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## Lessening fossilization in L2 acquisition : a matter of linguistic theory

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# Lessening Fossilization in L2 Acquisition: A Matter of Linguistic Theory

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## 1. A puzzling fact worth thinking about

The data to be discussed in this paper suggest the following: the more a language learner resorts to his declarative knowledge about the language when producing sentences, the more mistakes he makes. This runs contrary to common sense expectations. If a student thinks too much about the rules that he has learned in class, his fluency is expected to decrease, but the result should be much more accurate than if he does not check the construction against his explicit knowledge. However, our experiments with native speakers of Japanese learning Spanish indicate that both fluency *and* accuracy diminish at the intermediate-advanced level.<sup>1</sup>

Among the explanations that one can venture for this paradoxical fact, the most obvious one is that the explicit knowledge about the language that the students possess is based on confusing, if not wrong, facts, and therefore it acts as a hindrance rather than as an aid. This may shock some language teachers, but it does not surprise linguists who look at the grammatical explanations in L2 textbooks. The explanations consist of descriptions of the mapping between meaning and syntax that miss the true nature of the syntax/semantics interface. Lexical properties are mixed with grammatical notions in explanations of major linguistic systems like mood, aspect and the like. In contrast, the gram-

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<sup>1</sup> Up to that point, the progress seems quite smooth. Around the third year, however, a decrease in fluency and accuracy, avoidance of many constructions and transfer from his native language are evidenced. We will discuss this in upcoming sections.

matical knowledge of native speakers contains features that are not visible at the surface. What we see in a sentence is the result of many interactions between features and lexical items; the real truth of grammar lies behind. The task of the L2 learner is to approach the competence of the native by reaching the underlying properties of grammar, but the reverse engineering that he is forced to perform from the explicit explanations that teachers and textbooks provide is no trivial matter. The result is too much time spent at a task that is oftentimes unsuccessful.

## **2. Regression and fossilization**

Fossilization is one of the most unfortunate phenomena concerning the acquisition of a second language and one of the main distinguishing factors between native language acquisition and the attainment of a foreign language as an adult. Children are always successful at learning their mother tongue, but very few adults who have completed an advanced language course can boast about their L2 discourse sounding like that of a native.

Related to fossilization, although apparently unconnected, is a seldom explored topic in the SLA literature, but a phenomenon familiar to any learner of languages: the gap between comprehension and production that occurs when the learner enters the intermediate-advanced stage. At this level, the student is capable of understanding a great deal of the L2 discourse, but when asked to express some message, he struggles for the right morphemes. In other words, comprehension seems to occur independently of the grammatical details of the constructions, but when building a sentence, retrieving certain crucial features is unavoidable, and the learner's difficulties with this become manifest. We believe that this is a natural regression stage at which several features of the system are being reorganized by the learner (Sanz and Fukushima 2003, Sanz et al. 2005, 2007). But the question is: What are the features that the speaker struggles for in production that make him stagnate at the intermediate-advanced level?

This brief article discusses the comprehension-production gap in re-

lation to fossilization and in light of some of the data that we have collected in our laboratory for more than a decade about the process of acquisition of Spanish by native speakers of Japanese in an academic environment. The process of L2 acquisition differs somewhat depending on the L1 of the learner, and hence the features that tend to fossilize vary for each group of speakers. In a study of Japanese speakers learning Spanish in Spain, Fernández (1997) found that features such as the use of the articles, pronouns, prepositions and agreement fossilized in the discourse of these students, and verbal tenses also proved more difficult for this group of speakers than for the other three groups who were in the same classes and with whom they were being compared (German, Arabic and French speakers). The Japanese also needed one more year to achieve a similar level of production to the other three groups, and there was virtually no progress between the second and the third levels. The question for us is whether these fossilizable features are the same as those that cause problems during the comprehension-production gap.

The subjects in our experiments are students majoring in Spanish as their University degree at the Spanish Department of Kobe City University of Foreign Studies. We have collected data with a variety of techniques with the purpose of describing in detail the specific difficulties of these students and the steps that they follow while acquiring Spanish. The references in this article might seem to the reader overly self-centered, but this stems from the goal of the paper, which is to review the results of our research team and to try to put them into perspective with pedagogical issues in mind. Our hope is that University programs like ours, which seek to form professionals of languages, benefit from the discoveries that we have made about the acquisition process of Spanish.

### **3. Different types of grammatical features**

An important distinction to be drawn when discussing these matters is that between semantically-loaded features and purely structural fea-

tures (Sanz, Rodríguez & Ramírez 2007). Semantically-loaded features are morphemes that instantiate the mapping between syntax and semantics. They become visible through aspectual and modal suffixes, for instance. They interact with the lexical properties of verbs and therefore signal meaning in complex ways. If not properly used, they might cause problems of communication. They are developmental in the sense that a feature (say, aspect) is responsible for the behavior of a number of structures, and each time one of those structures appears in the input for the first time, the learner must reorganize his previous knowledge to accommodate the construction into the system. At each step of the way, the learner possesses only partial knowledge of the feature in question, since the complex web of connections between structures is only available at very advanced stages of the learning process.

In contrast, purely structural features (like gender agreement in Spanish, for instance) do not cause problems of communication when used erroneously, but errors of this type make the discourse sound foreign and unsophisticated and may make the speaker sound less advanced than he really is. Gender agreement is based on a dichotomy that holds little or no relation to semantics. Even if the referent is a sexed entity, the agreement operation consists of matching a noun with its adjective or an article with its noun, a purely syntactic operation, and not of making a semantic decision as to the gender of the words.

There are features that are a sort of mixed type, like number agreement within noun phrases, person and number agreement between subject and verb, and the use of a definite/indefinite article in Spanish or English, for instance. Although they have semantic import and may behave in a way similar to semantically-loaded features, they are properties of the structure of sentences that have more of a formal than of a semantic role, and therefore we will for the moment cluster them with the structural ones.

In sum, semantically-loaded features are the basis of the syntax/semantics interface, for which reason they must be accessed in order to produce a sentence. However, as stated above, some of the structural

features can be sacrificed in production in favor of fluency, without major disturbance for the contents of the message, but with painfully notable consequences for the aesthetics of it.

Spanish marks these two main types of features through overt morphemes in ways that differ ostensibly from the mechanisms available in Japanese. The students' Interlanguage evolves so that both types of features become progressively part of the competence of the learner. However, their divergent nature seems to result in different paths of learning. What we have observed in our data is that, in general, both types of features suffer from a regression stage during the third year of study in our Department, and both are therefore involved in the gap between comprehension and production and in the loss of fluency at this level; however, it is mainly the structural features that do not only not improve with time but show a progressive deterioration that even worsens after a stay in a Spanish-speaking country (Nishikawa, 2007)<sup>2</sup> In contrast with this, at least some of the developmental (*i.e.*, semantically-loaded) features that suffer during the regression stages improve somehow in the performance of the fourth year students in tasks that involve little self-monitoring, mostly in oral production (this improvement is less visible, however, in those tasks in which answers can be worked out on the basis of reasoning). This makes us speculate that these features can become part of the procedural knowledge of the students and do not necessarily fossilize.

To recapitulate, what our data point at is the fact that the regression stage that happens around the third year at our Department (Sanz & Fukushima 2003, Sanz, Civit & Rodríguez 2005, Sanz *et. al* 2005, Sanz, Rodríguez & Ramírez 2007) is caused, not surprisingly, by both semantically-loaded and structural features, but that distinct features follow different paths of evolution from then on. It seems like students end up sacrificing some of them for the sake of fluency when confronted

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<sup>2</sup> We consider the features fossilized by the time our fourth year students return from their stay abroad and their performance in production experiments stands at lower levels than those of their third-year classmates.

with demanding communication tasks. After a stage in which they struggle to juggle all the proper features in production (around the fifth semester of study for our students), they seem to focus on getting straight some of the semantically-loaded ones at the expense of the purely formal ones, which are the best candidates for fossilization, since they are not immediately needed to convey meaning. This tendency, unfortunately, will betray them for years to come as foreign-sounding and unsophisticated speakers of Spanish, and it seems more dramatic in students who have spent longer stays abroad. These learners, having been exposed to pressing demands to talk in Spanish, have attained a fluency and breadth of vocabulary that overshadows their incapacity to attach the right morphemes to verbs and adjectives or to produce noun phrases complete with their modifiers. Thus, the structural features, which do not bear semantic import and therefore could be assimilated by rote repetition and by extensive practice in a natural environment, are paradoxically the most fossilizable grammatical traits.

#### **4. Experimental data**

Previous research of ours has shown that third year Japanese University students learning Spanish perform worse than second year students in tasks that require the fine use of grammatical features, even though their compositions display a complexity that is lacking in second year students (Sanz & Fukushima 2003, Sanz *et al.* 2005)). When asked to produce orally, third year students show an inability to produce sentences containing aspectual features like the imperfect, the perfective copula *estar*, the event-related clitic *se*, articles (a mechanism to express specificity), verb conjugations and noun/adjective agreement, features that they were apparently capable of handling to a certain degree in their second year. Likewise, they show clear avoidance of the subjunctive. These seem to be the features that fall victim at the stage in which students enter the intermediate-advanced level. In their stead, students resort to Japanese grammar and their L2 production becomes more Japanese-sounding (Sanz, Civit & Rodríguez 2005).

Upon reflecting on these results, we posed the question of whether the features in question are indeed part of the competence of third-year students but there are some processing constraints that make them perform poorly in production. According to the model of acquisition known as *Processability Theory* (Pienemann 1984, 1998, see Cook 2001 and Saville-Troike 2006 for reviews), students learn in a sequence that reflects processing limitations. These authors claim that, from categorizing lexical items to operations involving complex sentences, students go through phases in which they become able to perform operations within phrasal boundaries and across phrases. Both aspectual and agreement features constitute examples of phrasal and cross-phrasal operations, but the puzzling fact is that our second-year students seem to be able to perform these operations, whereas our third-year ones show enormous difficulties. Nevertheless, the third-year students can generate complex sentences that are impossible or infrequent among second-year ones, and therefore it seems like they should have already mastered the operations at the phrasal level. In spite of their poor performance, it is difficult to believe that the competence of the third-year students is more meager than that of the lower level classes, unless we can prove that their knowledge includes the features and mechanisms needed for phrasal operations (*i.e.*, that they have already overcome the processing limitations of the previous stage), even though this is masked by some other factor that hinders production.

We speculated that, if these features are indeed part of the third-year students' procedural knowledge, activating them should be possible through some priming technique. Syntactic priming makes reference to the fact that you can activate (prime) a certain grammatical construction by exposing the subject to it. For instance, if a native speaker is exposed to the passive through several passive sentences and then is asked to describe a picture in which there is a transitive action, he will tend to describe the action as a passive instead of as the most common active form, the passive having been primed (activated). Our hypothesis was that, if we exposed our subjects to instances of the aspectual struc-

tures that we were interested in exploring (imperfect/preterit distinction, *ser/estar* contrast and use of the clitic *se*), the differences in performance between second and third year students should disappear. If both second and third year students behaved similarly after activation, we would conclude that the process of acquisition is following its due course but that other factors (to be explored) lie at the root of the regression stage. This would constitute good news, because it would mean that the regression phase could be overcome without too much difficulty, just like with children, who go through stages of uncertainty before fixing their grammar.

We designed a task to be carried out in pairs (Sanz, Rodríguez & Ramírez 2007). Student A had to read aloud a short text in which simple actions in the past in relation to a character, Ramón, were talked about. The text contained six instances of the preterit, six of the imperfect, three instances of the clitic *se* and one instance each of *ser* and *estar*. Student B had to listen and choose among eight pictures the three or four that matched the text. Then, Student A had to put down the piece of paper, look at the pictures and repeat the story as faithfully as he could remember it. Reading the text aloud was expected to activate the features to a point in which the differences between levels should be erased. Contrary to our expectations, the data showed that:

1. With regards to semantically-loaded morphemes, third-year students were able to reproduce fewer and less correct instances than their second year counterparts. Third-year students avoided using the past tenses 25% of the time, substituting the past for a verb in the present, whereas second-year students did this only 8% of the time, corroborating our previous findings that the avoidance of the past is larger among third-year students. The second-year students used the preterit correctly 61% of the time, *vs.* 45% among our third-year subjects. The imperfect also fared better among second-year students (25% *vs.* 19%). The copula *estar* was not used at all in the third-year group, where-

as second-year students used it correctly 13% of the time. Finally, definite articles were produced correctly 79% of the time by second-year subjects, and only 65% by third-year students.

2. With regards to structural morphemes, the stagnation is obvious: second-year students did not make virtually any mistakes in agreement, whereas 9% of the instances generated by third-year students were wrong.

In other words, even though we provided the students with a text with the features necessary to perform the production task, the more advanced ones still failed at it. At best, they were equally good than their second-year classmates, and more often than not, worse. Furthermore, the difference in fluency between the two groups of subjects was evident. Three measures (words per second, time to generate the verb and time to start a new sentence after the previous one had been finished) evidenced that most third-year students took pains to reproduce the simple text that they had been exposed to and that building sentences amounted to an almost strenuous effort.

There are two ways of interpreting the results. Either the knowledge of these aspectual features is definitely not part of the competence of our third-year students (hard to believe, as we said, since they can perform inter-clausal operations) or they are using a strategy (while reorganizing their system at that stage) that prevents them from accessing naturally their acquired knowledge and that increases the processing load. We believe that the latter is the case. Our third-year subjects seemed to be trying to create the story anew, by thinking about how to build the sentences, instead of just letting the text activate the constructions in their mind. They showed two particular places where their pauses were very long in comparison with second-year learners. One was before the verb. Occasionally, we even recorded some self-talk that showed that they were going through the memorized person paradigms in order to produce a verbal form. The other one was between sentences,

which seemed to indicate careful planning of the syntax of the sentence before starting its production. We took this to mean that, as students advance in their studies, the necessary reorganization of the system leaves them without a usable set of features, and they therefore experience a desperate attempt to resort to their declarative knowledge. As we will discuss later, the declarative knowledge being flawed is what leads to inaccuracy. To complete the picture of the process of acquisition, though, the next question to be asked was how smoothly learners enter the advanced level.

The next step was to look at the production of fourth-year students who had been in a Spanish-speaking country for more than three months, as they can be considered very advanced learners. As reported in Nishikawa (2007), these students continued to avoid the use of the past tense in a larger percentage than did their second-year counterparts, although to a lesser degree than that of the third-year ones (14% of the time), thus showing some improvement. All our fourth-year subjects used the present at some point. They tended to substitute the past for the present when Ramón's job was talked about and when it was stated that Ramón used the bus to go to work. These are strictly speaking not errors, since a function of the present is to talk about realities like profession and daily means of transportation to work, but in our text they were stated in the past and therefore we noted a tendency in the students to ignore what they read and just express the message as they saw fit (just like the third-year students). However, when they did use the past tenses, the accuracy in comparison with the third-year students was astonishingly high (95% of correct preterits *vs.* 45% among third-year students, and 82% of correct imperfects *vs.* 19% of the third-year students). Likewise, 83% of the subjects generated the copula *estar* correctly, in a stark contrast with the third year students, not even one of whom was able to do it. Thus, some improvement of the semantically-loaded features related to aspect was evident in the production of fourth-year students.

In contrast, their behavior with regards to structural features sur-

prised us. A cautionary note: agreement data must be looked at in connection with the fact that many articles were omitted. 44% of the students in their second year omitted articles (the total of omitted articles was of 26% of the obligatory ones), but 100% did in the third year, generating 36% of incorrect articles. Amazingly enough, among the fourth-year students, as many as 63% of the subjects omitted obligatory articles, with a total of 33% errors. Likewise, the number agreement showed a clear process of deterioration (it increased to 19% of incorrect instances *vs.* 8% among the third year students and 0% among the second-year group). Counting the generated articles and adjectives, gender agreement improved slightly to 13% of errors from 23% in the previous year, but this contrasted with a total absence of mistakes among the second-year students.

What seems to emerge from these data is the fact that, in oral production, the use of articles and features that are purely structural pose difficulties at very advanced levels of Spanish learning for Japanese speakers, whereas those that involve semantics suffer a regression and stagnation stage during the third year, followed by an improvement, even if it is only a slim one.

Written production seems to result in slightly different facts, however. As reported in Suzuki (2006), in an analysis of spontaneous emails and letters written in Spanish by our fourth-year students after studying abroad, the use of the past tenses was still problematic in these subjects' spontaneous written production. This corroborates the findings by Fernández (1997), and means that further research is needed to clarify the exact nature of the evolution of semantically-loaded features in our subjects, since, to make matters more complicated, subject variability is high. Furthermore, Suzuki also ran an experiment based on materials that Montrul & Slabakova (2002) designed to explore whether a deep comprehension of the imperfect/preterit distinction had been achieved by advanced students. The test consists of a survey on sentences containing imperfect and preterit forms, and the subjects need to judge whether the statements are logical or not. The following is an

example of the stimuli. (1a) is not a logical sentence, but (1b) is:

- (1) a. *Estuve todo el día en casa pero salí a pasear al parque*  
I was-PRET at home all day but I went-PRET out for a walk  
in the park
- b. *Estuve todo el día en casa pero no descansé bastante*  
I was-PRET at home all day but I did not rest-PRET enough

Suzuki (2006) divided fourth-year students into two groups. Group 1 had enjoyed a relatively long stay in a Spanish-speaking country, but Group 2 had only studied Spanish in Japan. The amount of correct responses was not significantly different: out of 54 questions, in 14 of them less than 60% of subjects in both groups gave the correct response. Of the rest, less than 80% gave the correct answer in 15 stimuli. Group 2 was more accurate than Group 1 in 21 stimuli. Thus, our fourth-year students, even those who have lived in a Spanish-speaking country, are still fighting to set the aspectual features in their competence.

Another pattern that emerges in the analysis of our data of the acquisition process of Spanish by native speakers of Japanese is that constructions that are related to one another linguistically are affected simultaneously in reorganization phases, as would be expected. Thus, we have found that problems with the imperfect consistently correlate with problems with the copula *estar* (Sanz, Rodríguez & Ramírez 2007). Furthermore, we have observed that progress in one construction is linked to progress in a related one. Hence, progress in relative clauses goes hand in hand with progress in completive clauses (Sanz, 2005). Both of these subordinate structures share a common feature, the complementizer *que* in Spanish, so they are expected to be acquired in relation to each other. In sum, an analysis of L2 acquisition mental processes corroborates the linguistic analysis that links two seemingly unconnected structures to the same feature or mechanism.

## **5. *Pseudosyntax* and the causes of regression and fossilization**

Regression stages are typical of both L1 and L2 acquisition processes. Oftentimes it is pointed out that children seem to master a feature of the grammar, only to produce at a later stage a form that contravenes the rule. The type of “errors” they make are not random, however, and indicate a progression towards the attainment of the rule, since they are the result of overapplying a regular pattern. This is often referred to as a U-shaped progression. In our previous research, we have preferred to call this a “spiral-shaped” progress, because the U-shape metaphor wrongly implies that: 1) the first time the learner gets the right form and the final correct production of the same form are equivalent, whereas it is usually accepted that the first time around the learner is using an unanalyzed form very different from the final product. And 2) that the learner is at the same place as he was when he was first able to produce the correct form. This is untrue, since the final form indicates a considerable progress in the attainment of the grammatical system. The spiral metaphor refers to the fact that there is a steady progression forwards, although accompanied by turns when a reorganization phase occurs. Once the student comes out of the regression, he is in a more advanced position than he was before. In any case, both L1 and L2 learners undergo these reorganization phases, as we have discussed before. But fossilization only affects L2 learners.

One of the most obvious places to look for explanations about fossilization in L2, although not the only one,<sup>3</sup> is the other major difference between the L1 and L2 acquisition processes: the presence or absence of negative evidence. Linguists since Chomsky (1957) have noted that the process of L1 acquisition occurs without negative evidence that would tell the children when his hypotheses have gone too far. This has been

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3 In the process of acquisition of L1, there is a silent period and a period of imitation of sounds that do not correspond to actual words which could be of enormous importance for the final success, and which is absent in L2 acquisition as an adult. This is another major difference between the two processes.

taken as evidence for a Universal Grammar device that gets tuned to certain parameters in due time (see Crain & Thornton 1998, for example, for a good review of the issue). In contrast, it is unavoidable that the process of L2 acquisition as an adult in an academic setting contains grammatical explanations, corrections and other forms of negative evidence. In fact, in spite of the debates about the merits of communicative approaches to language teaching, it is commonly assumed that some degree of attention to the grammar must take place in the classroom. For instance, the trend known as focus-on-form (Long & Robinson 1998) proposes that the students' attention should be called upon the grammatical features involved in structures while meaningful activities are being performed.<sup>4</sup> In any case, no matter what position one takes on the matter of explicit grammar teaching and correction, what remains is the fact that some features of language tend to fossilize in time and no amount of teaching and practice seems to take care of the problem, whereas children are pretty successful without explicit knowledge about grammar.

As we have seen in the previous sections, at the time of reorganization of the features, our students tend to stick to the explicit knowledge (*i.e.*, to the negative evidence) with which they have been provided. However, we believe that the problem is not in the presence of negative evidence *per se*, since this should only affect fluency, not accuracy. Clearly, the process of L2 acquisition is not and should not be the same as L1 learning, and given the right explicit knowledge, adults should be able to benefit from it. The problem is instead in the quality of that negative evidence. Bever et al. (1998) and Townsend & Bever (2001) introduced the term *pseudosyntax* to account for the process of sentence comprehension. *Pseudosyntax* refers to a rough mapping between syntactic phrases and their thematic role in a sentence, like pairing the first NP in a sentence to the agent role in English, for instance. These *pseudosyntactic* rules have their origin in heuristic strategies that speakers develop and

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<sup>4</sup> The role of attention in the learning process has been studied in Psycholinguistics. See Leow & Bowles (2005).

that stem from regular patterns of the language. According to these authors, the process of comprehending a sentence happens in two stages. In the first one, *pseudosyntax* is used to establish a rough idea about who is making what to whom in the sentence. This produces a simplified sentence structure, but at the same time, a syntactic structure complete with all features is being built. The speaker checks his roughly generated syntactic/semantic mapping (his *pseudosyntactic* structure) against this whole structure. If they coincide, the process has been successful. In a sense, what these researchers say is that, paradoxically, in order to achieve efficient and fast comprehension, we understand everything twice, the first time around with the help of *pseudosyntax*, not of real syntax.

I think that this concept is useful for us to understand the phenomena we observe in our L2 learners. *Pseudosyntax* is enough for a superficial level of comprehension, but a deep comprehension and a process of production depend on detailed features. The grammar that is taught in language lessons is sort of *pseudosyntactic*. For example, in order to explain the imperfective aspect in Spanish, textbooks state that this verbal form “expresses habits in the past”. The subjunctive mood is explained through statements like “it is used to express hypotheses”, etc. This is a rough mapping between syntax and semantics that refers to the final meaning of the sentence, but that overlooks that aspectual and modal features do not really “express” anything. They are functional mechanisms to link lexical pieces together, and the final meaning of the sentence (what the sentence “expresses”) is the result of many interactions between features and mechanisms like these. It is true that we tend to use these mechanisms when expressing those things, but the features themselves are not responsible for the meaning attributed to them. This rough mapping may be useful to introduce concepts like the imperfect or the subjunctive to a group of students who do not have them in their L1, but it is inaccurate and does not reflect what exactly grammatical aspect or modality are. Therefore, it can only take you so far, and when you need the fine features for production, it will even

become an obstacle.

To summarize, data like the ones we are presenting here bear on the issue of the interaction between explicit and implicit knowledge (Long & Robinson 1998, DeKeyser 2003, Doughty & Long 2003, and references therein) and on Vygotskian notions of the interaction between top-down and bottom-up knowledge (Vygotsky 1986, Negueruela & Lantolf 2006, Escandón 2007). Our results suggest that this flawed top-down knowledge in the form of “rules of thumb” that present the final meaning of constructions as the product of the direct mapping between their syntactic properties and their semantics, becomes an obstacle in the process of turning declarative knowledge into procedural knowledge as the student progresses. This results in inhibition of his production and avoidance of structures that he had been able to generate before. In what follows, we provide some evidence for this claim.

In Sanz & Civit 2007 and Sanz (in preparation), we show that the explicit knowledge that the students utilize at the regression-stagnation stage is not only partial, but erroneous, since it makes the learner confuse lexical with grammatical aspect. This leads students to make mistakes in the use of the past tenses in Spanish, but mainly in tasks in which they can monitor themselves extensively.

We used a test in which, for each verb, students had to choose between the two past tense forms (imperfect or preterit). The task was administered in two different ways: half of the subjects got it as a paper and pencil test, and the other half did the experiment in a computer. The latter half could not correct themselves or read the whole text. Once one answer was provided, the sentence disappeared and the next one appeared on the screen. The results showed that third-year students performed significantly worse than second-year ones, but only in the paper and pencil task, where they could review their explicit knowledge extensively. In the computerized version of the experiment, it became clear that the knowledge of the third-year students contained the distinction between the imperfect and the preterit, since they performed significantly better than their second-year classmates. This made us

conclude that, when allowed too much time for reasoning and self-monitoring, third-year students make more mistakes than less advanced ones, just as we saw in our syntactic priming experiment discussed above. Thus, access to their declarative knowledge works against them.

In particular, the types of errors that our subjects made proved that they had not assimilated the concept of grammatical aspect and that they were confusing grammatical and lexical aspect, just as the rules of thumb do.<sup>5</sup> For instance, students made many mistakes when a verb with atelic lexical aspect had to appear in the preterit form, and *vice versa*, when a verb with telic aspect was to be combined with the imperfect past tense. The final meaning of the sentence is affected not only by the aspectual feature that the verb takes (imperfect or preterit), but also by both the aspectual nature of the verb and the presence of adverbs. Therefore, the role of grammatical aspect is unclear when only the final meaning of the sentence is taken into account, and it is easy to confuse the use of the imperfect past form with the meaning of the verb itself. This is what *pseudosyntactic* rules do, and this is what our subjects do when they are in a position of having to cling to their explicit knowledge.

## **6. Are there any practical lessons that we can extract for teaching?**

The line of reasoning that we have followed in this paper is: there is a regression stage that causes a gap between comprehension and production. At this stage, a natural reorganization of features takes place. When this is occurring, the student uses *pseudosyntax* for rough comprehension but finds himself without workable knowledge of features for production (they are being reorganized) and therefore resorts more ostensibly to his other sources of knowledge: his declarative knowledge and his L1. But this is aggravated by the fact that the declarative

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<sup>5</sup> Lexical aspect refers to the action type of the verb. Stemming from Vendler (1967), four main types of verbs are distinguished according to their lexical aspectual properties: states, activities, accomplishments and achievements.

knowledge that they possess contains wrong descriptions: it does not reflect the true syntax/semantics interface but rather a simplified mapping between structure and meaning (*pseudosyntax*) that is insufficient. Therefore, features may not overcome the downturn and fossilize. In particular, the student gets tired of checking all the necessary features for the sentence against memorized paradigms and partial semantic truths, and ends up dropping the ones that are not crucial for semantics: the structural features (articles, agreement, etc.). In consequence, these features become fossilizable.

As textbooks and curricula stand right now, every aspect of the grammar that differs from what is used in the Japanese language is given roughly equal focus and attention and it is the object of explanations. It is possible to speculate that, if the phenomena observed during studies on L2 acquisition like the ones we are discussing here were taken into account in teaching, fossilization would not need to occur, or at least not in the degree in which it affects our students now. The danger at which features stand during the regression-stagnation phase that we have identified in our intermediate-advanced students (replicating the results in Fernández (1997)), should be the focus of attention for any method that aspires to facilitate a successful acquisition process in the students. A thoroughly designed battery of activities and strategies that can help Japanese speakers overcome the described downturn differently for each type of features should be the priority of the teaching at the intermediate-advanced level.

At least three conclusions can be drawn from our previous discussion that may act as a guide in applying these discoveries to language teaching:

- A. If students had automatized the structural features by the time the regression stage starts, mental resources would be freed to be used in setting semantically-loaded features. This stage could be overcome faster and more successfully
- B. If the declarative knowledge that students are provided with

were closer to true linguistic realities, it would be useful instead of an obstacle.

- C. If the materials took into account facts about mental processes and linguistic relations between structures, the acquisition process would be smoother and less fossilization would occur.

It is not easy, however, to take these discoveries and make concrete proposals for language teaching, since many are the factors that a teacher must take into account, not all linguistic in nature (Cook 2001). Linguistic analyses can be too abstract and subject to debate to act as a guide in designing teaching materials. “Rules of thumb” might come in handy when explaining the mapping between form and meaning to general students who are not particularly interested in linguistics. Nevertheless, there is a sense in which the teachers and textbooks have the responsibility of not ignoring scientific facts about language, in particular now that we know that overlooking them harms the learner. We believe that we know enough about language structure, the syntax/semantics interface and the process of acquisition to be able to make some innovations in the classroom. The following are a few suggestions:

1. Aspectual and modal systems cannot be described in terms of the final meaning of the sentence (*i.e.*, “the imperfect refers to habits”, etc.). Teachers should understand that the grammar lies behind the surface and that constructions that belong to a system are related to one another. At the very least, this should play a role in the organization of the materials. The introduction of the imperfect, for instance, in a Spanish textbook, should be coupled with a strengthening of the distinction between the copulas *ser* and *estar*. Likewise, subordination (completive sentences) currently appears in the input as taken for granted. When relative clauses are introduced, the connections between these two constructions is ignored. Materials should provide input on relatives and completives in a way that is consistent

with their syntactic nature as related constructions.

2. *Pseudosyntax* and rules of thumb may seem practical at the beginning stages, but constitute a real obstacle at the intermediate-advanced levels. If they are unavoidable, at least teachers should know that they are insufficient, and should provide with enough well designed input to favor simultaneous implicit acquisition mechanisms by the students of the features that will be necessary for production.
3. The progression in L2 acquisition is not linear. Teachers should not assume a certain degree of knowledge to have become procedural at higher levels just because it has been covered in beginning classes. During the third-year regression, special care should be placed to strengthen the features that are considered “basic”, since they are in danger of fossilizing.
4. Extensive practice does not necessarily lead to mastering structural features. The students might have dropped them from their efforts way before they have the chance to practice the language in an everyday basis. To avoid this, we need to make sure that these features become automatic before the third-year regression. Although it is not easy to see how, we have devised subliminal ways of making the students assimilate these features without attention to the task. Our research is based on masked priming techniques that are common in Psycholinguistic experiments and that prove that there is activation of lexical items by exposing the subject to them only for a few milliseconds, without him being conscious of it. Subliminal effects have also been found in the research by Thomas G. Bever that led to the establishment of ReadSmart (<http://www.readsmart.com/>) as a patented way of formatting text. ReadSmart is a program that formats text taking into account the linguistic structure of phrases and sentences. For instance, it adds a non-perceptible space between phrases. This simple change facilitates processing in such a way that the reader improves comprehension con-

siderably without knowing why. Imai & Sanz (2009) have proposed similar subliminal ways of formatting text so that structural features can be unconsciously automatized. Although this is by no means a finished project, it indicates promising ways in which structural features could be dealt with.

5. Not all features behave alike. Attention to a feature just because it does not appear in the L1 of the learners might be counterproductive. At the very least, teachers should be aware of the nature of the features that they are trying to teach at each step. Developmental features need a certain quality and quantity of input in order to be acquired successfully.

In sum, simplifying grammatical rules introduces confusion between linguistic mechanisms that has consequences for the whole process of acquisition and may turn out to be fatal. Leaving the students to figure out by themselves the relations between structures and the interactions of features with each other makes them use up mental resources that could be employed for a smoother and more efficient acquisition process. It is the responsibility of teachers to look at linguistic theory for help in understanding the true nature of the grammar of natural languages so that teaching can be of real help in the acquisition process of a second language.

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