant. Other events showed no positive-negative asymmetry in recall. This self-other difference in the effects of event pleasantness on recall occurred in both primary sets of regression analyses, Diary Target \times Pleasantness interaction $F(1, 6003) = 6.00, p < .02$, self $\beta = .064$, other $\beta = .007$; Diary Target \times Quadratic Pleasantness interaction $F(1, 6021) = 6.95, p < .01$. The means in Figure 3 also show that, unsurprisingly, self-event recall was superior to other-event recall, $F(1, 6006) = 234.94, p < .001, \beta = -.165$.

However, the implications of the data depicted in Figure 3 are further qualified by the presence of a significant Diary Target \times Pleasantness \times Typicality interaction, $F(1, 6002) = 5.10, p < .03$. The β values for this interaction are presented in Table 1, and they indicate that the recall advantage for pleasant events was largest when the events were both self-events and were middling in typicality (1 to -1). Self-events that were either very typical or very atypical showed less of a recall advantage for positive events (or none at all). Neither positive nor negative events had a recall advantage when the events were other-events.

The person typicality of events also played a significant role in event recall. Person-atypical events were recalled better than person-typical events, $F(1, 6006) = 108.00, p < .001, \beta = -.124$, and both extremely typical and extremely atypical events were recalled better than events of moderate typicality (see Figure 4), quadratic typicality $F(1, 6010) = 66.31, p < .001$. Except for the three-way interaction previously reported, the typicality variable did not interact with the diary target variable.

These data have interesting implications for the issue of possible self-other differences in information processing and for the possible mechanisms underlying the impact of positivity, person typicality, and person atypicality on recall. Certainly, the mechanisms for the positivity effect in recall may need to be reevaluated in the light of these data. Matlin and Stang (1978) speculated that the positivity bias in recall was due to either (or both) of two cognitive mechanisms: greater accessibility of posi-



Figure 2. Dating error across time. (Data were plotted by averaging errors for every 2 days.)

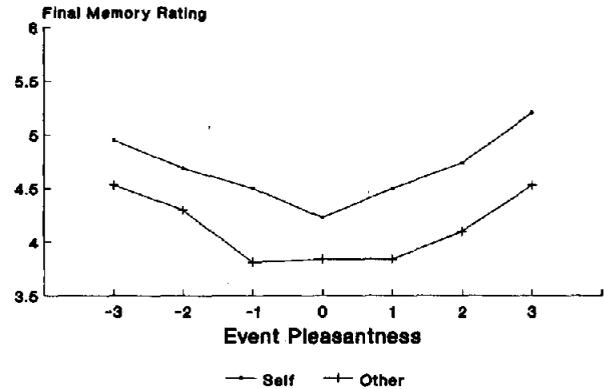


Figure 3. The mean self-rated recall scores for self-events and other-events by event pleasantness.

tive information than of negative information and more frequent rehearsal of positive information than of negative information. These mechanisms would seem to imply a positivity effect in recall for both self-events and other-events. We found a positivity effect in recall only for self-events.

However, the differential rehearsal mechanism might be salvaged. That is, if one assumes that differential rehearsal occurs only for self-events, then the differential rehearsal mechanism can still account for the data we obtained in this study. This is not an unreasonable assumption; both social and cognitive factors might contribute to this selective rehearsal. For example, selective rehearsal might be caused by attempts at social self-presentation: It seems likely that people's attempts to present themselves in a positive light will cause them to talk to others about positive autobiographical events more frequently than negative ones. Data suggest that self-presentations do, indeed, tend to emphasize the positive (Schlenker, 1980).

Positivity in recall might also be the result of the effects of the self-concept on events retrieved during rumination. The self-concept may serve as an entry point into the memory network, guiding memory search and retrieval processes. If information retrieval during rumination is affected by the self-concept, then those with a positive self-concept may be more likely to ruminate over positive events than those with a negative self-concept. This idea suggests that depressed people or people with negative self-concepts should tend to exhibit heightened recall for negative self-information, a proposition that already has some support (see Blaney, 1986).

Selective rehearsal also is a plausible mechanism for the enhanced recallability of person-typical events relative to events of neutral typicality that we observed in this study. Consider a typical social situation in which one has to describe oneself, or an acquaintance, to another person. One technique that can be used to convey information is to report some of the typical behaviors and characteristics of the target. This type of presen-

³ The data depicted in all of our figures are the unadjusted means rather than the means adjusted for the effects of event age. Because plots of those adjusted means were very similar to the plots of the adjusted means, we decided to present the raw data.

Table 1
The Pleasantness × Diary Target × Person Typicality Interaction for Person Memory Scores

Diary target	Perceived person typicality						
	-3	-2	-1	0	1	2	3
Self	.055	.065	.132*	.126*	.114*	.002	-.084
Other	.038	.047	.030	.013	-.016	-.015	-.055

Note. Data are pleasantness beta values for each Diary Target × Typicality combination.

* $p < .05$ in within-cell tests.

tation, in essence, causes selective rehearsal of person-typical information and should yield heightened recall for those person-typical behaviors.

Note that we do not propose selective rehearsal as a mechanism to replace those that have already been advanced to account for person-typicality effects in recall (see Wyer & Srull, 1989). For example, it is thought that person-typical events are well recalled because they are processed in relation to, and because they provide a good fit to, a social category. The category label itself can facilitate recall by providing an additional recall pathway that can be used to directly access category-consistent items. The category label also provides pathways to related category-consistent items, and these related items can serve as prompt cues that may be useful in recall. These mechanisms may certainly have been operating in this study.

However, these explanations for the recall-enhancing effects of categories were developed to account for performance in laboratory tasks in which subjects learn many facts about a target and later engage in free recall of those facts. These short-term tasks would seem to facilitate the consideration of items in relation to each other and in relation to a social category. Obviously, selective rehearsal is not a very viable explanatory mechanism in these short-term tasks, but because of the long-term nature of our study, selective rehearsal may have been a potential contributor to recall in the present research.

Although our data are consistent with a selective rehearsal mechanism for both positivity and person-typicality effects in recall, more direct support for this idea would be desirable. We made no attempt in this study to assess how frequently subjects

thought about or talked about the different events they listed in their diaries. Obviously, event rehearsal is a variable that should be included in future research using this paradigm.

Finally, the person-atypicality effects we observed in the experiment also have important theoretical implications. Certainly, several of the cognitive processes thought to cause heightened recall for person-atypical behaviors in laboratory research seem to apply straightforwardly to the real-world events used in this study. More specifically, person-atypical events might be (a) granted more attention during initial processing (see White & Carlston, 1983) and (b) more likely to be specially tagged in memory as an example of an event that does not fit the category into which the target was assigned (as in the "schema-plus-tag" memory model—see Graesser, Woll, Kowalski, & Smith, 1980).

The fact that we obtained evidence for person-atypicality effects in recall in the present study is of considerable theoretical importance. The results of other recent research have hinted at the possibility that memory inconsistency effects might be limited to special circumstances or might be an artifact of laboratory procedures (e.g., Hamilton et al., 1989). Hamilton et al. suggested that in a multiperson, multievent environment, the effect of person atypicality on recall would disappear (and it did disappear in their research). These authors reasoned that the person-atypicality effect might not be characteristic of a real-world environment in which one must keep track of many actors at once. Our data suggest that the usual laboratory-generated data on consistency-inconsistency effects are not merely artifacts of laboratory procedures but instead realistically reflect patterns of recall in the real world. Our expectations about both ourselves and others seem to have a strong impact on what we later remember about social events.

Although our data are highly congruent with the results of laboratory research, one might argue that our data set was itself artifactual. For example, some might claim that the effects we observed reflect nothing more than the tendency to better recall extreme information. Events that were person atypical might have been more extreme than person-typical events, accounting for the person-atypicality effect. The positive events could have been more extreme than the negative events, accounting for the positivity effect. Both the positive and the negative events could have been more extreme than the neutral events, accounting for the quadratic typicality effect. Self-events could have been more extreme than other-events, accounting for the diary target effect.

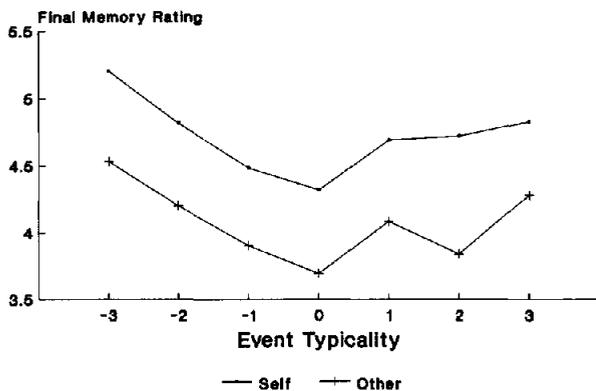


Figure 4. The mean dating error for self-events and other events by person typicality.

We conducted two additional sets of regressions that evaluated the ability of event extremity to account for the memory effects observed in our initial analyses. Each set of regressions used a different measure of extremity. One set used subjects' initial memorability ratings (subjects' predictions of how well they would remember the events) as an index of event extremity; the second set of analyses used the absolute value of the subjects' pleasantness ratings as an index of event extremity.⁴

Unsurprisingly, the results of both analyses indicated that extreme events were better recalled than less extreme events, $F(1, 6005) = 958.70, p < .001$, for the initial memory rating index, and $F(1, 6005) = 216.00, p < .001$, for the pleasantness-derived index. Although these extremity indexes were each powerful predictors of recall, they cannot account for the effects of pleasantness, typicality, or diary target on recall. Inclusion of the initial memory rating variable in the regression analysis weakened both the pleasantness main effect and the Pleasantness \times Typicality \times Diary Target interaction, but both were marginally significant (both $ps < .06$); all other effects that were significant in the primary regression analyses were again significant in the reanalyses, smallest $F(1, 6001) = 5.23, p < .03$. The results of these analyses suggest that event extremity is not a viable explanation for the effects of diary target, person typicality, or event pleasantness on recall.

A second artifact explanation for the significant effects of the diary target variable on recall involves possible differences in the events recorded in the diaries. Specifically, it is possible that our diary target effect occurred because of systematic differences in the self- and other-events recorded. For example, subjects might have recorded more episodes related to family for themselves and more episodes related to school for others; thus, the self-other difference we obtained could reflect generally better memory for family events than for school events and not a self-other difference in recall.

We attempted to evaluate this possibility by conducting a content analysis on the events recorded in the diaries and by using the results of the content analysis as a predictor of event memory. If event content is responsible for the self-other effect in recall, the diary content variable should eliminate the effects of the diary target variable on recall.

This did not happen. Several analyses using the information from the content analysis were conducted, and all indicated that, although event content was a predictor of recall, inclusion of event content into the regression model did not eliminate the diary target effect. For example, in a regression analysis in which all 73 content categories were used as levels of the diary content variable, diary content had a significant relation to recall, $F(72, 8480) = 6.13, p < .001$, but did not eliminate the impact of diary target on recall, $F(1, 8480) = 391.37, p < .001$.⁵ Similar results were obtained from an analysis in which the 73 basic-level categories were grouped into four higher order categories, which were then used as predictors in the regression equation, diary content $F(3, 8549) = 6.06, p < .001$; diary target $F(1, 8549) = 352.87, p < .001$.

Also, recall means calculated for each of the content categories confirmed that the self-other difference in recall is quite general. Of the 69 categories in which there were ratings from both self- and other-diaries, 60 produced differences in the expected direction (self-events were better recalled than other-

events). Furthermore, the means for the reversals are statistically unreliable, for they were generally calculated from only a few subjects (mean number of data points per cell = 2.5). Hence, the results of these analyses suggest that the self-other recall effects that were obtained were not an artifact of the differential listing of events in the diaries.

Event Dating

One method that subjects can use to estimate the date of an event is to recall details of the event. If event recall is important to event dating, then the event dating data should closely resemble the event memory data: The same things that affect memory should affect event dating accuracy.

We investigated this hypothesis by conducting regression analyses on the accuracy of the event dates provided by the subjects. As would be expected if memory were the primary determinant of dating accuracy, pleasant events were dated more accurately than unpleasant events, $F(1, 6006) = 20.51, p < .001, \beta = -.056$; person-atypical events were dated more accurately than person-typical events, $F(1, 6006) = 32.20, p < .001, \beta = .075$; dating accuracy for self-events was better than dating accuracy for other-events, $F(1, 6006) = 22.21, p < .001, \beta = .056$; both positive and negative events were dated more accurately than neutral events, $F(1, 6023) = 5.78, p < .02$; and both person-atypical and person-typical events were dated more accurately than events of middling typicality, $F(1, 6010) = 6.92, p < .01$. However, in contrast to the results of the memory analyses, the dating accuracy analyses did not yield any significant interactions with the diary target variable. Thus, the results of the dating accuracy analyses were only moderately similar to the results of the memory analyses, indicating that factors other than event memory were contributing to dating accuracy.

We further investigated the relation between recall and dating accuracy by rerunning the regression equations with subjects' final memory ratings added to the model. If memory mediates the impact of pleasantness, person typicality, and diary target on dating accuracy, then one would expect that the addition of memory to the regression model would eliminate the statistical effects of these variables.

The results of these analyses clearly indicated that event memory is important to event dating, smallest $F(1, 6005) = 260.90, p < .001$. The results also suggested that event memory may have mediated some of the significant effects we obtained in our primary analyses of accuracy. Adding the memory variable to the model eliminated both the quadratic pleasantness and the quadratic typicality effects, $F(1, 6022) = 0.62$ and $F(1, 6009) = 0.85$, respectively, and the diary target effect, $F(1, 6005) = 2.52, p < .12$.

However, most important, the results of the analyses also

⁴ All quadratic pleasantness tests were performed on ratings linearly transformed to a 1-7 scale. In the present case, this transformation avoids a linear dependence between the extremity score and the pleasantness score.

⁵ Because events could be coded into multiple categories, a single event could appear more than once in this analysis. Hence, the events in this analysis are not independent, and the error degrees of freedom are inflated.

suggest that dating accuracy is not solely dependent on event memory. In the reanalyses, both the person typicality and pleasantness effects remained significant, $F(1, 6005) = 12.94$, $p < .01$ and $F(1, 6005) = 12.92$, $p < .01$, respectively, despite the addition of the memory variable to the regression model.

Temporal Tagging and Event Dating

The results of these analyses suggest that event memory is only one among a set of important contributors to the accuracy of event dating. A second factor might be the tendency to tag events in memory with a temporal cue. The nature of the tag can vary, ranging from specific dates (it happened on August 29th) to general periods (it happened in summer). Several analyses were conducted to more directly investigate the temporal tagging hypothesis.

Error analyses. The first, and most revealing, of these analyses investigated the overall pattern of dating errors generated by our subjects. In previous research, we noted that subjects would often verbalize the day of the week on which an event occurred as they attempted to remember the exact date. That subjects might remember the day on which an event occurred but not the actual date suggests that some magnitudes of dating errors occur more frequently than others: Subjects would tend to make errors that are multiples of 7 days. The data in Figure 5 dramatically indicate that subjects frequently made these multiple-of-7 errors: Dating errors of 7 days, 14 days, 21 days, 28 days and 35 days occurred much more frequently than errors of other magnitudes.

We statistically compared the average number of errors that each subject made at each of the multiple-of-7 error magnitudes (i.e., 7, 14, and 21) with the average number of errors subjects made at each of the error magnitudes that were not multiples of 7. These averages were calculated separately for each diary and then entered into a 2 (rater gender) \times 2 (diary target) \times 2 (error multiple) ANOVA. The results of this analysis indicated that the multiples effect was highly significant, $F(1, 60) = 188.01$, $p < .001$.

The presence of a significant Diary Target \times Error Multiple

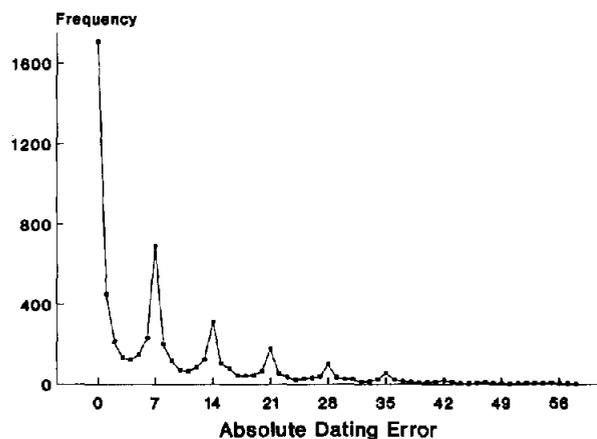


Figure 5. The frequency with which subjects made dating errors at differing error values.

interaction in this analysis, $F(1, 60) = 6.39$, $p < .02$, indicates that the multiples effect is consistent across diary targets but is somewhat stronger for self-events than for other-events (self multiple-of-7 $M = 1.24$, other multiple-of-7 $M = 1.05$, self non-multiple-of-7 $M = 0.39$, other non-multiple-of-7 $M = 0.37$). Because making a dating error that is a multiple of 7 days may indicate that some temporal information has been stored about an event, this outcome suggests that self-events are more frequently tagged than other-events.

These data also hint at possible gender differences in temporal tagging. The Error Multiple \times Rater Gender interaction was not significant, $F(1, 60) = 2.56$, $p < .12$, but the overall pattern suggests more tagging activity by women. That is, whereas women tended to make more multiple-of-7 errors than men, there were no gender differences in the non-multiple-of-7 error rates (female multiple-of-7 $M = 1.19$, male multiple-of-7 $M = 1.04$, female non-multiple-of-7 $M = 0.38$, male non-multiple-of-7 $M = 0.39$). In the following section, we turn our explicit attention to gender differences in event dating and dating accuracy and to the possibility that gender differences in temporal tagging might underlie those differences.

Gender analyses. Prior research using the diary paradigm has indicated general female superiority in event dating (Skowronski & Thompson, 1990). We conducted several analyses to both replicate this finding and to investigate whether this superiority was due to more frequent temporal tagging of events by women.

Because including gender in the regression model induced a linear dependence among effects, we could not conveniently use the regression technique. Instead, we averaged each subject's dating errors for the first 38 days of diary keeping (old events) and for the most recent 37 days (recent events) and used time as a factor in a 2 (rater gender) \times 2 (diary target) \times 2 (time) ANOVA.

The results of this analysis replicate previous results: Women tended to provide more accurate date estimates ($M = 8.43$) than men did ($M = 9.65$), $F(1, 60) = 3.53$, $p < .07$. Also, the analysis indicated that people were more accurate in dating self-events ($M = 8.22$) than other-events ($M = 9.39$), $F(1, 60) = 6.39$, $p < .05$, and that recent events were dated more accurately ($M = 5.60$) than old events ($M = 12.00$), $F(1, 60) = 156.72$, $p < .001$. However, these effects were qualified by a significant Rater Gender \times Diary Target \times Time interaction, $F(1, 60) = 7.93$, $p < .01$. This interaction, depicted in Figure 6, indicates that women were particularly accurate when the events were self-related and recent and that men were particularly inaccurate when the events were other-related and old.

These gender differences in dating accuracy cannot be due to differences in event memory: There were no gender differences in analyses of event memory, largest $F(1, 60) = 1.82$, $p < .25$. We believe that these accuracy differences reflect the fact that women engage in temporal tagging more frequently than men do. These differences in temporal tagging activity could involve either of two types of tagging. First, women could be more likely than men to assign a specific calendar date to an event. This idea suggests that the dates provided by women will more often be exactly correct than the dates provided by men. Alternatively, women could be more likely to assign less specific temporal tags (such as day of the week) to events than men, as

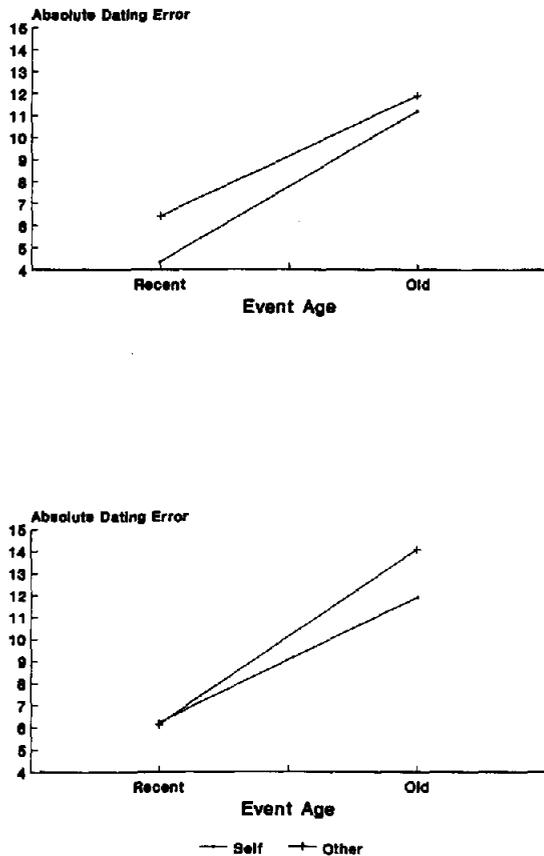


Figure 6. The dating error means for the Gender \times Diary Type interaction. (Top panel, women; bottom panel, men)

suggested by the results of our earlier analysis of dating errors. This idea suggests that when estimates are not exact, women will provide more precise estimates than men. Incidentally, this same logic applies not only to male–female differences but also to self–other differences.

We conducted several additional analyses to investigate these ideas. In the first of these analyses, we calculated the proportion of exact dates provided in the old and recent time periods and entered these proportions into a 2 (rater gender) \times 2 (diary target) \times 2 (time) ANOVA. Women ($M = 0.312$) provided an exact date more frequently than men ($M = 0.240$), $F(1, 60) = 5.23$, $p < .05$, and exact dates were more often provided for self-events ($M = 0.318$) than for other-events ($M = 0.262$), $F(1, 60) = 13.24$, $p < .001$. Also, this analysis yielded an unexpected Rater Gender \times Diary Target interaction, $F(1, 60) = 4.14$, $p < .05$. For self-events, women ($M = 0.349$) were much more likely than men to report the correct event date ($M = 0.252$); for other-events, women ($M = 0.280$) were only somewhat more likely than men to report the correct event date ($M = 0.249$). Finally, as expected, exact dates were more often provided for recent events ($M = 0.422$) than for old events ($M = 0.157$), $F(1, 60) = 134.50$, $p < .001$.

The results of this exact-date analysis suggest that at least some of the dating superiority for women and for self-events is due to the direct tagging of events with exact calendar dates. We

assessed the alternative possibility suggested by the multiple-of-7 analysis, that nonexact temporal tags also contribute to women's superior accuracy, by eliminating the exactly dated events from the data, recalculating the average dating error for the first 38 days and for the most recent 37 days, and entering these averages into the 2 (rater gender) \times 2 (diary target) \times 2 (time) ANOVA.

The results of this analysis yielded only two significant effects. The first of these was a main effect for time, $F(1, 60) = 68.63$, $p < .001$, indicating that old events ($M = 14.22$) were dated less accurately than recent events ($M = 9.72$). The second significant effect in this analysis was a significant Rater Gender \times Diary Target \times Time interaction, $F(1, 60) = 7.71$, $p < .01$. The pattern of means for this interaction is similar to the pattern observed in Figure 6. The gender main effect, the diary target main effect, and the Diary Target \times Rater Gender interaction were not significant in this analysis. Hence, these data suggest that the overall enhanced dating accuracy for women and for self-events was largely due to direct tagging with calendar dates. When events were not accurately dated, women's estimates were generally no better than men's estimates, and estimates for self-events were no better than estimates for other-events.

The fact that there were no significant gender or diary target effects on accuracy for events that were not perfectly dated is somewhat puzzling, especially because one of the frequently cited strategies for event dating is reference to another event (e.g., Loftus & Marburger, 1983). Logically, one might assume that if subjects are using a reference strategy to estimate dates, then increasing the number of perfectly dated events that could serve as landmarks should increase the accuracy of date estimates. Although there were more perfectly dated events for both women and self-events, these perfectly dated events did not generally improve estimation accuracy.

However, as Wyer and Srull (1989) noted, the characteristics of memory systems might determine the usefulness of reference events to dating. It is not unreasonable to speculate (see Fuhrman & Wyer, 1988) that one event type (a date with a girlfriend) is much more likely to elicit recall of thematically similar events than of thematically dissimilar events (basketball games). An event can be useful as a dating benchmark only if subjects recall the benchmark at the time they are attempting to assign a date to the target event. Hence, even if there are many events dated precisely, those perfectly dated events might only be spontaneously used as benchmarks when they are brought to mind by some thematic similarity to the target event. These considerations suggest that future research using this paradigm should attend more fully to how the thematic relations among events influence the recall of thematically similar events and to how the recall of those similar events might influence dating performance.

Before these possibilities can be seriously pursued, other potential causes for some of the effects observed in the gender analyses merit investigation. It is possible that the gender differences in event dating were actually caused by differences in the events recorded. For example, women's superiority in event dating might have resulted from the fact that women listed more events that are typically precisely dated (e.g., birthdays) than men did. Alternatively, it is possible that there were gender dif-

ferences in dating accuracy because of general differences in the content of events recorded. For example, men and women might have listed different event types in their diaries, and these event types, rather than gender, might actually be responsible for the apparent gender differences in event dating.

We developed an event-coding scheme to deal with the argument that men and women listed events that differed in terms of the likelihood that a temporal tag would be stored with an event. We initially coded all events into one of three categories: (a) events that almost everyone has stored with a precise date (e.g., own birthday), (b) events that some people might have stored with a precise date (e.g., nephew's birthday), and (c) events that few people are likely to store with a precise date (e.g., the date of the third psychology test of the term). Because not all subjects had events in all three categories, we collapsed the data from Categories a and b into one category. We then calculated the percentage of correctly dated events for each category for each subject's diaries, and we entered those averages into a 2 (rater gender) \times 2 (diary target) \times 2 (event datability) ANOVA.

If event datability mediates the gender effect, then one would expect the gender effect to be eliminated by the inclusion of event datability as a within-subjects variable in the analysis. This did not happen, although event datability clearly had an effect on dating accuracy. Events classified as "often stored with exact dates" were dated correctly 70% of the time, and events classified as "not often stored with exact dates" were dated correctly only 26% of the time, $F(1, 60) = 137.57, p < .001$. However, this powerful datability effect did not eliminate the gender effect: Women were correct more often than men, regardless of whether the events were classified as often stored with exact dates (female $M = 0.74$, male $M = 0.61$) or were classified as not often stored with exact dates (female $M = 0.28$, male $M = 0.21$), $F(1, 60) = 4.79, p < .05$.

The analysis similarly suggests that the self–other difference in dating accuracy also cannot be attributed to differences in the events listed in self- and other-diaries (self $M = 0.51$, other $M = 0.27$), $F(1, 60) = 9.65, p < .01$. However, a significant Event Datability \times Diary Target interaction indicates that this self–other difference is much larger for events that were thought to be frequently stored with exact dates (self $M = 0.77$, other $M = 0.62$) than for those that were not (self $M = 0.28$, other $M = 0.24$), $F(1, 60) = 4.15, p < .05$.

The results of this analysis strongly suggest that women's superiority in event dating was not simply due to the fact that they more frequently entered typically dated events into their diaries than did men. The results of the content analysis support this conclusion. Because of the great number of missing cases that were involved, using the content analysis data in inferential statistical tests (as we did for the memory data) was impractical. However, the means for the content categories make a reasonably strong case for general female superiority in event dating. Of the 66 categories in which both men and women provided estimates, 42 yielded differences in the expected direction (better dating by women than by men).

Furthermore, a content artifact explanation for the gender difference in dating accuracy requires that there be a significant disparity in the frequency with which men and women mentioned events in various categories. This was not the case. There was an extremely high correlation between the frequency with

which women mentioned events in a category and the frequency with which men mentioned events in the same category. This high correlation was present in an analysis using the number of subjects who mentioned an event in a category at least once as the data for the correlation, $r(71) = .923, p < .001$, and in an analysis using the raw frequencies themselves as the data, $r(71) = .874, p < .001$.

Thus, as with the memory data, the results of these analyses indicate that the outcomes that we obtained were not an artifact of differential listing of events in the diaries. Men and women listed events in the diaries with approximately the same frequencies. Across content domains, women were generally more accurate than men. However, it is worth noting that, although not statistically reliable, there do seem to be some areas in which men's date estimates appeared to be somewhat more accurate than women's estimates. Several of these areas of greater accuracy concerned activities that might be considered stereotypical for men (e.g., activities involving home improvements or activities involving a car or vehicle). This outcome suggests that although women may be generally more accurate in estimating dates than men, men may have some domains of expertise in which that effect is reversed. Future research in this area might attempt to more systematically obtain events from various domains to determine whether these reversals are consistent and whether they can be traced to a specific memory system (event memory or temporal memory).

Conclusions

The data reported in this study have important implications for researchers in several areas of social cognition. First, patterns of self-event recall and other-event recall were similarly affected by both the person typicality of events and the person atypicality of events. This result suggests that the basic social cognitive approach to information processing applies equally well to both self-perception and to other-perception, particularly with respect to the impact of person expectancies on recall.

However, self–other congruence did not characterize all of the data in this study. Pleasant events were recalled better than unpleasant events but only when those events were both self-relevant and were not recallable for another reason (such as high person typicality or high person atypicality). Given the results of past research (Skowronski & Carlston, 1987), the fact that we obtained an interaction between the self–other variable and event pleasantness was not surprising. However, in contrast to the Skowronski and Carlston data, which found negativity effects in recall for the behaviors of others, in the present data set, neither positive nor negative information about others had a recall advantage (although both produced superior recall relative to neutral information).

One possible reason for the absence of negativity in the data set might be the nature of the targets used in the research. In contrast to the initially neutral "paper people" commonly used in laboratory research, the other-targets in this study were almost all people who were close to, and positively regarded by, the diary keepers (parents, children, roommates, and close friends). A close relationship between the diary keeper and the other-target may boost recall of the other's positive behaviors

(in essence, a person-typicality effect) by inducing the diary keepers to bolster their prior impression (Srull & Wyer, 1989). This suggests that the nature of one's relationship with another person is an important mediating variable in the impact of event affect on event recall, and it may need to be considered more closely in future social memory research.

The data in this article also speak to issues of temporal representation and temporal judgment. Although there are precedents (Fuhrman & Wyer, 1988; Wyer et al., 1985; Wyer & Srull, 1989), temporal representation and temporal judgment have not been areas into which social cognition researchers have frequently ventured. Our data suggest that there are some interesting questions in the area and that the answers to those questions can help facilitate the understanding of some issues of central concern to researchers in social cognition.

The temporal judgment data generally suggest that (a) temporal information is very imperfectly stored in memory and (b) temporal judgments rely on several sources of memory-based information. The clarity of event recall appears to be an important contributor to the accuracy of dating judgments. The more one can remember about an event, the better the date estimate will be. However, people may sometimes store temporal tags in memory along with descriptive information about the event. Furthermore, the tendency to store temporal tags might depend on both the person (e.g., gender effects) and on the characteristics of the event: Self-events and events that were pleasant were dated more accurately than other-events, even when the effects of event memory were statistically controlled.

Finally, one cannot overlook the fact that these data were collected in a field setting, with its accompanying lack of control over extraneous factors. Given this lack of control, the consistency between the results of laboratory work and the data collected for this article is impressive and should be extremely comforting to those who are occasionally troubled by the ivory tower nature of the research that we perform.

However, we do not believe that social cognitive psychology should abandon that ivory tower. We agree with Banaji and Crowder (1989) that basic research is best done in the laboratory. Nonetheless, we would suggest that social cognitive psychologists more frequently attempt to explore the implications of their research in settings outside the laboratory. Working with real-life events is quite interesting; both researchers and subjects expressed an unusually high level of interest in this study. Also, we found it extremely satisfying that ideas generated in the laboratory actually work in the real world. Further research in real-world settings might indicate important processes that are not immediately obvious in laboratory work (such as the mechanism of differential rehearsal in this study).

Regardless of the research setting and the topic, many of the fundamental issues in social cognition revolve around two questions: how social information is represented in memory and how that information is used in judgments. As Fuhrman and Wyer (1988) suggested, a multifaceted approach is necessary if these questions are ever to be answered. We hope that the approach used in this study significantly contributes to the understanding of these complex representational and judgmental issues.

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