

Memory, Perception, and Second Language Learning

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Abstract

This paper is an attempt to bring together information from several areas, linguistics, cognitive psychology, and education, in order to show more clearly the place of memory within the process of second language learning. The underlying assumption herein is that memory, like other cognitive processes involving language and thought, is a constructive process in which the learner makes a whole of what he or she "remembers." It is urged that memory be viewed as an intangible system of organizing or structuring events as they are perceived, depending on the experience of the individual.

When memory is discussed within the context of second language learning, a host of other, related terms may also come to mind: chunk, short-term memory, drill, storage, habit. Second language teachers and learners alike have historically been concerned with memory, and, as the body of data in this areas grows and continues to interact with language learning methodology, this concern will not lessen. Nevertheless, concern implies neither lucidity nor comprehension. As persistent as the discussion is, both formally and informally, it seems that the general connections between memory and second language learning are not at all clear.

There have been a number of developments in some of the more recent methods which are, or could be, substantiated by research pertaining to the study of memory. Asher's Total Physical Response approach is rather heavily backed up by experimentation on short- and long-term memory for commands in a second language. Attempting to overcome "antisuggestive barriers," Lozanov's Suggestology implements classical music, among other activities, to induce within the student a state of "hypermnnesia," or heightened memory. And the teacher

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silence after introducing an item in the Silent Way could be considered a good example of reduction of retroactive interference in short-term retention.

Consider the possible misinterpretations which the classroom teacher could make of such seemingly clear correlations between memory and method. On one hand, playing music may help the students remember more, but on the other, silence is valuable also. If he or she commands the students to hop around the room, their retention and recognition rates may be enhanced, but they will be too excited to relax into the "concert-like pseudopassivity" of hypermnesia. If the teacher actually tried to integrate such a variety of ideas into a class, it is possible that he or she would end up with some hopelessly bizarre continuum of library-like silence at the first of the period, working on to musical pantomime in the middle, and finishing with the clamor of a square dance. And what if the teacher does not have the latitude, not to mention the motivation, to try any or all of these developments, none of which represents the full array of implications from research regarding the role of memory in second language learning. What if the teacher has no sound equipment and hates classical music, or has never seen anyone teach by the Silent Way, or thinks physically rigorous activity is better done in a gymnasium. Suppose, because of some curriculum, administrative policy, or other exigency, that the teacher is restricted to the use of a textbook. In a conventional situation he or she may take the view that theory, research, and methodology make nice reading, but that it would be more productive if someone would just come out and tell him or her how to get the students to remember what is in the book.

There is so much diverse information available about memory that many teachers, while essentially concerned with learning, regard such information as extraneous and avoid it, for the most part. They continue along with a particular text and a particular group of students; yet something in the back of their mind says, "The students need to remember. Do something about it." And directly or indirectly language teachers *do* do something about it. Give a language teacher a book and 20 students, and by the time they are on page 11 he or she will probably say, "Know pages 1 through 10 for the next test." To know those pages by heart will probably be the best thing, because both teachers and students know that such tests are rarely open-book. Since those pages (as opposed to what the students had for dinner last night) are the focus of the test, the more clearly students etch that information in their minds, the more access they will have to it when the book is taken away.

It is a vicious circle. The majority of second language teachers are constrained to using textbooks, giving tests, and assigning grades. Conversely, students are forced into the role of continually showing what they "know" (usually by

heart) of the second language, rather than what they can do with what they know. For an example, we might consider the foreigner who comes to Japan for some extended period. In many cases this person will start taking some Japanese lessons and will promptly discover that there is a system of counters in this language which is used in classifying certain types of objects which are counted (-*mai* for thin, flat objects; -*dai* for machines and vehicles; -*hon/-bon/-pon* for long and slender objects; etc.). This person may spend a week, a month, or several months learning these, and even though he or she has been saying "Pass the salt" in Japanese at lunch every day, he or she will not be considered to know Japanese yet because this counter system is not at his or her mental beck and call. Countless people who have studied and taught countless foreign languages have come to think this way. And the teacher, whether by internal or external exigencies, often serves as the agent of the process which fosters such thinking, the process of divorcing what the student must remember in the second language from what the student experiences in it.

So far it may appear that I am only interested in refuting any justification for second language teachers to cling to memory and its related processes as tenaciously as we do in our work. This is not my intention. It is undeniable that memory is an integral part of second language learning, regardless of how clearly we understand the corroborating evidence. The learner has this powerful system among the other parts of his or her mental apparatus, but we cannot be sure how much, or what parts of it, any particular method, technique, or exercise taps. What should we do? We can study language teaching methodology until we are blue in the face and arrive at no complete, single synthesis of memory and second language learning. We can read psychology books and find out about T-mazes, flatworms eating other flatworms, and Ebbinghaus learning 1200 lists of nonsense syllables in 1885. We can make unlimited attempts to gather up the loose ends.

What if language teachers were to reorient themselves and decide to view memory as an entity less tangible than anyone would already assert that it is, less tangible than place-holder zeros or decimal points. It is easy in such an area as this to become confused by all the small pieces of information available. It is no big jump from "storage" to the misconception of storing words, nor from "chunk" to chunks of the text. But an overall shift of attention to memory as a processor of experience which has no dimensions might rectify to a greater extent what we do when we teach a second language with what we would *like* to do when we teach a second language.

It was an article by Wallace Chafe entitled "Language and Memory" (1973) that influenced me toward such a position on memory. If I were to come into the room and tell you "I just had a car accident," you would, among other questions, ask me

when. If I said "Thirty minutes ago," our conversation would continue. But if I were to say, out of the blue, "Someone just knocked at the door," and you went to it and no one was there, and you said "When?" our conversation would not continue smoothly if I said "Thirty minutes ago." Chafe asserts that the word *just* in both initial statements signifies a span of time from months to seconds and indicates preoccupation with something that the speaker has perceived. The word is used to reflect a relative measure of time, experiential time, a length of time from the perception of an event until the utterance, which depends on how much that experience has preoccupied, or "bugged," the person who reports it. Chafe calls this *just* the explicit indicator of this phenomenon but says that a person can get the same response if he or she enters the room and says, "I had a CAR accident" (upper case letters indicating high intonation) with no temporal adverb. The person experiences something and later reports it. That the event has been remembered is not remarkable, but the question is, where has it been remembered from?

Chafe proposes that a large number of events which are remembered and reported in this way are remembered from neither short-term memory nor long-term memory. Operational definitions of short-term memory usually limit it to a span of time not greater than a few minutes, and long-term memory is characterized by much slower and more deliberate recall than in the situations described above. The remembering of such events, which "bug" us from the time we perceive them until we report them, is the result of what Chafe proposes to call "surface memory"; that is, a level of memory which would be based on the length of a speaker's preoccupation with certain experiences.

So here I have introduced you to yet another aspect of memory, only a few lines after having pushed toward a bigger picture of this convolution. The interesting thing is not that Chafe may have discovered another level of memory, but that innumerable experiments have shown that forgetting is regular and predictable, yet here is a type of remembering characterized by continuous retention in consciousness as a function of subjective time rather than chronological time. That this type of retention has escaped notice may be due in part to "the prejudices of modern psychology" (Chafe, 1973, p. 273). Typically subjects in memory experiments have been required to deal with nonsense syllables and word pairs, very atypical material that is not at all like the things people normally remember.

Whether surface memory has gone undiscovered or been ignored is not the point. The focus here is on the close connection between memory and experience, which is certainly inherent in Chafe's proposal. Actually, the viewpoint of memory as a processor of experience has been held by a variety of people who are not often read in connection with either psychology or language learning. Sartre writes in *Nausea*:

This is what I thought: for the most banal event to become an adventure, you must (and this is enough) begin to recount it. This is what fools people: a man is always a teller of tales, he lives surrounded by his stories and the stories of others, he sees everything that happens to him through them; and he tries to live his own life as if he were telling a story. (p. 39)

Sartre is not only saying that memory absorbs experience, he is saying that experience is not recognized as a part of reality until it has been restructured in such a manner. The reliving of an experience, for which memory is central, may be more comprehensible than the experience itself is.

Thought along these lines led Francois Gouin to develop the Series Method. Karl Diller (1978) devotes Chapter Six of *The Language Teaching Controversy* to a discussion of this method. Gouin had been a Latin teacher in France and decided to go to Hamburg to learn German. At that time he held the same viewpoint on language learning that many people still do, that the fastest way to learn a foreign language is to memorize words. When he got to Hamburg he immediately set to work and memorized the 248 irregular verbs he found in a German grammar book. However, he found that he could not yet understand German so he went to work again and memorized the 800 German roots. He did this in only 8 days, but again it was all for nothing, as he still could neither speak nor comprehend German. He continued his study in this way and after a time came to the last straw. "There still remained one last method," he wrote, "but one so strange, so extraordinary, so unusual--I might say, so heroic--that I hardly dared propose it to myself. This supreme means was to learn off the whole dictionary" (Gouin, cited in Diller, 1978, p. 56). He did just that. He learned the 30,000 words in his dictionary in 30 days. He then ventured out into German society full of confidence and the verdict was: "I understood not a word--not a single word! And I permit no one to doubt the sincerity of this statement" (Gouin, cited in Diller, 1978, p. 57).

Gouin went back to France shortly (he was suffering from eyestrain), and while he was there he began observing his three-year-old nephew, who had begun speaking French during Gouin's absence. The turning point in Gouin's thinking came about after his nephew had just visited a mill for the first time. While he was at the mill the child had been terrifically eager to see and hear everything he could. According to Gouin, the child came home, sat quietly for about half an hour, and then began to tell everyone in the household about the things he had seen and heard at the mill. He went through what had taken place there several times, his account varying slightly with each retelling; but the key thing Gouin noted was that each time the child would go "from fact to fact, from

phrase to phrase by the same familiar transition, 'and then... and then... and then,'" so that his reporting of the events was always in the same order. Having organized his concepts sequentially, Gouin's nephew had been able to remember a naturally ordered series of occurrences.

From this insight about his nephew, Gouin originated the Series Method. Here is a possible series which could be used in language learning.

I walk towards the door.
 I draw near the door.
 I draw nearer the door.
 I get to the door.
 I stop at the door.
 I stretch out my arm.
 I take hold of the handle.
 I turn the handle.
 I open the door.
 I pull the door.
 The door moves.
 The door turns on its hinges.
 The door turns and turns.
 I open the door wide.
 I let go the handle. (Gouin, cited in Diller, 1978, p. 59)

People can usually repeat this series word for word after seeing it once in their native language, and the implications for the naturalness of such a chain of statements are considerable.

Gouin intended to capture the entire experience of the student in the Series Method. He saw the organization of perceptions into concepts as the essential process for turning what the language student experiences into what he knows and remembers. A rather interesting point concerning the technical aspects of his method was that he did not ask students to memorize anything and gave no homework (Diller, 1978, p. 68). Indeed, experiences may be recounted, remembered, or forgotten, but the idea of memorizing one's own experiences is illogical: *I memorized my bath I took last night.

If a teacher were to adopt the idea of memory as a processor of experience, what would this change in the language learning situation? What does it entail to get students to experience the target language? I am not equipped with any list of techniques based on this point of view, but there are a few examples that might serve this discussion. Assume that a teacher has some required vocabulary (the curriculum, the administration, or some test requires it), but that the class is not a conversation class. One way of dealing with this would be to ask the students to pair any adjectives in the list or passage with any nouns that seemed appropriate.

This may not seem like much--in fact, it may not seem oriented towards remembering at all, but the fact that such a task lacks any overt sophistication to a teacher of the target language does not preclude its value to students. The task requires semantic processing and subsequent subjective organization by the students and vastly increases their ability to recognize the vocabulary involved. If you have to get people to remember words, it is advisable to forget (no pun intended) that part of it, and get them involved in some type of organization of those words. Our "slowest" students would like to be better organized, but too often they are required to memorize at the expense of organizing. It goes without saying that memory is involved in either task, but the activity with the similar name, memorizing, is ironically less efficient, in language learning at least.

Having students take 10 new vocabulary items and make a story which contains all of them can increase recognition substantially (Kintsch, 1977, p. 373) and broadens comprehension by providing the students with a relatively unconstrained conceptualization task. By subjectively organizing single words into higher order units the students provide themselves with progressively more elaborate frameworks for later recognition or recall. Asking students to indicate like or dislike for words or phrases in the target language, or asking them to find words that rhyme with other words, requires the students to make attempts to perceive the language in a variety of ways. And these activities need not be limited to vocabulary items. Gibson's Strip Story (Gibson, 1975) is one of many possible ways for students to go about arranging and rearranging bigger pieces of the language they are learning. A wide variety of the information which a second language learner needs to acquire in his general store of knowledge (syntactic-lexical, semantic, pragmatic, etc.) could be learned more efficiently if the emphasis were moved from remembering it to organizing it.

The mental activity of making bigger pieces from smaller pieces is natural and, to some extent, unavoidable, as is shown by the following reminiscences of Jean Piaget.

There is also the question of memories which depend on other people. For instance, one of my first memories would date, if it were true, from my second year. I can still see, most clearly, the following scene, in which I believed until I was about fifteen. I was sitting in my pram, which my nurse was pushing in the Champs Elysees, when a man tried to kidnap me. I was held in by the strap fastened round me while my nurse bravely tried to stand between me and the thief. She received various scratches, and I can still see vaguely those on her face. Then a crowd gathered, a policeman with a short cloak and a white baton came up, and the man took to his heels. I can still

see the whole scene, and can even place it near the tube station. When I was about fifteen, my parents received a letter from my former nurse saying that she had been converted to the Salvation Army. She wanted to confess her past faults, and in particular to return the watch she had been given as a reward on this occasion. She had made up the whole story, faking the scratches. I therefore must have heard, as a child, the account of this story, which my parents believed, and projected it into the past in the form of a visual memory, which was a memory of a memory, but false. Many real memories are doubtless of the same order. (Piaget, cited in Slobin, 1971, p. 109).

At least two points should be made about Piaget's reminiscences. First, though he remembered something which was not true, what he remembered could not be considered implausible. Almost all of what he remembered did exist--the nanny, the policeman, the crowd, the tube station--these were things he *had* seen as a child, though never in the configuration of the event he remembered. Second, Piaget states that he still carries a vivid visual memory of the incident. It would not be unreasonable to ask how he can recall a visual memory of something which was not actually perceived. Yet, if the truth be known, people have always done this sort of thing. A person reads a book and years later is sure he saw the movie, but did not in fact. Four witnesses of the same bank holdup describe the robber to the detective, who gathers a composite description of a short, bald, tall, fat man with red hair, between 25 and 60 years old. The point is that cognitive processes involving attention, perception, and memory are not passive; they are essentially constructive processes. We do not assume that children who put oversized eyelashes on tiny faces they are drawing have made an error. They put them there because they know they are there.

In an interesting discussion of what people see and what people *think* they see, Neisser (1967, p. 95) states that "*the mechanisms of visual imagination are continuous with those of visual perception--a fact which strongly implies that all perceiving is a constructive process*" (Neisser's italics). This has been shown in various experiments wherein subjects shown all of some object and subjects shown part or none of the object have performed equally well in location or reconstruction tasks involving that object. Those who were not shown the object or not shown the complete object must have constructed something which they could later rely on by mechanisms of visual imagination.

This idea is not new. It can be clearly identified in the work of William James and others. Yet, in language teaching, having so often seen the work to be done as consisting of four skills, two of production and two of reception, we may have attributed some psychological validity to a dichotomy

that may not exist at all. Regarding cognitive processes as constructive acts can provide a language teacher with more insight into the ways certain aspects of language learning, in the language and in the student, are related to each other. This concept explains, in part, why students can talk for 30 minutes about textbook illustrations which have not been rendered or photographed, but are only meager line drawings. It also explains the captivation of the Cuisenaire rods. More generally, it precludes the idea that the teacher must introduce each and every well-analyzed piece of the target language in the "right" order, acting as some kind of scrupulous filter for the precise type of language with which to fill up the student.

SUMMARY

Actually, whether in language learning situations or not, people do not seem to be nearly the copying animals they are often thought to be. You no doubt have some comprehension of this paper, but how many of the sentences do you remember word for word? Memorization is often an unnecessary chore that disturbs learning. Interpretation, on the other hand, is a natural basis for dealing with experiences. Cognitive processes organize what we perceive and know and remember, and there is an inescapable relativity to the experiencer in the system. Often this organizational process is so active that the mind can second-guess perceptions. We look through a fence-hole and need to see little more than an ear or a tail to know that we are looking at a cat and not an elephant.

Some recent techniques and methods in language teaching have emphasized the fact that students can and do do many things before they ever arrive in the language classroom. In day-to-day living, each person experiences a myriad of perceptions and events, so why should all this constructive activity stop when one reaches the classroom? Likewise, people remember large amounts of information from daily life, not because of any intrinsic value or enjoyment in remembering, but because that which we process by remembering or other cognitive acts *fits*--it has some relevance to what we have done or will do. The closeness of what we do to what we learn is another tenet of current language teaching, but has been evident in worthwhile education long before now.

The point of this paper is that if we stop looking on memory as a box for parking information, we will be less confused about seeming conflicts in method and technique. Instead of viewing available ideas as so many mutually exclusive alternatives, we can see them as schemes which ask the student to perceive and organize the language, which must involve memory. Moreover, if we can bring to the classroom some portion of the various occurrences which involve the student

outside the classroom, students will have more chances to relate their perception of the target language to who they are. Such an integration of the students with the learning activity will almost never be served by memorization. Regardless of how obvious it may seem, memorization is neither the simplest nor the soundest way of dealing with the complexities of human learning.

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