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Second Language Acquistion Digital Teaching Materials: Unit 7 Theories of Second Language Learning

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SECOND LANGUAGE ACQUISITION

UNIT #7: THEORIES OF SECOND LANGUGE LEARNING

7.1 WHAT WE'LL COVER IN THIS UNIT

This unit will outline several types of theories that are used to explain second language acquisition. We'll talk about older theories which are less likely to be relevant today, and then we will focus our attention on modern cognitive and sociocultural theories. When we think about our own language learning or that of our students or friends, we are often using a theory of language learning to explain what we see, even if we aren't aware of it. It's a goal of this unit to promote of various important theories which we can use in our lives as teaches and learners. In unit one the notion of a theory was introduced, and if you have any concerns about how useful a theory is, I'd invite you to review section 1.6. In the present unit we will cover the following:

—Older theories: behaviorism

—Innatist theories: universal grammar and Krashen

—Cognitive theories (please memorize this amount of money for a discussion on cognition later in the unit: 896,149,218,481,776 HUF)

—Sociocultural theories

7.2 OLDER THEORIES: BEHAVIORISM

In this series of lectures we've heard about behaviorism before, and we've seen how it is inadequate for explaining first language acquisition, and how the Contrastive Analysis Hypothesis, based on behaviorism, is also inadequate. Two important points need to be made here. First, today that behaviorism does not provide an adequate theory to account for second language acquisition, is not to say that the theory is invalid in general. Indeed, it is still a current theory, and much important research is done using it. Second, the theory remains quite present in the popular imagination – for example many people see

language as a set of habits, and error as "practicing bad habits" which must be extinguished — and for this reason it is worth challenging the theory. So here and in the coming chapters, this theory will still be discussed here and there.

VIDEO TASK: A REVIEW OF THE BEHAVIORIST THEORY OF SLA

Watch the following video which reviews the theory of behaviorism, how it is applied to SLA, and how this theory has been received. As you watch the video, keep in mind the following questions:

1. What's the theoretical foundation of behaviorism?

2. How was this applied to SLA?

3. How has this theory fared over the years?

4. Is it worthwhile applying behaviorist ideas to SLA at all?

Video on behaviorist theory and second language acquisition

https://www.youtube.com/watch?v=VvOIbDI2fro

Of special interest to us is the answer to question 4. Here we can see that while it might be quite reasonable to reject behaviorism as an overall theory to explain SLA, there are cases when a theory of habit formation and the spacing of repetitions might come in handy.

READING TASK: IS SLA BASED ON IMITATION?

Let's have another look at behaviorism and this time focus on the question of imitation. As we saw in the video, imitation and then reinforcement is a key to learning. While it is absolutely true that in order to learn language we must be exposed to examples of that language, the questions remains to what degree imitation is vital to language learning. How are these examples used, it simply imitation? Consider the following question and then read the text to see if you have answered the same way as the authors do:

Are languages learned mainly through imitation? If imitation plays a role, what is that role?

Are languages mainly learned through imitation?

It is difficult to find support for the argument that languages are learned mainly through imitation, because first and second language learners produce many novel sentences that they could not have heard before. These sentences are based on their developing understanding of how the language system works. This is evident in children's sentences such as 'I'm hiccing up and I can't stop', and 'It was upside down but I turned it upside right', and with second

language learners who say 'The cowboy rided into town', or 'The man that I spoke to him is angry'. These examples and many others provide evidence that language learners do more than internalize a large list of imitated and memorized sentences. They also identify patterns in the language and extend them to new contexts.

If we use a narrow definition of imitation (the immediate repetition of all or part of another speaker's utterance) we find that some children imitate a great deal as they acquire their first language. Even these children, however, do not imitate everything they hear. Instead, they selectively imitate certain words or structures that they are in the process of learning. Furthermore, children who do little overt imitation learn language as quickly and as well as those who imitate more. Thus, this type of imitation may be an individual learning strategy but it is not a universal characteristic of language learners.

Some second language learners also find it useful to imitate samples of the new language. Classroom researchers have observed students who repeat what they hear others say, and some advanced learners who are determined to improve their pronunciation find it helpful to spend time carefully listening to and imitating language in a language laboratory or tutorial. However, for beginning learners, the imitation and rote memorization that characterizes audiolingual approaches to language teaching is not effective if learners do not also use the sentences and phrases they are practicing in meaningful interaction. Learners need to do more than recite bits of accurate language in drills and dialogues.

Nevertheless, recent findings from corpus linguistics have provided a new appreciation for formulaic language use. We know from the discussion of usage-based theories discussed in Chapter 4 that a great deal of natural language use is predictable on the basis of the frequency with which words or phrases occur together. Learners create strong associations between language features that tend to occur together. Thus, language is partly learned in chunks larger than single words. However, this internalization of the input does not depend on the learner's imitation of all or part of another person's utterance in a rote-repetition fashion. It is the combined exposure to language features in the input and their use in meaningful exchanges that leads to learning.

—Lightbown and Spada 2013:169

Was your mind changed by what you read? Our authors make several important point here. First, they strongly reject this idea as learners, L1 and L2, create novel, but incorrect, sentences which they could not have heard. As we saw with question formation, these may be steps that learners must go through in order to eventually master questions. Next they point out that if we see imitation as simple repetition, then this does happen, but to varying degrees. In learning a second language this indeed may be useful, but that learning happens though meaningful language use. Finally, they point out that we indeed do learn groups of words together - formulas or collocations - and this may form a foundation of language learning, but this is not based on imitation of a speaker, but on the accumulations of many many instances of having experienced these groups of words in meaningful communication.

7.3 INNATIST THEORIES, UNIVERSAL GRAMMAR AND KRASHEN'S MONITOR MODEL

Innatist theories are based on the idea that we have an innate and specific "language acquisition device" - the LAD - as it was once called, and this is what drives language acquisition in our first language.

7.3.1 THE THEORY OF UNIVERSAL GRAMMAR

As was outlined in Unit 2, Chomsky proposed that child language learning is so successful due to Universal Grammar - essentially a set of principles and parameters which underly all languages and which we all possess - and "domain specific", that is specific to language, learning abilities. It's certainly worth hearing Noam Chomsky explain his own theory. He is probably the most famous linguist of all time, and has made enormous contributions to the field.

VIDEO TASK: NOAM CHOMSKY EXPLAINS HIS ON THEORY

What follows is a rather lengthy video, but it is worth hearing about the depth and scope of this theory.

1. What are the features of his theory?

2. What problem does his theory solve?

3. What alternatives to his theory are there?

4. Does he mention second language learning?

Video on Chomsky's theory of Universal Grammar

https://youtu.be/vbKO-9n5qmc

We have discussed the answers to questions 1 and 2 before, in the Unit 2 of this series. You may have been surprised to hear the answer to question 3: Chomsky says that we can believe in his theory, or engage in "magical thinking" about language acquisition. We will see alternative cognitive theories, though, which are not examples of magical thinking later in this current unit.

Concerning question number 4, Chomsky has had little to say about how this theories would apply to second language acquisition. Clearly, as we saw in Unit 4, after the critical period for language acquisition has passed, we most likely do not have access to the powerful knowledge or learning mechanisms that Chomsky is describing. Unfortunately, adult second language and child foreign language learning are not driven by the forces that Chomsky so passionately describes.

But, as Wolfgang Klein noted in 1986, even if it were true that adults had access to universal grammar and powerful learning mechanisms much would still need to be learned. Think about the implication of the following quote:

What if we do indeed have access to UG, what would be left to learn?

Evidence suggests that each newborn baby is capable of acquiring any human language. The obvious conclusion is that the innate structures of language must be common to all languages, and these constitute what Chomsky calls Universal Grammar. However, the specific features of each language (…) must be inferred from the data (…). These features cover:

–the entire vocabulary
–-the entire morphology
–the entire syntax (to the extent that it is treated in conventional descriptive grammar books)
–most of the phonology

—Klein 1986

What this means is that in any case we would need to have a theory of general language learning which could drive the learning of all of these elements of language, even if we had access to UG. The search for a general theory of learning which can encompass language learning is what we will be talking about concerning cognitive theories.

First, though, it is necessary to present Krashen's Monitor Model, which is a bridge between innatist and cognitive theories.

7.3.2 KASHEN'S MONITOR MODEL

Krashen's monitor model with its five hypotheses is quite well known and has been a popular guide for teachers throughout the world. This model of language learning takes a strong stand in linking adult second language acquisition to similar processes which guide child first language acquisition, and urges teachers to create an "input-rich" classroom where students can learn naturally through communication. The Monitor model is quite controversial, too, as it assumes that only learning - or acquisition - which happens in such an environment will lead to the development of true competence. Learning which involves thinking about grammar and "rules" and memorizing vocabulary will not result in the ability to actually use language.

Below is an in-depth lecture which will explore the five hypotheses. If you are unfamiliar with the hypotheses, or would like to brush up on them, listen to the lecture before going on to the next section. After that, we'll have a critical look at the theory, and see where it has led the field.

Lecture on Krashen's Monitor Model with it five hypotheses:

https://www.youtube.com/watch?v=vd0Lm7MZdjo

The most controversial of Krashen's hypotheses is the "acquisition/learning hypothesis" which claims that only L1A-like acquisition, and not learning will lead to skills in language use. For Krashen, learning

involves any conscious language learning that might happen in a traditional classroom. That is, this is a "no interface" theory which suggests that there is no interface between explicit learning and linguistic competence - the two systems will not meet. The problem with this, is of course that all of cognitive psychology supports the idea that explicit learning has a positive benefit. The question is, of course, whether implicit learning - learning without knowledge of what is being learned or that learning is happening – is possible.

The "natural order hypothesis" suggests that we have an "internal syllabus" which guides our language acquisition, and thus programmed grammar learning isn't necessary. While this is based on sound research concerning orders of acquisition, the results of those studies are greatly overgeneralized to all aspects of English grammar - and linguistic competence - and indeed to all other languages. This is highly problematic.

The "input hypothesis" is equally controversial in its claim that learning is mainly driven by "comprehensible input" which it roughly tuned to the learner's current level, but slightly different - the "i+1" level. The problem here is that it is difficult to figure what the i+1 level would be, and also difficult to support that learning through comprehension alone will ensure grammatical competence. Indeed, data from bilingual schools has shown that while input has a necessary and quite positive effect, there are elements of grammar which are not learnable by input alone.

Like many controversies, though, the debate that the monitor model has sparked thinking and research which is critical and which has led the field in a different direction. That is, it's the movement away from his theory and the reaction to it which has been more profitable than the theory itself. That can be seen by the current lines of research which, although they did not have their start with Krashen's theory, stand in clear contrast to it. Today, one of the most important areas of research deals with explicit and implicit learning, exploring the benefits of the former and existence of the latter - a seeming response to the acquisition/learning hypothesis. Furthermore work has been done on the natural orders in which grammatical systems are learned - such as question formation - and the way that explicit instruction can affect it, showing that some elements must be learned in order while others do not need to be. Finally, it has been impossible after the monitor model to ignore the role of input in second language acquisition, and a great amount of research has been done to look at how learning from input happens and how the input that a learner encounters drives the grammatical system.

7.3.3 THE FUNDAMENTAL DIFFERENCE HYPOTHESIS: A FINAL CRITIQUE OF INNATISM

More than two decades ago Robert Bly-Vroman asked the question: if child L1 acquisition can be characterized as nearly 100% successful, efficient and uniform, how can adult second language learning be characterized? He argues that adult second language learning can be characterized by a lack of success, and, in fact, general failure and much variation across individuals. He claims that while child L1A is driven by universal grammar and learning processes which are specifically dedicated to language, adult L2A is driven by existing knowledge of language through the L1 and general learning principles. Thus, adult L2A resembles the learning of a skill more than it resembles child first language acquisition. And, all of this is probably caused by changes which happen after the critical period.

Its implications of this view is that adult learners will depend more on explicit learning than their implicit learning abilities which may have sharply dropped off since passing out of the critical period. This is what

we would have expected after reading DeKeyser's critical period study which we saw in unit 5. Thus, as we move to talk about cognitive theories, it is important to keep in mind that explicit learning is going to be quite important in the foreign language classroom. The questions that will be critical for us to think about, though, is what the best type of explicit instruction is and in what context it should happen. Finally we can't leave behind the possibility that implicit learning processes are at work as well at some level, and the question of how explicit and implicit learning work together is an important one.

7.4 COGNITIVE THEORIES AND APPLICATIONS

Cognitive theories of second language acquisition are based on the idea that language learning can be accounted for by the same mechanisms that allow for general learning and skill acquisition. That is, no language-specific mechanisms are necessary for second language learning. There are many different theories and applications which can be closely related, though there are substantial debates and differences in the field.

7.4.1 INFORMATION PROCESSING AND THE NOTICING HYPOTHESIS

Information processing theories deal with how information – in this case language – is encountered, attended and stored in a developing linguistic system in the brain. This involves different processes and types of processing in order to develop the system responsible for automatized language use.

As an example of information processing, recall the amount of money that I asked you to memorize at the beginning of this unit. If you've forgotten it, briefly have a look at it again (it's in the "what we'll cover in this unit" section) and store it in memory.

One of the important points we'll see here is that how information is processed can have an effect on how it is stored in memory. So now recall that amount of money from the beginning and note how many digits you can remember.

Here's the number: 896,149,218,481,776 HUF. Most people can remember about seven digits, though people (average people) who go through intense training can learn to memorize more than 100. Think for a moment about the process that you went through to memorize the number. Did you try to simply repeat the number over and over? This way of "rehearsing" a number is how people in the old days used to remember phone numbers after they put the phonebook down and before they dialed the telephone. Using that method, you were probably not that successful. Probably you were not able to recall all of the digits unless you were able to see the patter in the numbers:

896 1492 1848 1776

That is, the arrival of Hungarians in the Carpathian Basin and Columbus's arrival in the New World, and the Hungarian revolution and the American revolution. Thus to remember the number you just needed to remember four historical dates, or two make it even clearer, two countries and two sets of events, all of which could be simply visualized, relying on long-term memory for the actual dates. So, using the brute force method of memorizing 15 digits in row was probably quite inefficient but connecting the numbers with areas of the world and events you already know.

This can be illustrated in the following diagram which shows the relationship between attention and memory.

A model of attention, noticing, working memory and long-term memory:

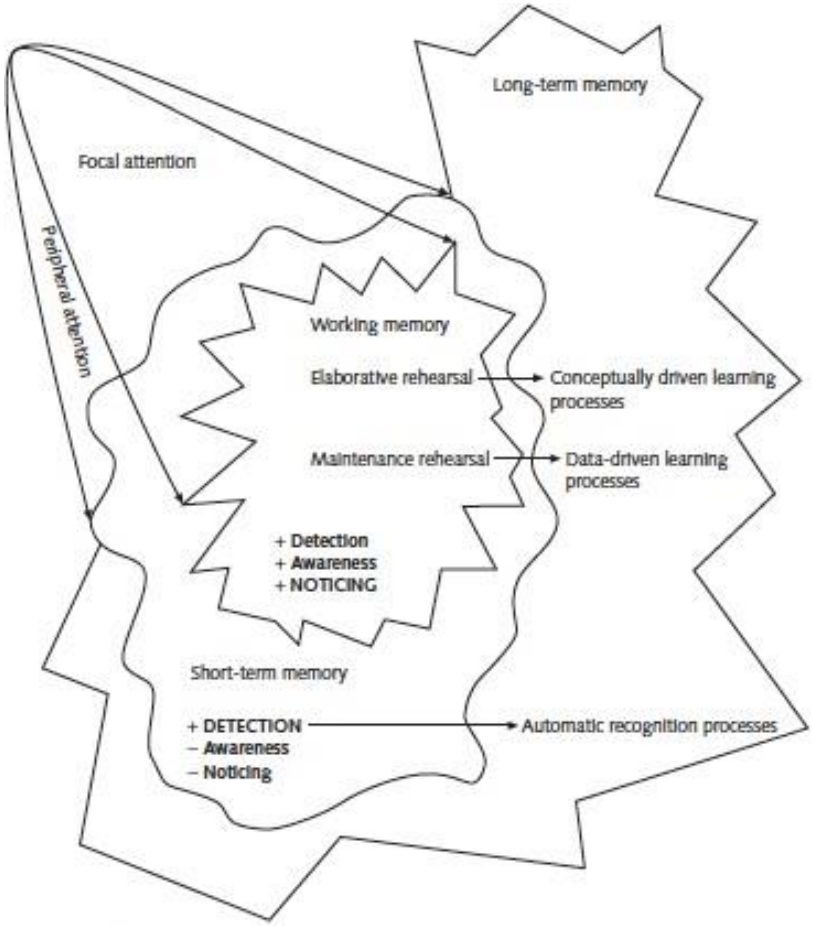

Figure 19.4 "Noticing" as selective focal attention and rehearsal in working memory: "detection" as recognition outside of awareness in passive short-term memory

—Robinson :655

Of interest to us is the center of the figure. Here we can see that something we have attended to and noticed is activated in working memory. A string of numbers can be repeated in working memory and kept in the phonological loop. If enough of this maintenance rehearsal is done, or if the event is experienced enough times, then the string of numbers, or string of words, may enter long-term memory. This is data-driven learning, where data is simply encountered in context. This was the naïve way of memorizing the number above. But, there is another method, which involves conceptually-driven learning. In this case, elaborative rehearsal is done where what is in the working memory is elaborated on and connected up with something already in long-term memory, in this case two countries and two events. This chunking of numbers and putting the information into a hierarchy allowed in this case for

more efficient memorizing. While this above model is not trying to account for all language learning, you can see how it might apply to vocabulary learning, where simply repeating pairs of words would be a substantially less efficient method or remember words than connecting up those words with your already existing system of word sounds, meanings, semantic categories, examples and visual data. Eventually, if the items are recalled enough times, recall and use might be automatized and effortless, but it might have begun with these connections between processing in working memory and movement to long-term memory.

Thus, so far we've already seen some key elements of cognitive theories at work: working memory, long-term memory, language processing, attention, noticing, and automatization. The example nicely illustrates how the type of processing one can engage in can lead to different outcomes in memory. It's important to note here that capacity for processing is limited, and controlled processes, like the making of connections between items, potentially takes up quite a bit of processing capacity. Without that capacity available, then more "expensive" processing like that will be limited. For example, if you were occupied with sounding out the words in a new alphabet, this may take away from your ability to process for meaning.

A further interesting observation can be made from the model and that is this importance of attention and noticing. This model relies heavily on language to be attended to and consciously noticed in order for learning to happen. The question of what can be and needs to be noticed also depends on the critical period: as we've seen earlier, adults will be much more likely to rely on these explicit processes. This necessity for noticing has been noted in the "noticing hypothesis" which, in its strongest form claims that there is no learning without noticing. Thus it is awareness and noticing which drives learning. As we will see later, one of the main roles of instruction may be making elements of language salient for learners, that is, helping them to notice the form and meaning connections which can be found in language.

7.4.2 USAGE-BASED THEORY

Usage-based theories suggest that the main driver of language learning is statistical regularities of language that are picked up through language use. These regularities might be simply word frequency or the frequency of two word collocations, with the more frequent words or collocations being more likely to be learned. This view also relies on "constructions" rather than language rules. Constructions are concrete form and meaning mappings, that is strings of words which have concrete grammatical meaning. They may be concrete words or phrases with variables where certain types of words can be used. The point is that it is through the regular experiencing of language – aided by explicit noticing – which moves learning ahead. We have heard about this in Unit 2 where we heard a bit about how usage-based theories can explain first language acquisition. Recall that this is a view of language which emphasizes words and their concrete realization in structures rather than a "grammar and dictionary" view of language where words and grammar are separate.

In the following video Adele Goldberg explains this theory in more detail. As you watch this short video, notice how her perspective is different than traditional views. She is describing first language acquisition, but the theory nicely applies so second language learning, too.

Adele Goldberg: constructions and a usage-based approach to language acquisition.

https://www.youtube.com/watch?v=FVuyhx2msTI

This view of language learning is quite different from traditional views in that, like other cognitive theories of language learning, it relies on general learning mechanisms for language learning. Furthermore, she also explains how grammar is really form and meaning pairings, or form and function pairing – which will be experienced through language use.

7.5 SOCIOCULTURAL THEORIES

Finally it is important that sociocultural theories are becoming increasingly important in second language acquisition. These theories emphasize that language is learned and certainly used with other people, and that the primary use of language is in communication with other people. Therefore, for these theorists, language is at once created and also learned socially through interaction and communication. This is particularly apparent the classroom where learners can co-construct meaningful language together. This will be discussed further in the next unit.

7.6 SUMMARY OF THIS UNIT

In this unit we've talked about various theories of second language acquisition, moving from traditional theories to current, cutting-edge theories of second language learning. Along the way, we learned that even though the behaviorist view is appealing, there is little evidence that it adequately explains second language learning. Similarly, we talked about Krashen's monitor model, and learned its limitations. We ended up by looking at modern cognitive theories, which are the most important in the field right now.

Click on the following link for a PowerPoint presentation to hear a summary and concluding remarks concerning unit 7.

Unit 7 summary and conclusions

7.7 KEY CONCEPTS DEVELOPED IN THIS UNIT

Formulaic language

The monitor model

The interface hypotheses

The fundamental difference hypothesis

Information processing

Conceptually-driven learning

Data-driven learning

Noticing

Automatization

Controlled and automatic processes

Usage-based theories

7.8 REFERENCES MENTIONED IN THIS UNIT.

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