

PHOENIX AND CHIMERA: THE CHANGING FACE OF MEMORY

Marigold Linton

Widely known for her work on long-term memory and the process of forgetting in which she herself was the subject, Marigold Linton is an experimental psychologist at Arizona State University who specializes in memory cognition. In addition to her expertise in the field of memory she has maintained a longtime commitment to the psychology of education for the American Indian. In 1980 she helped set the legal precedent in Utah which allowed psychologists to address the adequacy of eyewitness testimony in a court of law. Here Linton establishes the connection between historians and cognitive psychologists as she lays out some of the commonalities in human memory processes and places memory into the social milieu in which it operates—how it is accessed, how it is affected by emotion, and how it changes over time.

In considering this unique meeting between cognitive psychologists and historians, I was irresistibly drawn to ask, “How are applied cognitive psychologists like oral historians?” I was intrigued by the similarities. We are more alike than I had thought.

We are brought together, of course, by our shared interest in memory. “As a group,” said John Neuenschwander in 1978, “oral historians have more interest in and contact with human memory than any other professionals except psychiatrists and psychologists. . . . Whenever they gather at professional meetings their shop talk invariably turns to anecdote swapping about strong, weak, and unique memories.”¹ Neuenschwander, however, regretted that “[Psychologists] prefer to study short-term memory and have given scant attention to long-term reminiscence. Oral historians,” he said, “encounter it all the time, but their uncritical interest has precluded any serious study on their part. Thus the study of reminiscence as a factor of long-term memory has fallen beyond the reach of the psychologist and beneath the grasp of the oral historian.”² Neuenschwander’s concern leads to the next point of similarity.

Historians generally rely on written documents, a reliance that subtly restricts the range of credible sources. Oral historians argue that history is enriched by including evidence from a wider range of sources, in particular those that are made possible by the use of oral narratives. Increasing the kinds of acceptable sources permits the viewpoints of additional popu-

lations to be represented in histories. In an analogous way, ecologically oriented cognitive psychologists have argued that methodologies of traditional psychology are too restrictive. From our viewpoint psychology has long been handicapped by its almost exclusive reliance on the laboratory, its restrictive research materials, and its conveniently short (but scientifically limiting) time periods. We argue for a wide range of “lifelike materials,” for examining memory in ecologically valid settings, and for recall delays (sometimes as long as decades) that reflect the range and capacity of the human mind. Neuenschwander would surely approve these goals.

Both cognitive psychologists and oral historians advocate blending the new methodologies with the old rather than pressing for the rejection and replacement of the older methodologies, a practice popular among psychologists, if not historians. They share the belief that the new methods complement the old, that practitioners must be well grounded in both, and that the combined methods yield a more complete and compelling picture of the world than does either alone. Finally, although both oral history and ecological cognitive psychology reflect old traditions in their disciplines, both have received renewed scientific attention in recent decades.

The differences between the areas, however, should not be overlooked. The cognitive psychologists’ interest in formal characteristics or structure of memory contrasts sharply with the oral historians’ concern with memory’s contents. This difference between the disciplines is seen clearly in their respective attitudes toward errors. Oral historians, on the average, are troubled if their respondents produce error-ridden narratives. Cognitive psychologists, on the other hand, have made errors their stock-in-trade. Errors are the tools by which theoretical mechanisms of memory are thought to be revealed. When there are too few errors, psychologists worry about artifacts such as ceiling effects and are likely to reject the data and select more compelling paradigms or, perhaps, better subjects. I imagine oral historians resorting to similar strategies when their narrator’s story displays too many (not too few) errors.

I might have called this paper, “Almost everything I ever wanted to say to an oral historian.” Why did I call it “Phoenix and Chimera”? Memories, we believe, rise like the phoenix from their own ashes: following the same pattern but always new. *Chimera* I am using in its several senses—to mean both a many-faceted, changing creature as well as a creature of the imagination. The phrase is my announcement that I shall focus on memory’s changing face rather than on its stability. To illustrate this point, I have selected three themes that I believe will be of interest to oral historians and not too dull for the psychologists: (1) changes in memory associated with the kind of search that is made (the way in which the narrator addresses memory); (2) changes in memory associated with emotion; and (3) changes that emerge as our personal memories mature and

age. A memorial fermentation process seems to occur as memories “ripen,” even if it is not always a fine wine that results!

I shall be referring to ideas derived from two long-term memory studies involving my own memory. Let me begin by outlining the approaches used. These studies, sometimes described as “Ebbinghausian” after the work of that innovative German psychologist of the last century,³ are still unusual among cognitive psychologists. Like Ebbinghaus, I am my principal subject, and my studies like his have lasted for many years. My studies, however, differ importantly from Ebbinghaus’s in the kind of material they employ: Ebbinghaus, who was instrumental in establishing contemporary psychologists’ interest in abstract memory, developed and studied “nonsense syllables” such as DAX and PEF. In contrast, the materials I employ are highly structured and meaningful. Ebbinghaus continued his single-subject research for about five years, but he most often recalled materials after relatively brief delays. These short delays are a natural consequence of the stimuli he employed. Recall was so poor after longer periods that he was forced to rely on “savings” methods to discern that the information had been previously known. (“Savings” refers to the decreased amount of time required to *relearn* forgotten materials compared with the time originally required.) With real-life events comprising my more meaningful stimuli, it is possible to examine recall after much longer time periods using more standard retention measures.

I inaugurated my long-term memory research in 1972 with a diary-method study of my own *autobiographical* memory. Each day for ten years I entered two to five descriptions of events from my own life into an ever-expanding file of four-by-six cards. Were I entering items contemporaneously, I would surely include an item such as: I present a talk at the Memory and History symposium at Baylor University. Once a month for six of these years, using a variety of tests, I examined my memory for a predetermined sample of these items. A more detailed description of these procedures appears elsewhere.⁴ Among the eleven thousand or more items I collected over this ten-year period were numerous events similar to those which oral historians might elicit from people’s memories. It is not too far-fetched to imagine that were an oral historian to interview me about an historical topic—such as “cognitive psychology in the 1970s”—my narrative would include some of these items. Because these events are part of ordinary life, they (like memories of interest to oral historians) may be spontaneously rehearsed—that is, I may think or talk about them—or they may remain relatively neglected.

In 1979 I began a second memory project involving long-term recall for semantic information. The resulting studies explore what I call the “maintenance of knowledge.”⁵ In these studies I began by deliberately learning a carefully selected body of nonpersonal, nonevent information, the names of plants.

The items learned are tested and rehearsed after increasingly long delays. The stimuli for most of these studies have been color pictures of plants while the responses learned are the common, scientific, and family names associated with them. Let me highlight the ways in which the maintenance-of-knowledge studies differ from my autobiographical memory study. I shall then explain why I have begun to study these more formal stimulus materials. First, real-life event memories are related in a variety of complex ways; the scientific materials used in the maintenance of knowledge studies are related in relatively simple, formal ways. Each item has a comparable set of names. It is as if we have simplified the grammar to produce sentences with subject, verb, and object in a standard frame. Second, there exists an acknowledged correct version of each item learned. Third, in my paradigm I memorize this information quite exactly during the learning sessions. Fourth, although information is inevitably lost over time, the verifiably correct information is reintroduced into memory through regular rehearsals.

I always hated it when my mathematics professor used the introductory phrase: "It is obvious that . . ." I hope, however, that I may show the relevance of these features of "maintenance of knowledge" to the study of autobiographical memory. Let me begin by considering why it is important that the items have comparable structures. First, we assume that complex schemas or frameworks underlie events in our autobiographical memories; however, it is difficult to specify these frameworks ad hoc. Ordinarily in my autobiographical memory studies, forgotten information is simply lost. After loss, a lacuna or hole exists in the story. In daily life and in autobiographical memory studies, when some features of the information are retained, plausible memorial elements may be borrowed from other memories to fill existing holes (or empty frames) in the story. Presumably these memory elements come from related frameworks. Because it is difficult to judge similarities among complex autobiographical memory schemas, it is difficult to predict when or where these migrations will occur. With simpler materials we can perhaps begin to discern how the substitutions occur. Specifically, I hope that by using systematically related materials with standard structures I might observe both how the informational structure builds up with repetition and how errors relate to this developing knowledge base. These materials and memories are clearly not directly comparable to the materials of interest to the oral historians or autobiographers, but I think that the memory changes observed here shed some light on the way autobiographical memories change.

Second, because there is an established correct version of these "simpler" materials, we have much better control over the basic information in memory. (For even a simple autobiographical memory many additional layers of knowledge may exist.) For these simpler memories it is much clearer what was learned. Third, both forgetting and rehearsals occur

in our naturally occurring memories, but it is difficult to control the number of rehearsals that occur. In the maintenance paradigm, well-defined rehearsals can occur at specified intervals. Finally, I can look at the similarities between items and predict what set of errors will intrude when “holes” in memories occur.

To summarize, memories of interest to oral historians—those that are sometimes rehearsed and sometimes not, those that are sometimes coherently integrated into the remaining memories and sometimes not, those that sometimes may be (and are) verified against existing sources and other times may not—probably lie somewhere between the psychologists’ semantic knowledge (my maintenance-of-knowledge studies) and episodic memories (my autobiographical studies). I hope by alluding to both lines of research to illumine some dark corners of oral history. I begin with ideas related to my autobiographical memory research. Some of these specific ideas have been described at greater length in my paper “Ways of Searching and the Contents of Memory.”⁶

THE STABILITY OF OUR INTERNAL HISTORIES

SOME METHODS FOR ACCESSING THE CONTENTS OF THE MIND

When something occurs, does the event create a single (unique) representation in our memory? Contemporary cognitive psychologists argue against such an idea. They believe that propositions (or fundamental memory units) are stored in memory together with some organizing algorithms. From these elements a new creation, an abstraction, a new representation of the original memory, is reconstructively derived on each recall occasion. Thus, we can see that not only is memory a chimera, a creature of many aspects, but like the phoenix it arises anew from its propositional ashes at each recall.

How stable are our internal histories? How alike are our chimeric phoenixes? Or, less poetically, what variables control the reconstructions we obtain? Among other variables, the *kind of interrogation* may influence how general or specific the recall is, may control the extent to which details are included or omitted, and indeed (as we shall see) may influence the content. Perhaps Daniel McCall⁷ did not go far enough when he suggested that “There will be as many histories as historians”; it is perhaps more accurate to suggest a unique history for every condition of recall.

To summarize: Memory’s contents are much more complex than any particular individual articulation of them; each verbal statement representing the contents or structure of memory requires a reconstructive process, and this process and its products are likely to differ from one occasion to the next. In the following pages, moving from unconstrained to con-

strained methods, I consider some effects of the way in which information is accessed.

Thoughts that come unbidden. Throughout my life I have noted delicate memory fragments that recur year after year—coming unbidden, sometimes when my “mind is silent” (this language is Esther Salaman’s⁸) but also occasionally as by-products of searches for other information. Some of these fragments are epigrammatic. They sometimes require interpretation, as might a proverb, and other times remain uninterpretable. Sometimes the crux of my relationship with a person spanning years or decades may be encapsulated in a series of such fragments. These epigrammatic “unbidden” memories are often more accessible when I “float about” in memories for individuals or themes than when I deliberately “search.” The items produced by this kind of reverie are strikingly different from those produced by deliberate searches. They are more fragmentary and less episodic. Their minimal overlap with standard listings underlines how sensitive our accessed memory contents are to the methods we employ.

Would these “tidbits” ever occur in a description given to an oral historian? Perhaps not. They are more like the memories elicited by a psychiatrist. Perhaps they are too personal, too homey, too epigrammatic, and too rambling to be shared except under special circumstances. Because they are unorganized, they are poorly tied to or interconnected with other memories. If an omniscient interviewer asked why these details were not included in my accounts, I might truthfully respond, “They never occurred to me.” Salaman also suggests that they are associated with a “crystalline emotion,”⁹ and indeed some of mine are quite embarrassing. Even if the natural organization of the memory did not render this information unavailable to an orderly memory search, one’s internal editor might intervene to prevent the information from being reported to a questioner. These memories serve a function in our personal histories, but it is not clear how relevant these apparently disconnected bits are to a more general history.

Many oral historians, who know they may obtain new information if the narrator rambles on for a bit, have struggled with achieving a balance between the focus of the interview and the potential risk of losing fresh information if the meandering narrative is prematurely terminated. The risk of information being lost is perhaps greatest when the recall is of well-practiced information driven by a well-defined scheme. But musing over old memories is most often left to older individuals¹⁰ or younger ones in rare moments of repose. Most certainly musing or reverie are not ordinarily used by psychologist or historian to acquire information from memory. Aside from violating certain social expectations, these methods are quite slow and inefficient and have uncertain payoff.

Temporally cued free recall. To efficiently access specific classes of memories somewhat more structure is required. The most minimal prompt to memory is probably a temporal one. The broader the temporal range specified, the fewer constraints are placed on memory. In reminiscing among friends, we may dredge up “when I was a child . . .” memories. Mimicking this procedure experimentally, I have asked myself, for example: “Tell me everything you remember from 1976 or 1980,” and so on.

Given an appropriate date, precisely how does one find memories? One hops, skips, and jumps through memorial landmarks searching for one that coincides with some discernable date. I often do this by moving through what I have called “extendures,” easily referenced, longer, unified periods of my life.¹¹ Where was I working? Where was I living? Who were my significant others? I then move from these broad units to narrower ones. I can usually, with time and effort, develop a plausible set of activities to coincide with time periods (my choice of the word *plausible* rather than *accurate* is deliberate).

Note that this task is different from and somewhat easier than the converse task, recalling dates associated with events. On this point, Lang and Mercier comment, “Interviewers and narrators alike sometimes expect accurate recall of dates, but most people do not remember their lives in terms of calendar years or specific months. More often, people look at their lives with little or no sense of chronology and associate time—even the passage of time—primarily with memorable events.”¹²

While they are quite correct that oral history is not an appropriate method to establish chronology in history, some individuals do deal quite competently with dates. Moreover, virtually all individuals can improve their ability to date by searching for landmarks against which to place target memories.

A final comment on temporal cues: I have suggested that dates do not directly color or cue specific memory contents. Robinson, using recent months as cues, has shown that some months (for example, those associated with the beginning and end of school) are more effective as cues than others.¹³ Moreover, Robinson argues that the schema associated with each month vary and that quite different internal cues are elicited by specifying particular months. Thus, for months and probably for days of the week as well, time cues do provide significant information about activities that might have occurred.

A more exact specification—for example, cuing by topic—may dramatically change the memorial contents available from any period.

Categorical recall. How easily can we access our memories with temporal or categorical cues? I found a curious partial answer to this question when I analyzed a series of recall protocols¹⁴ in which I provided

a time cue and sought to list items from memory that were from one month to twelve years old. In the study that involved periods of less than one year, I *always* sought to recall items by using simple chronological searches. When longer delays were involved (for example, searches for material as old as twelve years), chronological searches were preferred only when information was recalled from recent periods. Specifically, for delays as long as thirty months I was able to quickly and accurately access a wide variety of information with no more than the month and the year as a cue. For periods longer than thirty months, I found no evidence of chronological searches. For longer delays I resorted to categorical searches (that is, I created or selected categories of events and then conducted my search for memories within them). The abrupt transition from chronological to categorical searches was puzzling. In an effort to understand whether this abrupt shift was optional, I attempted to chronologically access information from the longer periods. After repeated efforts it became clear that, at least for the conditions of the study, information from the longer periods was not available through a chronological search. Categorical cues were *required* to access information older than thirty months. You may understand this difference if you consider how you would describe today's activities: It is very easy to begin with, I got up, I ate breakfast; that is, it is easy to simply chain the events together. For all of us, after a day, a week, a month, or thirty months, we lose the chronology and are forced to rely on categorical searches.

Considerably greater constraints are imposed by the requirement to search memory within categories—broad or narrow. Thus, categorical recall is simpler than less constrained searches because it permits us to focus our internal gaze, and to limit our search. Although none of my own methods formally impose categorical limitations, my self-generated categories greatly simplify searches.

Considering the oral historian again, complex cues—combining temporal with categorical cues—may well be provided. What can one do with a topic and a time? “Tell me about desegregation activities in 1958,” for example, might provide the skeleton for an appropriate cue. It seems likely, moreover, that an implicit starting point with respect to locale (probably wherever you were at that time) may be imposed if a more explicit location is not; for example, “Tell me about desegregation activities in 1958 *in New Orleans*.”

Cued recall. The cues provided by the psychologist or historian to prompt target memories are likely to become increasingly more specific as an interview proceeds. It is likely that the completeness and exactness of recall is ultimately dependent on the specificity and aptness of the cues provided. Using a succession of cues may yield more information and would probably mimic natural usage more closely. Successive cuing

provides an analogue to a natural procedure that we all recognize. Skilled conversationalists, in attempting to renew a friend's old memories, may try successively more specific cues: "Do you remember when we . . . ?" "No." "Remember, we were rowing on the lead raft . . ." et cetera. Most natural searches yield some consensus between conversationalists, and these multiple cues are more effective than the original discrete ones in producing a match. The effectiveness of any particular class of cues probably depends on the target memory and the particular memorist.

Wagenaar, in a research design that replicates and extends my own autobiographical memory study, has recently examined the effectiveness of specific elements of a memory as cues.¹⁵ In particular he was concerned with people, action, place, or time as cues in eliciting memories. These he calls *who*, *what*, *where*, and *when*. Across his various events, Wagenaar sequentially presented his four cues in all possible twenty-four orders. Given any single cue or multiple cues, he therefore could determine the probability that the remaining target information was produced. He found that the differences produced by order of presentation were almost as large as those produced by retention period. A very powerful effect indeed! The most successful orders, those in which *what* was given first, followed by *when*, elicited approximately 60 percent correct responses. In the least successful orders—those in which *when* came first followed by *who* or *where*—fewer than 30 percent of the responses were correct.

Wagenaar also examined the efficacy of single cues. He found that *what* alone was very powerful and that *when* alone was almost useless. He ordered the cues in value: what, where, who, and when. Wagenaar argues quite reasonably that the uniqueness of the specific cues is the crucial factor. While some of the discrepancies between his results and my own are due to important methodological differences, those regarding the value of temporal cues may be due to individual differences.

Recognition. Recognition is almost always more accurate than recall when tests are done in the laboratory. It is not clear how fully this result extends to autobiography and history. Recognizing a picture or a word seen before is almost certainly very different from "recognizing" an event. One cannot show or "say" events or episodes. Any representation of events or episodes must be more abstract and symbolic than the event itself. In my autobiographical memory study I represented events with brief verbal descriptions that I had written. In a variation on this theme, several researchers have asked other individuals to record events for their subjects. People perform considerably less well when asked to recognize items created by someone else. Dealing appropriately with items generated by someone else is always problematic. Salaman comments interestingly on descriptions provided by others:

It has happened many times that as soon as I have told a memory to persons who have memories of the same period I am immediately asked if I remember other moments—things which they remember about me. I am often interested, amused and sometimes flattered, but when pressed to recognise the events I feel almost hostile. Other people's memories of us no more belong to us than their dreams of us.¹⁶

In the preceding material I have tried (using the metaphor of the chimeric phoenix) to suggest that our reconstructions from memory are potentially enormously diverse. And while we may create standard representations to instantiate past events, ordinarily our recall of past events is capable of endless variation depending on our motivations and procedures for reactivating the memories.

AFFECT

Other things being equal, is one more likely to remember events that are happy (or pleasant), or events that are sad (or unpleasant)? A variety of studies employing a range of materials and subjects have demonstrated that positive events or memories are better recalled than negative. The finding is so general that Matlin and Stang were able to title a book on the subject *The Pollyanna Principle*.¹⁷ Most research by cognitive psychologists has supported this result and it appears almost impervious to challenge. But how inconvenient such a conclusion is to the oral historian! Let us consider the nature of these results and their relevance for oral historians.

These studies consistently show that affect has a profound effect on recall¹⁸ but a lesser one (or perhaps none) on recognition. Specifically, one should be less likely to *recall* negative (or disturbing information) than positive information. Confirming these results, examination of my recall protocols indicates that negative events from my own life are largely omitted. Many negative events from the past were nevertheless instantly recognized, with good corroborative detail, in "recognition" sessions even when they fail to appear in general recall protocols. That is, I cannot (or do not) always access the negative information, but such information is available with a little prompting.

One explanation for the absence of negative items appearing in recall protocols is that negative items (for reasons discussed at length by Matlin and Stang) are less well imbedded in the underlying scheme of one's life. One may argue, for example, that an accident, hurt feelings, embarrassment may not be rehearsed as often or may not have consequences that assure they are unforgettable.

We must, however, reconcile with these findings the quite different results from well-known public events. Most general news events are not well remembered. But what about the public events that interface with our private lives? For example, it is likely that the best-remembered public events of the last fifty years are the bombing of Pearl Harbor and the assassination of John F. Kennedy.¹⁹ There are a number of explanations for the superior recallability of these events. First, it can be argued that these events are exceptionally emotional. A comparable personal event might be a death or disaster in one's own life. While such personal events are probably not forgotten, they rarely come within the psychologist's purview. Second, these events provided, and for many still provide "benchmarks"²⁰ in the lives of individuals who experienced them. And indeed, although public or news events are typically not well integrated into the schemata of our personal lives, for most individuals these classic items are closely tied to personal recollections. Almost all people, in response to inquiries about these crucial events, begin by personally locating themselves physically and psychologically with respect to the event. Perhaps this integration occurs because of the very human tendency to move oneself to the center of important action (this is poignantly illustrated by Neisser in his description of John Dean's Watergate testimony).²¹ Perhaps these dramatically negative items are more heroic and hence are less susceptible to deletion than are the negative events in our own lives. Perhaps they are remembered because each changed our lives and the fate of the nation so completely. Perhaps dramatic negative events are more easily recalled because they receive greater media coverage (and concomitant rehearsal), or because one is not remembering a single event but a whole complex of events. Large configurations in memory are considerably more difficult to overlook than small events might be.

Need the oral historian be concerned that negatively toned events may be less accessible to the narrator than other events? Although not all the evidence is in, it seems likely that the principles governing recall of negative public events may be very different from those psychologists have discovered govern recall of negative personal events and that one must consider the balance struck in the event between personal and public memory elements.

In a related inquiry, the oral historian may sometimes want to know how the narrator felt about some past event at the time of its occurrence. Affect is sufficiently complex that, with a single event, relatively positive affect may be accessed with one interrogation and relatively negative affect with another. Moreover, it is not unusual for reported affect to change *over time*,²² with the *current affect* of the narrator,²³ and possibly with the *specific cues* provided by the researcher.

I have argued that affect for past events is itself chimerical.²⁴ When an event occurs, individuals respond with a set of emotions (let us call these

the “original emotions”). Sometimes these emotions are simple, sometimes complex (for example, anger and fear may be combined). Over time, however, the internal historian conducts her business of summarizing, interpreting, and editing, and the events take on new or different meaning. Changes occur in our lives and as a result some event or person important to our lives a decade ago may be of diminished importance now. Most events become more neutral with the passage of time. Quite surprisingly, even strong positive or negative emotions are likely to become more neutral. The analogy that suggests itself to those of us who have just moved a household is that of unpacking boxes of goods we haven’t seen for months or years. It is not always clear why items were precious enough to be carefully wrapped and repeatedly moved. Many items (like our memories, perhaps) have lost their importance. It is a very rare event (often one of great emotional importance) that retains high affective levels over time. Perhaps the effect observed by statisticians—that extremely high test scores are usually not repeated—may be related to this effect. This phenomenon, the regression to the mean, is thought to occur because a very unusual combination of events is necessary to produce an outstanding score in the first place and this fortuitous combination is not likely to be reproduced on later occasions. (For example, you have studied carefully, you are well rested, et cetera.) Fortuitous changes in the remembered elements may change the extremity of emotion just as analogous changes affect test scores.

Although it happens less often, occasionally our memories become more affectively charged. An event that looks trivial when it occurs may be imbued with retroactive importance; it may take on significance that makes it extremely emotional. That is, as we continue to rewrite our own histories, some old events are rewritten in ways that we would not have guessed when they occurred.

Let me summarize the significance of these affective issues to the oral historian: (1) Although most positive events are better recalled than negative, the data are not all in. Additional research may be needed to determine whether public events may have a special status. Perhaps negative emotionality does *not* impair recall for public as it does private events; (2) Individuals’ assessment of emotionality for long-past events is not always reliable. As Lang and Mercier suggest: “There is often a shift in mood and emphasis in the narrator’s answers when questions stimulate a tug-of-war between long-term memory and subsequent feelings about an event.”²⁵ (3) And a final issue: high expressed emotionality does not assure high recall accuracy. It is well documented that many of the forces associated with emotional memories act to degrade them.

CHANGES THAT OCCUR IN MEMORY OVER TIME

I have considered changes in reported memory resulting from different interrogations of memory, and from the impact of emotions. I shall address one final issue: changes—either in the form of memory losses or other transformations—that take place in memory over time.

Ebbinghaus used nonsense syllables to demonstrate rapid loss from memory at first and slower loss later. Most syllables could not be remembered after hours or days. It is not clear how relevant this classic result is for the more meaningful materials and much longer delays of the oral historian. A result that is likely to have greater relevance emerged from my autobiographical memory research. I found that autobiographical events were lost at the almost linear rate of 6 percent a year after an initial year or so during which very little loss occurred. Researchers in two replications of this study suggest that information is lost even more rapidly (these differences are undoubtedly due both to individual and methodological differences). Indeed, the notion of continued loss at that rate does not bear too close scrutiny! However, it is evident to even casual introspection that some kinds of information are readily lost while others are more resilient.

It is difficult to assess how crucial this kind of loss might be for the oral historian's narrator. What kind of information is lost and what recalled? Let me shift the scene slightly and consider the kind of changes we believe may occur in memory. Cognitive psychologists have found it convenient to distinguish two kinds of information in memory: episodic and semantic knowledge. Although this distinction is flawed²⁶ we shall maintain it in this brief discussion. Episodic knowledge refers to memories that are "one of a kind," for example, a particular walk in the woods; while semantic knowledge refers to general memories, for example the general knowledge derived from those many walks in Burnham Beeches.

It seems to me that oral historians are, at different times, likely to be interested in either kind of memory. Moreover, different kinds of research problems require reliance upon different aspects of memory. The oral historian might, for example, be interested in the general working conditions in an industry forty years ago (semantic). He or she might equally well try to document a particular sequence of events at that time (episodic). It is here that I believe my work on maintenance of knowledge may ultimately provide some insights. Memory is chimerical—but its rule of transition is not mystical or magical.

Let me remind you of my study: for many years I have learned the names of plants (an orderly set of material, indeed much more orderly than the materials of the historian). Let me give you a specific item:

True forget-me-not
Myosotis scorpioides
Forget-me-not family (*Boraginaceae*)

These are, respectively, the common name, genus, and species, and in the final line, the English and Latin versions of the family name. These materials are memorized until they are probably more familiar to me than many events in my own life. Following this encoding, a period of time passes before recall is required, just as it does for natural memories. How does the memory perform after these delays when I see the unique cue—the picture of the plant?

What kind of errors occur? In the beginning, the highly familiar common names are easily recalled and the more difficult Latin names are rapidly forgotten and are rarely given correctly. Almost all the errors occur on these latter items. With repeated rehearsals, however, the family names become easier and easier to recall. Moreover, this is true both for the relatively easy English “forget-me-not,” and for the Latin *Boraginaceae*. At this point, as the family names are well fixed in memory, I begin to find errors predictable from what Rosch calls “family resemblances.”²⁷ If the flower “looks like a sunflower,” you call it a sunflower even if you have learned that it belongs to another family. At this point in the fermentation process, the individual’s general (or semantic) knowledge powerfully controls recall. Presumably such forces caused a friend to substitute my name for that of her real companion when many years later she described her activities at the time of J. F. Kennedy’s death.

My data suggest that virtually all errors in my “expert memory” involve substitution of highly probable and highly accessible family names into frames left vacant by failures to recall less frequent family names. Moreover, rare families and untypical members of more common families are usually the ones for which the substitutions occur. Children make the same kinds of mistakes as they learn language, at first using irregular words correctly (for example, “I made it”), and then beginning to make mistakes (“I maked it”) as they learn the rules of language, and ultimately coming to use the words in the standard adult way. To be explicit about my beliefs on natural memory, I believe that in ordinary recall common routines are substituted for less common ones, well-known individuals are substituted for less well-known ones, and that times migrate to make coherent stories. Information too complex or too unusual to be coded efficiently is deleted.

In this paper I have highlighted some areas in which the research of psychologists may articulate with the concerns of the oral historian. I have argued for the fluidity of memory, and while my suggestion of one memory for every recall condition is probably an exaggeration, a wide range of instantiations are deemed “satisfactory recall” both by the narrator and the oral historian.

Emotional fragments which comprise many of the pieces of the historical jigsaw provide many special problems in recall. Recall of how you “felt” about something in the past undergoes distortions as do other memories. Understanding the intersections of positive and negative with public and private events over very long periods of time provides a most interesting challenge to the combined talents of psychologists and oral historians.

Finally, I have hinted at ways in which semantic knowledge may govern production of memory errors. Highly probable terms appear to move from locations in one set of items into comparable locations (where less familiar material has been deleted) in other items. Through a combination of these mechanisms with many others that psychologists have studied and described, memories simplify themselves.

Memory’s face gradually changes and becomes—perhaps—history. To use Neuenschwander’s language as he describes the research of Bartlett, “The end product was not so much a distortion of the original as a simpler, more functional rendition.”²⁸ Or as Marc Bloch admonished, “Have patience. History is not yet what it ought to be.”²⁹

Notes

1. John Neuenschwander, “Remembrance of Things Past: Oral Historians and Long-Term Memory,” *Oral History Review* 6 (1978): 45-53.
2. *Ibid.*, 49.
3. Hermann Ebbinghaus, *Memory*, trans. Henry A. Ruger and Clara E. Bussenius (New York: Dover, 1964).
4. Marigold Linton, “Memory for Real-World Events,” in *Explorations in Cognition*, ed. Donald A. Norman and David E. Rumelhart (San Francisco: W. H. Freeman, 1975), 376-404; Marigold Linton, “Real-World Memory after Six Years: An In Vivo Study of Very Long-Term Memory,” in *Practical Aspects of Memory*, ed. M. M. Gruneberg, P. E. Morris, and R. N. Sykes (London: Academic Press, 1979), 69-76; Marigold Linton, “Transformations of Memory in Everyday Life,” in *Memory Observed: Remembering in Natural Contexts*, ed. Ulric Neisser (San Francisco: W. H. Freeman, 1982), 77-91.
5. Marigold Linton, “The Maintenance of Knowledge: Some Long-Term Specific and Generic Changes,” in *Practical Aspects of Memory: Current Research and Issues, Vol. I. Memory in Everyday Life*, ed. M. M. Gruneberg, P. E. Morris, and R. N. Sykes (New York: Wiley, 1988).
6. Marigold Linton, “Ways of Searching and the Contents of Memory” in *Autobiographical Memory*, ed. David C. Rubin (New York: Cambridge University Press, 1986), 50-67.
7. Alphine W. Jefferson, “Echoes from the South: The History and Methodology of the Duke University Oral History Program,” *Oral History Review* 12 (1984): 52.

8. Esther Salaman, *A Collection of Moments: A Study of Involuntary Memories* (London: Longman Group, 1970).
9. Ibid.
10. Ibid.
11. Linton, "Ways of Searching and the Contents of Memory."
12. William L. Lang and Laurie K. Mercier, "Getting It Down Right: Oral History's Reliability in Local History Research," *Oral History Review* 12 (1984): 81-99.
13. J. A. Robinson, "The Temporal Organization of Autobiographical Memory," in *Autobiographical Memory*, ed. Rubin, 159-80.
14. Linton, "Ways of Searching and the Contents of Memory."
15. Willem A. Wagenaar, "My Memory: A Study of Autobiographical Memory Over Six Years," *Cognitive Psychology* 18 (1986): 225-52.
16. Salaman, *A Collection of Moments*, 112.
17. Margaret W. Matlin and David J. Stang, *The Pollyanna Principle: Selectivity in Language, Memory and Thought* (Cambridge, Mass.: Schenkman, 1978).
18. G. H. Bower, "Mood and Memory," *American Psychologist* 36 (1981): 129-48.
19. R. Brown and J. Kulik, "Flashbulb Memories," *Cognition* 5 (1977): 73-79.
20. Ulric Neisser, "Snapshots or Benchmarks?," in *Memory Observed*, ed. Neisser, 43-48.
21. Ulric Neisser, "John Dean's Memory: A Case Study," *Cognition* 9 (1981): 1-22.
22. Linton, "Transformations of Memory in Everyday Life."
23. Bower, "Mood and Memory."
24. Linton, "Transformations of Memory in Everyday Life" and "Ways of Searching and the Contents of Memory."
25. Lang and Mercier, "Getting It Down Right," 95.
26. For example, see A. Richardson-Klavehn and R. A. Bjork, "Measures of Memory," *Annual Review of Psychology* 39 (1988): 475-543.
27. E. Rosch and C. B. Mervis, "Family Resemblances: Studies in the Internal Structure of Categories," *Cognitive Psychology* 7 (1975): 79-99.
28. Neuenschwander, "Remembrances of Things Past," 48.
29. Marc Bloch, *The Historian's Craft* (New York: Vintage Books, 1953), 67.

COMMENT

Kim Lacy Rogers is a professor of history at Dickinson College who has focused much of her work in oral history on the Civil Rights movement. Here she explores the potential for using the principles of memory theory described by Lin-

ton to understand the ways in which individuals find meaning in their life experiences.

In “Memory as Chimera: The Changing Face of Memory,” as in other published works, Marigold Linton discusses the different forms that memory takes in structure and organization, the different kinds of searches that individuals employ to retrieve specific memories, and the reliability of different kinds of memories.

I would like to discuss the relevance of Linton’s categories of memory to the oral historian’s work. As oral historians, we gather information from narrators about both objective events—moments in public, “official” history—and subjective events and perceptions—the personal interpretations of historical experience. Linton’s work in autobiographical memory has particular relevance for those of us who study individual lives and their autobiographical “reconstruction”—the retrospectively arranged patterns of coherence that all of us make into our life histories. These retrospective arrangements can and often do differ with the passage of time, and with the addition of new and sometimes radically discontinuous experience. We know that individuals who have survived natural disasters, wars, or harrowing personal experiences often find their lives redirected or “changed utterly” by the extremities of emotional experience associated with dislocation and trauma. Linton’s work suggests a structure or schema with which we might attempt to understand the connections between continuity and discontinuity in personal and collective life, and the retrospective rearrangement of “benchmark” or “symbolic” experiences as lives change.¹

First, Linton distinguishes episodic memory from semantic (or general) knowledge memory. In a 1982 article, she writes, “increased experience with any particular event class increases semantic . . . knowledge about the event and its context. Increased experience with similar events, however, makes specific episodic knowledge increasingly confusable, and ultimately episodes cannot be distinguished.”² This can explain the inability of narrators to “get” dates and events right, while they retain broad general knowledge of historical transformation or of a specific culture. Thus, the episodic memories, though building blocks of the larger semantic structures, are often lost, or confused by repetition, while a richly textured “knowledge” memory remains.

Oral historians who work with manuscript collections and documents as well as with oral testimony are in a more advantaged position when interviewing narrators than are those interviewers who do not possess this documentary backup. With an adequate evidentiary base, it is often possible to obtain the episodic structures of the semantic knowledge and to ask

a narrator specific “cued” questions directed toward the specifics of time and incident that might otherwise remain “lost” within memory. Linton suggests that “multiple cues” are “more effective than discrete ones” in producing a recall from a narrator. Thus, an interviewer with good historical knowledge, and perhaps employing a two-question format, would almost certainly be more successful than a questioner who did not approach a narrator with careful research and a biographically grounded format.³

Linton also suggests that memories change with the contemporary emotion experienced by the individual: “Positive events or memories are better recalled than negative.” This finding is “so pervasive” that Matlin and Stang labeled it a “Pollyanna Principle.” Linton points out that while the “forgetting” of the negative seems to be a common human response to pain, “it is a very rare event (often one of great emotional importance) that retains high effective levels over time.”

This is an interesting finding, given the numbers of oral historians who have interviewed and studied individuals who have experienced extreme discontinuities in their lives, and often strongly negative experiences that came to assume a symbolic importance in their autobiographical narratives. I am thinking here of the oral narratives of two civil rights lawyers I interviewed in 1978 and 1979. A black lawyer had dated his disillusionment with the integrationist aims of black intellectuals to a realization that all of the civil rights organizations were white-controlled. White domination of a black liberation movement made him question the goals and aims of moderate black elites and to embrace Muslim nationalism as an ideological solution to black oppression.⁴ Similarly, a white lawyer had dated the “hardening” of his own attitudes toward segregationists to an evening in which he had given a speech to his civic group, explaining the unconstitutionality of Louisiana’s statutes of interposition. His friends and neighbors grew angry and walked out. Both men used these negative memories to mark a symbolic change and transformation of their lives, of forcing new decisions and allegiances. Their identities as activists were, in part, created by those negative events that each remembered in later years.⁵

The retention of negative events in these two oral narratives raises questions about the relation of semantic memory to episodic and the role of the negative event in provoking or determining personal growth and development. When *do* negative events become benchmarks of personal growth? Among civil rights activists, black and white leaders related numerous negative memories which were frequently paired with positive, self-affirming solutions to the problematic event. Is this dialectic of personal growth—one rooted in struggle—only the province of the political activist? Or is it a more common structure among individuals? And if, as Jerome Bruner has suggested, we project ourselves into the future through the self-concepts embedded in our life histories and autobiographical

memories, what kind of projection would be produced by a dialectic of negative event: positive resolution, pain and denial: personal growth?⁶

Linton has suggested that “strong positive or negative emotions are likely to become more neutral” with the passage of time and that “as we continue to rewrite our own histories, old events come to be rewritten in ways that we would not have guessed at the time of their occurrence.” Oral historians who are sensitive to changes in individual psychology over the life span should find these statements intriguing. We know that we progressively reconstruct our lives as we add new experiences, whether they are transformative or not. However, are we as sensitive as we should be to the impact of a narrator’s age on his or her reconstruction of experience, history, and meaning? Esther Salaman has indicated that older women and men have a different sense of biographical recall than do younger autobiographers; particularly, older people often have more vivid “unbidden” memories of childhood and early years.⁷

If, as life-course scholars suggest, the years after age sixty are marked by reconciliation and acceptance, would not an older person demonstrate a more subdued emotional cast to a personal narrative than would a narrator interviewed at mid-life? How are we to assess the relative value, or weight, of conflict or discontinuity versus stability in shaping both a life and a historical interpretation of that life? If “individuals are more likely to remember information that is congruent or consistent with their own original mood,” might, then, the individual’s age—his or her stage in the life-course—determine in major ways the color, tone, feeling, and events of recollection? Might not individuals at mid-life be more restless, more conflict-oriented than older narrators, who might—in the process of introspection and reflection—offer a more reconciled view of their own lives and history? My interviews of 1978-1980 bore this out. Even when older activists had experienced disruptive episodes of conflict, each revealed a tendency to pair these episodes to a successful reconciliation with historical change, which signified—in personal and political terms—the adjustment of the larger political system to their own ideals and goals.⁸

Finally, Linton’s work raises questions about the relationship between semantic and episodic memory within the geography of autobiography. Knowing that we retrospectively recreate and reorder our biographies over time, and knowing that discontinuous experiences can change dramatically our interpretation of the shape and meaning of our lives, should we not expect the discontinuities of experience to be reflected in the retention of episodic memories within the general semantic memories that give us identity? In other words, could we not expect that discontinuous experiences might provoke a different geography of episodic memory for the autobiography—that within the same body of semantic memory, different life experiences would increase the contemporary salience of different episodic events, coloring them

differently, giving them different meaning over the course of life? And that, perhaps, over the life-course involved, the most interesting question might consider the relationships between the symbolic structures of episodic memory as they change over time: Do we remember different events as symbolic and important as our lives change? Is it possible to chart the geography of event and meaning in autobiographical narratives as individuals age, experience discontinuity, or stabilize their personal histories in a long process of reflection and reconciliation?

Notes

1. See Marigold Linton, "Transformations of Memory in Everyday Life," and Ulric Neisser, "Snapshots or Benchmarks?," in *Memory Observed: Remembering in Natural Contexts*, ed. Ulric Neisser (San Francisco: W. H. Freeman, 1982), 77-91, 43-48. See also Kim Lacy Rogers, "Memory, Struggle and Power: On Interviewing Political Activists," *Oral History Review* 15 (Spring 1987): 165-84.

2. Linton, "Transformations of Memory in Everyday Life."

3. Kim Lacy Rogers, "Biographical Reconstruction and the Interpretation of Civil Rights Activism," paper presented to the annual meeting of the Oral History Association, St. Paul, Minnesota, 16 October 1987. See also Charles T. Morrissey, "The Two-Sentence Format as Interviewing Technique in Oral History Fieldwork," *Oral History Review* 15 (Spring 1987): 43-54.

4. Kim Lacy Rogers, "'What We Say Together Is Important': Subculture, Socialization, and the Life-Course of Civil Rights Leaders" (unpublished mss.).

5. Kim Lacy Rogers, "Lawyers' Stories: White Attorneys and the Black Civil Rights Movement," paper presented to the Sixth International Oral History Conference, Oxford, Great Britain, 11-13 September 1987.

6. Rogers, "Biographical Reconstruction"; Jerome Bruner, "Life as Narrative," *Social Research* 54 (Spring 1987): 11-32.

7. Esther Salaman, "A Collection of Moments," in *Memory Observed*, ed. Neisser, 49-63.

8. Kim Lacy Rogers, "Organizational Experience and Personal Narrative: Stories of New Orleans' Civil Rights Leadership," *Oral History Review* 13 (1985): 23-54.