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Taking Stock: What Do We Know About Second Language Acquisition?

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In the past fifteen or so years, there has been a lot of interest in studying the phenomenon of second language learning. It has been studied from many different angles: researchers have investigated the processes and procedures involved in learning, the sequential development of forms and structures, the influence of prior linguistic knowledge, the role of input, the influence of social and affective variables, age differences, individual differences, cultural differences, and a host of other factors that figure in second language learning. I myself have been engaged in studying the social and cognitive processes involved in acquisition, and in identifying some of the factors that produce the variability we find among individuals in the ability to learn second languages. Over the past five or six years, I have conducted several large scale studies in which my colleagues and I have examined the influence of linguistic, instructional, situational and learner variables on second language learning in over two hundred children between ages 5 and 11.

While doing these studies, I focused my attention on the specific variables we were examining, and had little time to think about the larger picture. Now that these studies are largely done, I have begun to take stock. What have we learned? How does it fit with the research findings that have come from the work of others? What do I think I now understand about the process by which people learn second languages? I have not been alone in asking questions like these. A couple of years ago I learned that Merrill Swain, who has been heavily engaged in studies of second language learning in Canada, has been asking the same kinds of questions. Since then, we have had many conversations on these issues with one another, and with other researchers. We didn't have anything very specific in mind when we began our discussions. We simply wanted to compare notes on what we thought we had learned from our own research with what others had learned from theirs. In the end, we arrived at a fairly reasonable formulation of what we think is involved in second language acquisition. I would like to present that formulation for your consideration. The view I present comes from observations of people learning second languages in diverse settings, and are based on findings from many studies--ones that Merrill and I have done, and ones that other second language researchers have done over the past decade and a half.[1]

Actually what I will be describing is a model of sorts. It allows us to identify the critical components and processes in language acquisition; it allows us to account for age differences and individual differences, and it even helps explain why, in some situations people fail to learn second languages.

Let me tell you what appears to be involved in language acquisition by describing its components and processes. The model is a complex one, and it is a little hard to talk about in purely abstract terms. At any rate, it would easier to show how its pieces fit together if they are discussed in relation to situations that are familiar to all of us. Since language
learning is done by people, and it takes place in social settings, let us consider what language learning involves for some learners. For discussion sake, why don't we take as our learners the kind that are the most familiar to us?

Our learners are members of a family—an immigrant family that arrived in Provo in the spring, right after the snow had melted, and the sun was bringing the trees into full blossom. There was Father, Mother, Junior, who was 14 at the time, and 5 year old Sister. They didn't know anyone in Provo, but after a quick look around, they decided to settle there. (It was the sun and the blossoms that convinced them that they should stay. Actually, they had thought about Laie as an alternative, but they did not know what the climate was like in Hawaii, and they were not about to take a chance with anything as important as that. They had had enough of extreme climates back home, what with it being hot one season, cold the next.) Naturally, they were eager to get acquainted with people, and to become a part of their new community. They had a small problem, however—a problem which could hinder them in getting to know people quickly. They didn't speak English, and no one in Provo spoke Patagonian which was their language. If they were to take part in the life of the community, they would have to learn English. It was a necessity for every member of the family. Father needed to learn English because he wanted to get a job selling widgets. He was the top widget salesman in Patagonia—and he believed he could sell his way to the top in Provo too, once he knew enough English to pitch widgets. Mother knew she had to learn English too because she had to conduct the day to day business of the family—she had to deal with shopkeepers, neighbors, doctors, and her children's teachers. Besides, she hoped to get a parttime job to help make ends meet. All of this required a fair level of proficiency in the language. Junior knew he had to learn English—that is, if he was to learn anything at school; most of all, he wanted to get acquainted with his pubescent peers and to take part in the social life of Provo's young set. Sister—well, she could care less about learning English. She just wanted to play with other children. But since all of the likely prospects for playmates that she came across spoke English, she thought she ought to learn it too. In Sister's view, it was really not that big a deal.

So what we see shaping up are ideal conditions for language learning. That is, we have some potential ideal LANGUAGE LEARNERS—the first essential component in our proposed model of language learning. Each had a real need to learn a second language. The members of this family were motivated to learn English because they wanted to become a part of a community that spoke the language. These learners had a lot going for them; they didn't come to the task of learning a new language empty handed. They had a world of prior experience to guide them—they had social knowledge, language knowledge, and a lot of general knowledge about the world around them. They had things to talk about, they knew what kinds of things are called for in different social situations and settings. Because they already knew one language, they knew what people talk about. They had fairly good ideas about what they would have to learn to do and say in the new language. They knew they would have to learn the English equivalents for the many things they wanted to talk about, they knew they were going to have to figure out how to create
sentences, and they knew from personal experience that there are all kinds of things that polite Patagonians say to each other on special occasions, among them phrases such as "hello", "thank you", "you're welcome" and, "may all the warts on your nose be little ones". Naturally, they should look for ways to express the same sentiments in their new language.

And all of this was taking place in a community where the target language was spoken natively by most of the people who lived there. This is the ideal kind of SOCIAL SETTING -- the second essential component in this model of language learning. The specific social settings in which our learners came into contact with the new language were the work place, classroom, neighborhood, and playground. Those were the places in which they came into contact with people who spoke the language well enough to provide them with necessary input to the language -- these SPEAKERS OF THE TARGET LANGUAGE comprise the third essential component. If each of these components is ideal, then language learning is assured. Each of them can vary in a great many ways, however, and some of this variance can crucially affect the processes by which language learning takes place. I will illustrate this shortly, but let me tell you what happened to our language learning family so you won't be kept in suspense.

The members of the family were in an ideal situation to learn a second language. Each of them was motivated, and had a need to learn English. The members of the family were pleased to be where they were, and they were eager to get established socially. They were in an ideal setting for language learning, they were living a community where they were surrounded by speakers of the target language. Indeed, everything would have worked out perfectly if all that was necessary for language learning was motivation, need, and opportunity. But things turned out not to be so easy for the family--at least not for all four members of the family. Two of the members of the family have done very well indeed: they picked up the language in short order--after a couple of years they were speaking English well enough to get by, and now, after 5 years in Provo, they are quite fluent in the language. The other two have not done nearly as well--one of them can barely be understood even after 5 years. The other has found the whole experience to be altogether traumatic, and has had a lot of trouble learning English well enough to get where he hoped he would be by now. Now you must be thinking: I'll bet the parents did not do well, since age makes a big difference. The children no doubt picked up English quickly and easily, since children enjoy a special advantage in learning new languages. Adults have a much more difficult time because they lack the neural flexibility to pick up new languages easily, as we all know. Or you might be thinking: one of the two family members who did not do well was male--of course! Males are said to have a harder time learning new languages than females, so no doubt the two who did poorly were Father and Junior, while Mother and Sister were the ones who did well. Actually, things are not quite as simple as that. The two who did well in this little scenario, were Father and Sister. Mother and Junior did not do well at all.

I will now turn to the processes that are involved in language learning, and will try to show how variation in the various components of the model
affected the outcome of the processes for the four members of the family.

The model, as I said, has three critical components-- LEARNERS, SPEAKERS of the language to be learned, and a SOCIAL SETTING in which language learning takes place. Three types of processes figure in acquisition, each of them intricately connected with the others. The first can be described as SOCIAL, the second LINGUISTIC, and the third, COGNITIVE. By SOCIAL PROCESSES, I have in mind the steps by which the participants in the language learning situation, that is, both the learners and the speakers of the target language, create and shape a social setting in which communication by means of the target language is possible and desired. By LINGUISTIC PROCESSES I have in mind the ways in which assumptions held by the speakers of the target language predispose them to select, modify and support the linguistic data that get produced for the sake of the learner. On the learners' side there are assumptions about the way language works that enable them to interpret the linguistic data they have to work with. And by COGNITIVE PROCESSES, I have in mind the learners use of general cognitive abilities such as perception, memory, association, categorization, inference and the like, along with whatever cognitive abilities humans have that are specialized for learning language. I will characterize each set of processes for you.

Social processes figure in language learning in the following way. In order to acquire any language, learners must be engaged in some sort of social relationship with people who speak the language. Language cannot be learned --at least not by children-- in isolation. It takes at least two persons, someone who speaks the language to be learned, and someone who wants or needs to learn it. More realistically, it takes at least three persons including two who speak the language, since the learner needs evidence on how native speakers talk to each other as well as how they talk to learners. Social contacts between speakers and learners are necessary, since these give the learners opportunities to observe the language as it is used by its speakers in natural communication, these observations providing the learners with the data on which they are to base their learning of the new language. Learners have to participate in these interactions at some level, since the quality of their participation plays a crucial role in getting speakers to use the language in the special ways that make the speech they produce during contacts usable as language learning data. Social contact is necessary for language learning not only because it gives learners the opportunity to hear and use the target language, it also provides them with the need and motivation to learn it.

You will remember that Sister was not so concerned about learning English. She just wanted to be able to play with children her own age. And if she had to learn English to do it, she would do it. Children simply do not learn languages to broaden their minds or to "build character". Their reasons for learning languages are pragmatic ones: they do it so they can interact with people who speak the language, or because they want to understand what people are saying. All of this means that the social settings in which learning is to take place must be ones that allow learners to come into meaningful contact with speakers of the language. Those which promote frequent contacts are the best, especially if the contacts last long enough to give learners
ample opportunity to observe people using the language for a variety of communicative purposes. Those which also permit learners to engage in the frequent use of the language with speakers are even better.

**Linguistic processes** figure in language acquisition in several crucial ways. The first intersects with the social processes I have just described, and in a sense, involves linguistic processes principally when looked at from the perspective of the speakers of the target language as they interact with learners. I said that certain things have to happen when learners and speakers come into social contact, namely, they have to collaborate in creating situations in which learners have the opportunity to hear and observe the target language in use. Basically, what learners have to get out of these contacts is enough linguistic evidence to allow them to discover how the language works, and how people use it. The end product of the acquisition process is linguistic knowledge—the phonological, lexical, grammatical, pragmatic and sociolinguistic knowledge that eventually allows learners to speak and comprehend the new language in a full range of social and communicative situations. What it takes to acquire this kind of knowledge is exposure to linguistic data in the form of situationally anchored speech produced by speakers of the language in the context of social interaction which involves the learner in one way or another. These linguistic data, together with the supporting social context in which the data are anchored, constitute what researchers studying first and second language acquisition refer to as "input"—the materials on which learners can base their acquisition of the language.

Language produced by speakers in social contacts with learners can serve as input when it has been produced with the learners' special needs in mind. It is not ordinary language, but language which has been selected for content, modified in form, and in presentation. It tends to be structurally simpler, more redundant and repetitive, and as Mike Long (1981) has argued, it is characterized by greater structural regularity than is found in ordinary usage. Linguistic processes figure in the making of these adjustments in that people generally operate with some sort of theory of what their language is like, and have tacit notions of the kind of adjustments they would need to make for the benefit of anyone who doesn't know the language very well—say, when talking to babies, or to foreigners. The evidence which Charles Ferguson found of common baby-talk and foreigner talk features across languages suggests that these features may reflect fairly universal notions of what linguistic novices would find helpful (1977, 1975).

The modifications that speakers make in this kind of language are based partly on notions they have about what people who don't know the language well would find difficult to understand, and what they would find easy. Studies of the phenomenon of "foreign-talk" indicate that modifications made by speakers on the basis of a priori beliefs about the relative difficulty of linguistic forms are not always helpful to learners, and can, in fact mislead them as to what the target forms are like (Chaudron, 1983; Meisel, 1977). More useful accommodations are based on actual feedback provided by the learners as to whether or not they understand what is being said to them (Cross, 1978; Fillmore, 1985; Long, 1983; Long and Sato, 1983; Gass and
Varonis, 1985. When learners appear to understand, speakers can assume that the adjustments they are making are appropriate or even unnecessary. When they appear not to understand or to be having difficulty following what is said, then the speakers make adjustments in the form of what they are saying, or they do something else, verbally or otherwise, to allow the learners to figure out what is being communicated. In an important sense then, it can be seen that learners and speakers collaborate in producing the adjustments which benefit the learners.

It has been argued that the language that learners hear works as input when it is "comprehensible" in Steve Krashen's terminology. According to Krashen (1980, 1981), learners acquire language by having input available to them containing structures he characterizes as being "a bit above the learners' current level of competence"—that is, if the current level of competence is at "stage i", then structures which are "i plus 1". In Krashen's view, what is critical is that the input be comprehensible, that is, more or less transparent in meaning to the learners. Indeed, he argues that learners acquire language, not by focusing on the form of the input, or by analyzing it, but rather by finding or being given access to its meaning.

What Merrill and I have learned in our own observations of children learning second languages is that focus on form is precisely what learners have got to do at some level when they encounter input, and that comprehensibility is important at least in part because it enables learners to make necessary connections between form and function in the new language. In fact, speech which is altogether comprehensible seems to short circuit language learning since when the learners can understand what is being said effortlessly, they have no reason to pay attention to the language itself. Unless learners are actively involved in figuring out what is being said, they do not have any reason to attend to the linguistic forms of the messages addressed to them. Our observations indicate that as Krashen as argued, what seems to work for language learning is indeed speech which is more or less comprehensible by virtue of being used in ways that allow the learner to figure out what is being said. But, the best kind of input is language used in ways that call attention to the form of the message itself. We have found evidence children do pay attention to form, and have found that advances are made in language development precisely when learners appear to take notice of the structural characteristics of the language they are hearing and using.

In short then, we argue that language works as input when it is slightly above the heads of the learners, not structurally, but in meaning, so that learners have to stretch a bit to figure out what people are saying, and when the language is used in ways that call attention to form and structure. In addition, we would argue that learners play a key role in getting this kind of input by their own productive efforts (Swain, 1985). Their efforts at using the language not only gives them an opportunity to test what they think they have learned communicatively, it also tells the people they interact with how much linguistic adjustment they will have to make for their sake.

This leads to the second way in which linguistic processes appear to figure in language acquisition, this one intersecting with cognitive processes.
Looked at from the learners' perspective, the initial problem in language learning is to make sense of what people are saying in the new language. In part, this is achieved by paying close attention to what is going on while people are talking, and in assuming some kind of relationship between language and the events in which it occurs. Basically, the problem for the learner is to guess what people might be saying given the social situation at hand. This might seem like an impossible task, but second language learners have some special resources available to help them in this process. What they have going for them is a prior language, thus they have the means to make educated guesses as to what people might say in their L1 under similar situations. Because they already have a language, they know about linguistic categories such as lexical item, clause, and phrase. This awareness of grammatical form and structure will predispose them to look for equivalent properties in the new language data they have available to them.

Similarly, through the experiences they have had in their first language, learners are generally knowledgeable about the speech acts and functions that can be performed linguistically. They know about the uses of declarative and interrogative structures, about affirmation and negation, about expressions of certainty and uncertainty in speech, and the like. They have used, and therefore, are familiar with such forms for making requests, promises, denials, declarations, and questions. They know that one can ask questions, and that questions ordinarily require answers. They know that questions can serve as requests for information, as indirect requests for action, as greetings, and for a host of other communicative functions. This kind of prior linguistic knowledge and experience will lead second language learners to seek and to discover means for accomplishing the same functions in the new language. In other words, they are guided in their language learning efforts by what they know to be possible and useful from their knowledge of the first language. Thus, second language learners start out with a fairly good idea of what to look for in the new language. The assumption that forms will be found in the L2 which are functionally equivalent to L1 forms can lead learners to acquire them more efficiently than they might otherwise, since it's always easier to find things when you know what to look for. At the same time, however, it can also interfere with learning, since this assumption sometimes lead learners to draw largely unwarranted conclusions that L2 forms are functionally and structurally identical to L1 forms and usages. Nevertheless, the net result is positive. By applying the knowledge they have of what people are likely to say in various social situations to what they know are possible forms, patterns, and functions in language, learners are more or less able to give meaningful interpretations to the language they hear, and thus, to discover eventually the principles that govern the structure and use of the language itself.

So now I come to the third type of process in acquisition: those I describe as cognitive processes. In an important sense the cognitive processes in acquisition are the central ones. These involve the analytical procedures and operations that take place in the heads of learners and which ultimately result in the acquisition of the language. Let us be reminded of what the cognitive task involves. The primary linguistic data which learners have available to them as input for their analyses consist of speech samples
produced by speakers of the target language during social contacts in which the learners are themselves participants, as I have argued. Hence what the learners have to work with are observations of the social situations in which the language itself was produced, and streams of vocal sounds produced by human speakers according to complex and abstract systems of grammatical and social rules that systematically and symbolically link up sounds, meaning representations and communicative intentions. What they HAVE to do with these data is discover the system of rules the speakers of the language are following, synthesize this knowledge into a grammar, and then make it their own by internalizing it. That in capsule form is what the cognitive task is for any language learner.

Figuring out how the speakers of the target language are using the noises they produce to represent meaning is the first step. This involves discovering the principles by which segments of the speech produced by target language speakers relate to events, ideas, experiences, objects, and the other things that people are known to talk about. Discovering how the speech serving as input segments in the first place, that is, finding out where one thing begins and another ends, is critical to the procedure. Once the learners know what the pieces are, they can acquire knowledge of how they are used to represent meaning, and eventually, discover how such units can be assembled structurally to communicate more complex ideas and thoughts in the target language. Finally, the cognitive task involves figuring out the principles by which the speakers of the language use it to achieve their communicative goals and intentions: what kinds of things do the speakers of the language talk about, and what can they do with the language they speak? In doing this, learners apply a host of cognitive strategies and skills: they have to make use of associative skills, memory, social knowledge and inferential skills in trying to figure out what people are talking about. They use whatever analytical skills they have to figure out relationships between forms, functions and meanings. They have to make use of memory, pattern recognition, induction, categorization, generalization, inference and the like to figure out the structural principles by which the forms of the language can be combined, and meanings modified by changes and deletions.

The task as outlined here is both complex and enormous. Nevertheless, it's a task that can be handled by any and all ordinary humans, including the members of our immigrant family. According to the prevailing theory of language acquisition, the task is manageable because humans have a special cognitive capacity for learning language---one can even think about this capacity as as kind of cognitive mechanism, which some people refer to as the Language Acquisition Device. This Device, which is affectionately referred to as LAD, operates in a quite different way from ordinary cognitive processes. Its workings can not be observed; they can only be inferred from the fact that all ordinary children learn a first language, and that they appear to do it in ways that can not be explained by ordinary cognitive processes. One of the major arguments for the cognitive processes involved in acquisition being special ones is that many of the features of the grammar that learners eventually acquire can not simply be induced from the linguistic data that are available to them. In fact, the argument goes, it would be impossible to explain how children can arrive at structure as complex and subtle as found
in even the most ordinary run-of-the-mill competence grammars, based on the relatively meager structural evidence they are able to extract from the language spoken around them, unless we assume that a certain amount of that structure is already hardwired into the language learning mechanism children are born with. In this view of acquisition, what I have described as social and linguistic processes are regarded as incidental or peripheral phenomena. If they figure at all, they play only trivial roles; everything that is really important in language learning has to do with the working of LAD. Others have argued that no matter what other kind of information or help is available to learners, the primary data they have to work with are samples of speech consisting of phonological signals which are not cognitively penetrable—they are not tractable to ordinary cognitive manipulations or analytical procedures that are available to children. How, it has been asked, is it possible for children to discover the rules that figure in "parasitic gapping" as they eventually do, based solely on the speech spoken to them? The only explanation to people who hold this view is that such rules are already "known" to the acquisition device in some abstract sense, requiring only exposure to data in which such rules figure, to trigger their discovery.

That may well be the case in first language learning. Nearly everyone does in fact end up learning a first language, despite huge differences in general intellectual endowment and early language experiences, and no matter how difficult or complex the target language is, and indeed, if the language is English they even learn how to deal with sentences with parasitic gaps. No doubt there is more here than meets the eye, and while I am convinced that general cognitive abilities and strategies of the sort I have been talking about also play an important role in first language acquisition, specialized mechanisms are without question much more crucially involved.

What I think happens in second language acquisition, is that the degree of involvement of these two types of mechanisms may be reversed: While specialized language learning processes figure in an important way too, general cognitive processes are much more heavily involved. This, in fact, may be a crucial difference between first and second language learning. There are two kinds of evidence for believing that general cognitive abilities and strategies figure more heavily in the acquisition of languages after the first than do specialized abilities. One consists of observations of strategies that children appear to follow when they tackle a second language. The other relates to observations of individual variation in the learning of second languages. The kind of cognitive strategies and skills that I have been talking about—the ones we find learners applying in getting access to the language, in breaking it down into units, in figuring out its structural properties and in extracting its principles of usage are general cognitive mechanisms rather than specialized ones. The cognitive work learners engage in results in them figuring out and acquiring a lot of rules, principles, and patterns, etc. But such materials do not necessarily add up to a grammar. At some point, the knowledge which has been gained through the workings of general cognitive mechanisms has got to be consolidated,
assembled, in a manner of speaking, into a competence grammar. This, I would like to argue, is where the language specific cognitive mechanisms come into play; through these processes, what the learner has sorted out gets synthesized into a real competence grammar, and perhaps a lot of the details of the grammar get refined here as well; that's the work of LAD or whatever you want to call the innate language learning mechanism people have. This, I admit, is all very speculative: there is no way of proving this last part, or disproving it. We will just have to wait until the day when All is Revealed to know whether or not things really happen that way. Who knows? Maybe it's in this process that all the mysteries of the language get revealed. We know that at some point our learners will be able to handle, more or less painlessly, just about any English sentence anyone cares to spring on them—even those containing parasitic gaps that they might hear without recognizing. I have now described the various processes that I think are involved in language learning. Now let us consider how they work—or don't work in relation to variation in the components I mentioned earlier. Let's return the members of our immigrant family, now more or less settled in their new community. Junior and Sister are in school, and Mother and Father are at work. We will see how they are doing. The children, are in a sense, in a perfect social setting for language learning. Recall that learning is possible when learners come into contact with speakers of the target language in social situations where they can interact in some fashion. They find themselves in their respective classrooms surrounded by English speaking classmates, dealing with a live English speaking teacher.

In such a setting the social conditions for language learning outlined earlier are quite easily met. The learners are in constant social contact with speakers of the target language. The speakers, the teacher especially, but classmates as well, have ample reason to speak to the learners in this setting, and they are generally inclined to do so in a manner that takes into account the fact that the learners don't know the language. What the learners have to do then, is observe carefully what's going on in the classroom, listen to what people say, figure out what they are talking about, and how they are doing it. By doing these things they learn how to do what the speakers can do, so that eventually they can communicate with them in the target language. By making use of the general cognitive strategies and the social and linguistic knowledge that they have, they will be able to figure things out in short order. That's all there is to it.

But as I already told you, this worked for Sister, but not for Junior. To learn why not, we now turn to the question of variation in second language learning, since this is what can convince us that not only are the cognitive aspects of the process handled by the mechanisms just discussed in this paper, it also shows just how crucial are the roles played by the social and linguistic processes described earlier. One of the most striking differences between first and second language learning is in the relative amounts of individual variation that can be found among the two types of learners. Clearly there is variation to be found even among first language learners, and while the differences may not be great, children do vary in how quickly they acquire their primary language, and in how facile they become in their exercise of verbal skills. But the variation we find among first language
learners is still relatively minor compared to those we see in second language acquisition, even among relatively young children. Differences of up to 5 years can be found in the amount of time children take to get a working command of the new language. Learners differ enormously in how easily and completely they master the grammatical details and intricacies of a second language. Some are able to learn it as completely and well as they did their first language; others never totally master the forms or uses of the language.

I believe that a substantial portion of this variation is due precisely to the involvement of the kind of cognitive mechanisms that we have identified as ones that figure most heavily in second language learning. Individuals apparently do not vary in having an innate capacity to learn language; and if this mechanism is as heavily involved in the learning of second languages as it is in first languages, then we would not expect to find much difference in the amount of variation between the two. But, as I have tried to show, the kind of cognitive processes that are most critical in second language learning are the ones which relate to general cognitive abilities. We know that there are enormous differences across individuals in their endowments of this nature. I am not necessarily talking here about differences in those abilities that figure in general intelligence, but about those primarily that we have identified as figuring especially in language learning: verbal memory, auditory perception, pattern recognition, categorization, and so forth. Some of them (generalization and association, for example) are obviously associated with those abilities that are directly related to general intelligence, but most of the ones I mentioned are only incidentally related, I think. The point that I want to make here is that much of the variability found in second language learning can be traced to differences found among learners in the application of these general mechanisms and abilities that figure in language learning. Learners who have poor auditory memory will have a difficult time remembering the things they hear in a new language. If they can't remember what they hear, they will not find it easy to figure things out, or to use them. Those who are poor in auditory perception will have difficulty discriminating between the sounds of the new language, and hence will be poor in learning to make sense of what they hear, and at reproducing anything. Learners who are poor in pattern recognition will have a very difficult time seeing the patterns that they must eventually discover in the new language. But variation in language learning along the cognitive dimension are not just related to differences in learner endowments in cognitive abilities. They are also affected by other learner variables.

Age is an obvious one. Recent research has shown that older learners may be relatively better and quicker at learning certain aspects of second languages than younger learners because they have better developed learning strategies and cognitive abilities. However, this is clearly not true for all older learners. Personality is a type of variable that can interact with age and affect the cognitive processes involved in language learning.

Learning a new language involves the learner in dealing with an enormously complex cognitive task. Handling the various aspects of this task requires no small amount of cognitive flexibility on the part of the learner.
However, as we know, individuals differ considerably in personality related cognitive traits such as such as mental flexibility. Some individuals are quite rigid in their thinking and find it difficult to deal with multiple possibilities, or with things they cannot immediately understand. Unfortunately, there is a lot of that to deal with in the learning of a new language. The unwillingness or inability to accommodate new information or the unknown can make it extremely difficult for learners to handle many of the aspects of the task that we have outlined. Another personality or cognitive style characteristic that can greatly affect language learning has to do with risk taking. Language learning requires learners to apply inferential skills to figuring out what people are saying in the language, and how the language they hear relate to the social situations in which it is used. Some learners find it difficult to take the chances involved in acting upon the things they have learned through guessing, and in fact may be unwilling to risk much guessing at all. They find it hard to try out whatever knowledge they have gained of the new language by their observations because they are afraid of being wrong, or of appearing foolish. Or it might be that they are just unable to take the next step in language learning and draw generalizations from the relationships they do see, and to test them out. Whatever the problem, the cognitive processes that should be operating in acquisition don't function as they should for some learners and so they are not great language learners. At the same time, happy conjunctions of abilities and personality characteristics can result in super language learning in others.

And that may well explain why our brother and sister team differed so much in their language learning ability. If we observed the language learning behavior of these two, we would find, (just as I have for many many language learners I have studied) that rather substantial differences can be found in their cognitive and language learning behavior. Some of this relates to learning style differences, some to personality differences. The net effect, however, is that in some cases, it all adds up to easy language learning, while in others, enormous difficulty. Age might have been an important factor in Junior's case, of course. Adolescence is a time when certain personality characteristics are exacerbated. If an individual is at all inclined to be self-conscious, then it is going to be a major problem during the adolescent years since that is a time when virtually everyone is self-conscious about one thing or another.

Observations of variation in learners provide evidence of the way other types of processes figure in acquisition too. In fact, this is what convinces us that social and linguistic processes are also crucially involved in second language acquisition. Let's consider the way some of the ways in which social variables affect language learning by their influence on the social processes. Consider the effects of differences in the social situations in which learners are to acquire the new language. They can differ enormously in how much contact they provide with speakers, and hence, how much opportunity learners find in them to learn the language. Some settings provide learners with few opportunities to get close enough to speakers of the language to do them any good, or the kinds of contacts they get are inadequate for language learning purposes. They may be too brief, or
too infrequent, or too limiting in the kind of exchanges they allow. Situations can differ enormously in how much of the kind of input needed by learners they provide. If there are few speakers of the target language around, learners will not have adequate opportunities to come into contact with speakers. If the target language speakers are themselves imperfect speakers of the language, the kind of input they provide for learners may not be an adequate representation of what the learners ought to be aiming at. Such input data, which Selinker, Swain and Dumas (1975) have described and which has become known as "junky data", can result in learners acquiring a form of the language which differs substantially from the target. Situations for language learning can also differ considerably in the extent to learners themselves have to play a role in getting the kind of social contact needed for language learning, and in how great a role actual interaction between speakers and learners plays. We have always assumed that direct interaction between learners and speakers is necessary in order for language learning to take place. But in our research in classrooms, Merrill and I have seen how some learners can in fact pick up a language pretty much by observing their teachers and peers, and with very little engagement in direct interactions with them. In other situations we have seen that children who do not get into direct interactions with speakers have an enormous problem acquiring a second language. Is interaction necessary?

What I believe is this: what is necessary is that somehow learners have access to language which is appropriately modified for them, and which is used in ways that allow learners to discover its formal and pragmatic properties. Some settings--for example, classrooms where the language used by teachers meet these criteria provide enough such input so that more direct forms of interaction are not absolutely essential, at least for those learners who are motivated enough to learn the language, and attentive enough to benefit from what they get out of just being in the situation. In others, say in classrooms where the language which is used does not fit the criteria of input-hood that I have outlined, or in the playground, learners play a much greater role in initiating contacts with speakers, and in having sustained interactions with them. In such situations, learner variables such as personality and social skills can play a very substantial role in language learning. Those learners who find it easy or desirable to interact with speakers of the target language will get a lot more of the social contacts needed for language learning, than do those who are not as interested, or motivated, or are less able to manage the kinds of social contacts that are needed for language learning. Variables such as personality, social style, social competence, motivation and attitudes in both learners and speakers of the target language can affect language learning, in fact.

And therein can be found some clues as to why the two adult members of our immigrant family differed in their ability to learn the new language. Father was lucky. He got a job in the widget industry right away--not selling widgets, of course since he did not at that time speak English. Instead, he was placed on a widget repair crew with four of the nicest widget repairmen in the business. These guys took it upon themselves to help the new crew member learn the business right. They were patient, helpful, and wise. They demonstrated things for him, explained, drew diagrams, and they explained
some more. Best of all, they included him in everything. Father joined their bowling team, and even went to baseball games with them and joined them for their weekly pinochle games. And because of all this, and because he basically was a very observant and quick-witted guy--Father picked up English in short order.

But not mother. Although she tried hard to pick up English in short order: she took a part-time job as a short order cook in a cafeteria. Co-workers spoke English to her constantly on the job: "Ham on rye, heavy on the pickles" "Two over easy, side-a-toast" "BLT--hold the mayo!" She did learn some English in this way, but it really wasn't all that useful. And so she signed up for an ESL class at night school--twice a week she went, and she diligently practiced the sentences she was taught: "I am Mr. Smith. I am a teacher. I am not a doctor. Are you Mr. Smith? How are you." She met a lot of other ladies there who were also trying to learn English. She visited with them on the nights when there was no class in hopes of practicing English. But as none of them knew much more than she, the practice she got was not much like the English she was hoping to learn. They did talk a lot, however, and while it wasn't very good English, it was good company--and that counted for something.
REFERENCES


1. An earlier version of this paper was presented at the TESOL Conference by L. W. Fillmore and M. Swain (1984).