

“L” Stands for Language

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<A> ABSTRACT

A key premise of a transdisciplinary perspective on SLA, as articulated by the Douglas Fir Group (2016), is the usage-based approach to language acquisition. In this commentary, I make the case for a generative linguistic theory-based approach to language acquisition. While both approaches are at the cognitive core of the development process, I show that experience-based predictions are sometimes challenged by theory-based predictions. I argue that, while experience with language is responsible for the bulk of acquisition, there are cases where a grammar-based theory provides superior explanations. In addition, the generative framework presents a holistic, organic picture of speaker competence while also offering explanations of why performance may under-represent competence. <END OF ABSTRACT>

Keywords: competence, performance, processing, generative approaches to second language acquisition, linguistic input

The field of second language acquisition (SLA) research appears to be strong and healthy, developing in many different directions aiming to reflect and explain different facets of the SLA process. A particular strength is the variety of perspectives from which the process is being examined. It has been twenty years after Firth and Wagner’s (1997) reorientation and two years after the Douglas Fir Group (DFG, 2016) proposed a transdisciplinary approach to multilingualism in a multilingual world. Responding to this call for transdisciplinarity, as well as its theory-internal development based on changing linguistic ideas, the generative approach to SLA (GenSLA) is positioned to add substantially to the wide-ranging picture (Lardiere, 2017; Slabakova, Leal, & Liskin-Gasparro, 2014, 2015; White, 2018). In this commentary, I will

present what this approach can bring to the table and what advantages it offers. I will argue that the generative approach is perfectly compatible with many tenets of the DFG framework and show where it is situated in the architecture exemplified in its Figure 1. My main point, in line with Kasper's (1997) commentary on the original (1997) Firth and Wagner publication, is that any argument for a factor or condition influencing the SLA process has to be presented with theory-based predictions and experimental evidence documenting change in behavior due to this same factor or condition in isolation. A major advantage of GenSLA is that it offers an independent and well-understood theoretical framework from which linguistic behavior can be studied. In this commentary, I will not provide one more overview of GenSLA research questions and issues (but see White, 2018 for an excellent overview). Instead, I will seek to demonstrate the advantages of GenSLA with a well-known thorny issue: the acquisition and production accuracy of present tense, third person subject-verb -s agreement in English.

<A> WHERE ARE GenSLA APPROACHES SITUATED?

GenSLA is firmly rooted in the cognitive core of SLA, together with usage-based approaches. It endeavors to describe the linguistic performance of “individuals engaging with others” and the direction of research is from “regularly recurring contexts of use” to “neurobiological mechanisms and cognitive capacities” (DFG, 2016, p. 25). That is to say, it rests on the cognitive side of the spectrum of approaches. Perhaps we can acknowledge that this spectrum is also the *core* of language acquisition. The sociocultural institutions and communities as well as the ideological structures of the outer levels reflected in the DFG's Figure 1 may dramatically influence language communication, but the essence of this communication is still the fact that L2 users are operating with a complex grammar representation in their mind/brain. Some illustrative facets of this representation include: All languages have nouns, verbs, prepositions, adjectives, and adverbs expressing lexical meanings combined with derivational and functional information; all languages have grammatical features such as plural, case, definiteness or genericity that may be overtly expressed or not, and configured on lexical items; sentence meaning is compositionally read off of word meanings taking their order into account; discourse and context effects can change that sentential meaning. Building an internalized

grammatical system of the second or additional language is at the core of second language development, and discovering the nature of this fundamental process is key to understanding the whole edifice.

At the cognitive core of Figure 1, GenSLA resides together with usage-based approaches (see Ellis, this issue). Rothman and Slabakova (2017) have recently argued that the bulk of linguistic properties is acquired based on the evidence of the linguistic input, or primary linguistic data (to be discussed at length in the next section) and may well take the route described by the usage-based paradigm. In addition, O’Grady’s processing determinism is an elaborate emergentist framework that offers a middle ground between some-innate-knowledge and all-usage descriptions of language development (e.g., O’Grady, 2015). In O’Grady’s approach, processing costs determine which morphosyntactic operations place a lower burden on working memory, prompting languages and learners to favor them over other, more costly derivations. External factors such as frequency of occurrence in the input create opportunities for learners to ‘notice’ the favored derivations and then offer routines in which these derivations are strengthened through repeated activation. As we will see in the next section, the understanding that processing and computation pressures are of utmost importance in language acquisition is a common understanding across cognitive frameworks; the sole difference is that for generative approaches they are not everything.

What remains to be explained? For generative scholars, the cases that suggest an operation of an innate language acquisition device and make all the difference are those described as Poverty of the Stimulus (PoS). In a general sense, these are argued to be properties of language that cannot be acquired solely based on the primary linguistic data and require some form of negative evidence. Very often, these properties come in the shape of negative constraints: a structure that analogy suggests should be allowed by the grammar but is not allowed, or a meaning that should be possible to compute but it is not. Since these negative constraints cannot be exemplified with positive evidence, if they are demonstrated to be acquired, it is contended that successful acquisition is based on some innate part of the grammar. Given space limitations here, I refer readers to a recent review of such properties by Schwartz and Sprouse (2013), which elaborates on five different types of PoS properties. An important

point to keep in mind is that the existence of PoS learning situations is no longer a theoretical necessity but a matter of observation and ultimately of empirical evidence. Every PoS case stands or falls on the merits of the evidence that supports it, and if all of the proposed PoS cases are explained away with sufficient arguments, generative and emergentist approaches to language acquisition may look very similar indeed.

<A> THE UNIQUE CONTRIBUTION OF THE GenSLA APPROACH

The previous section situated GenSLA among cognitive approaches to language acquisition. The research imperative that all these frameworks share is to explain how linguistic properties are acquired in the course of native and additional language development. However, there is a more fundamental imperative, which colors the range of answers to the previous question, and that is: Why do languages have the particular properties that they have?

Let us elaborate on the best-known feature of generative grammar: the postulation that some grammatical knowledge is innate, a biological blueprint provided to all human beings by Universal Grammar (UG). Since its inception in the 1970s, this approach to SLA has placed UG at the center of attention, making it a hallmark of this framework for scholars of different persuasions. Approaching SLA armed with the concept of a parameter, UG-provided choices for predictable variation, and looking for parameter resetting in L2 grammars brought considerable empirical discoveries, such as, for example, how a null subject language (e.g., Italian, Spanish) is different from an obligatory subject language (e.g., English). Other parameters studied verb movement, *wh*-movement, and word order. A central, and very attractive, idea prominent in this initial period was the metaphor of the parametric switch. A proposed parameter would ideally account for a number of superficially unrelated properties or constructions in a grammar, a parametric cluster, and they would all be simultaneously reset when the new setting was acquired in the second language (White, 1989). The trigger for parameter resetting had to be a salient piece of inflectional morphology that would be easy for learners to detect (Lightfoot, 1999). At the same time, principles of UG would not need to be acquired, because they were available and active in all languages. By the end of the 1990s, the original understanding of principles and parameters was largely confirmed, but the idea of parametric clusters was not uniformly

supported. New developments coincided with the advent of the Minimalist Program (Chomsky, 1995) and the focus on L2 functional categories and features (White, 2003).

The concept of UG is still at the core of the generative approach to language and language acquisition; however, it has undergone considerable theoretical reconsideration. UG still characterizes the genetically determined aspect of the human capacity for grammatical knowledge. Views of language acquisition are currently guided by Chomsky's (2005) three factors that determine the nature of internalized languages: F1: Genetic endowment, or UG; F2: Experience, or Primary Linguistic Data (PLD); and F3: Principles not specific to the faculty of language.

The first factor is the species-specific UG, or grammatical knowledge by which all languages are constrained and that can be utilized in subsequent language acquisition. There has been a considerable effort to reduce UG's size and complexity. Innate knowledge is now much less elaborate than in previous incarnations of generative linguistic theory.

The second factor is exposure to the linguistic input surrounding learners, mapped onto extralinguistic situations that allow learners to achieve a form–meaning mapping. Experience is very much a relational notion. It is determined not only by the UG-delimited “possible human experiences,” but also by the many factors of the human individual: social experience, history, attitude, motivation, etc. This is precisely where the middle layer of DFG's Figure 1 can affect representations.

The third factor reflects general biological, physical, and computational principles of two kinds: Principles of data analysis that might be used in language acquisition but also in other domains of cognition; and architectural and computational constraints, including canalization, organic form, and efficient computation (Chomsky, 2005). This factor brings together psycholinguistics and language acquisition, essentially postulating that, as a learner parses the second language input, she is acquiring the grammatical features of that language (Dekydspotter & Renaud, 2014; Sharwood Smith, 2018). In this process, the learner utilizes computation of structures and data at different levels of information (grammar, context, pragmatics); acquisition happens unconsciously at all these levels.

As the reader can ascertain, the new understanding of language design is much more compatible with processes that happen, strictly speaking, outside the cognitive realm. There is increased scope to study interaction between individual communication experiences and linguistic representations. For example, the extensive research on gestures as linguistic signs (Abner, Cooperrider, & Goldin-Meadow, 2015), currently carried out from a psychological perspective, can be seamlessly integrated into this minimalist picture of the language faculty.

What are the unique advantages of GenSLA? It can rely on the findings of about sixty years of generative language description, with a particular focus on how languages differ and how they are alike. The framework has achieved considerable depth in describing language variation, a perspective that is not emphasized in other SLA approaches. Thus, the learning task in L2 acquisition can be formulated much more precisely from a GenSLA perspective, as compared to other cognitive approaches.

Following Cummins (1983), Gregg (1996) argues that both a *property theory* and a *transition theory* are needed for a full picture of acquisition to emerge. A property theory describes the nature of the linguistic representation achieved by a speaker; a transition theory explains how learners get from one stage of linguistic knowledge to another. One could add that a *usage theory* is also needed, providing the connection between representation and processing. As O'Grady, Lee, and Kwak (2009) acknowledge, what most emergentist, usage-based approaches lack is a strong property theory. On the other hand, Gregg (2003) has pointed out that GenSLA approaches often lack a strong transition theory (although see Carroll, 2001; Pienemann & Lenzing, 2015; and Sharwood Smith & Truscott, 2014). A transition theory and a usage theory may very well be the same thing, although substantiating this claim with evidence is still an empirical matter (Dekydspotter & Renaud, 2014; Sharwood Smith, 2018).

In the rest of this commentary, I proceed to illustrate GenSLA's advantages with the help of some real acquisition examples. I will seek to demonstrate that learner knowledge is both under-determined by the linguistic input and under-represented by learner production.

<A> THE SUBJECT-VERB AGREEMENT QUANDARY

It is often the case that adolescent and adult L2 learners are exposed to vastly smaller amounts of target language input, compared to children acquiring their mother tongue. One striking observation is that there is a significant gap between the scarce, impoverished input and the linguistic knowledge that adult learners manage to acquire. It is fair to say that, just like in native first language acquisition, the linguistic representations of L2-ers are vastly under-determined by the linguistic experience. (For examples of such learning situations and successful acquisition, see research reviewed in Slabakova, 2016; White, 2003). At the same time, linguistic experience does not produce linguistic representations in a direct manner. There are some properties that are amply modeled in the input but learners experience them as a challenge, and error rates may be higher than accuracy rates.

A prime example is the functional morpheme *-s* marking agreement between the subject and the verb in English. This morpheme is extremely frequent in the input. It has to appear in all simple present tense sentences that have a 3rd person subject. In the 520-million-word Corpus of Contemporary American English (COCA, Corpus.byu.edu, 2018), the 3rd person singular *-s* occurs a total of 6,198,523 times. That is, it appears in as much as 37.5% of all present tense lexical verbs and in 10.1% of all lexical verbs. At the same time, it is routinely dropped in production. Furthermore, some learners drop it more than others, depending on their native language and its properties. Why would that be? A comparative look at some treatments of this quandary highlights the advantages of GenSLA in explaining this long-lasting puzzle.

* The Usage-Based Approach (Goldschneider & DeKeyser, 2001)*

In assessing how usage-based approaches address this quandary, it is instructive to review some findings from the well-known study of Goldschneider and DeKeyser (2001). In essence, the question is why one functional morpheme, or functor, would be more accurately used in comparison with another. The study provided a meta-analysis of the order of acquisition of six English functors across 12 other studies. The authors showed that five factors—perceptual salience, semantic complexity, morphophonological regularity, syntactic category, and frequency—account for a significant portion of the variance in accurate usage. Among the notable findings, they cited accuracy percentages for the three morphemes whose

morphophonological form is *-s*. Accuracy on *plural marking* ranged from 54.31% to 93.33% with a mean of 74.16%; accuracy on the *possessive* was between 23.08% and 75% with a mean of 50.71%, while accuracy on the 3rd person singular present *agreement* ranged from 7.67% to 66.61% with a mean of 31.99%. Since these three different morphemes have the exact same acoustic properties and conditions of allomorphic variation, three of Goldschneider and DeKeyser's factors are moot: perceptual salience (defined as "how easy it is to hear or perceive a given structure" in the input, p. 22), morphophonological regularity, and syntactic category (which refers to whether the functor is a free or bound morpheme). Since the 3rd person singular agreement is the most frequent of the three morphemes, the factor of frequency predicts the opposite of the actual findings.

How about semantic complexity, defined as a measure of how many meanings are expressed by a particular form? For example, the plural *-s* expresses only the grammatical feature number, whereas the 3rd person singular *-s* expresses person, number, and present tense, making it more complex. With the caveat that this criterion refers more appropriately to syntactic and not semantic complexity, it would indeed predict correctly why the agreement marker is the most difficult among the functors sharing the same form. But it is the only one among the five factors that yields a supported prediction.

In their discussion, Goldschneider and DeKeyser argue that all five factors that they find responsible for the large part of variation in accuracy boil down to *salience*. However, the composite notion of salience cannot usefully explain why the three functors sharing the form *-s* are used with considerably different accuracy, in other words, it cannot be the whole story. At least for this functor, high frequency in the input is no guarantee of accurate suppliance. In the next section, I will expand on the featural complexity of agreement-*s*, which appears to be much higher than what Goldschneider and DeKeyser suggest. This featural complexity makes this functor much more difficult to acquire despite its frequency.

 Morphology Before Syntax (White, 2003)

The arguments in this section can be better appreciated if some generative assumptions are introduced. In addition to *person*, *number*, and *present tense*, the agreement morpheme *-s*

also carries information about *aspect* (habitual or reportive present); it carries the requirement that the *subject is overt* in English (as opposed to null, unpronounced); that the subject can only be marked with *Nominative case* (as opposed to Dative case in languages such as Russian and Spanish); and the fact that the English verb does not leave the verb phrase to go higher in the structure (as it does in French and Spanish), which is shown by its position to the right of the verb-phrase edge marking adverb (e.g., *My daughter often takes the bus* but not **My daughter takes often the bus*). All of these seven properties, or grammatical features, are purported to be hosted by the functional category Tense Phrase (TP). One of the three possible morphophonological reflexes of this category is the *-s*; the second is the past tense marker *-ed*; zero is also a possible reflex, which is computed, in the present, as all other person and number combinations but not 3rd person singular. Note that while these functors (and their suppletive forms) constitute the morphological expression of the functional category, three other properties (overt subject, Nominative subject, verb in VP) constitute the syntactic knowledge hosted by the same category. Ultimately, they should be acquired together, but they are not.

White (2003, pp. 187–193) discusses evidence for the separation of syntactic knowledge and morphological accuracy, including the 3rd person singular agreement morpheme. Her comparison is based on acquisition data from children and adults who are native speakers of Russian, Turkish, and Hokkien. The comparison in Table 1 comes from native speakers of Chinese languages (Lardiere, 1998a, 1998b; Li, 2012), in order to maintain the L1 transfer factor constant. Lardiere's subject, Patty, is a Hokkien and Mandarin-bilingual adult learner of English. Li's participants are six Mandarin-native children aged 7 to 9 acquiring English in a naturalistic environment in the USA. Patty's performance is considered to be at end-state, in the sense that it is deemed she will not develop it further. The children's performance is captured longitudinally for eight months, starting when they had been in the USA for four months, so they will clearly continue to develop.

TABLE 1

Percentage of Accurate Suppliance of Functor Morphemes and the Syntactic Effects Associated with the Functional Category TP

	3rd person sg. agreement	Past tense on lexical verbs	Suppletive forms of <i>be</i>	Overt subjects	Nom. case	V in VP (no verb raising)
Lardiere (1998ab)	4.5	34.5	90	98	100	100
Li (2012)	16	25.5	93	100	100	–

What is especially striking in the data presented in Table 1 is the clear dissociation between the incidence of verbal inflection (ranging between 34.5% and 4.5%) and the various syntactic phenomena related to it, like providing overt subjects, marking nominative case on the subject, and the verb staying in VP (above 98% accuracy). It seems that Patty and the children do not produce the overt morphemes *-s* and *-ed*, but they know what the morphemes stand for and what other syntactic processes they regulate in the sentence. As previously discussed, knowledge of all the properties reflected in Table 1 is purportedly knowledge related to the same underlying functional category of TP and its features. In view of such data, it is hard to maintain that omission of functional morphology is indicative of lack of L2 morphosyntactic features. **What you see on the surface is not what you get in competence, – you get a lot more.** This larger picture also suggests that looking narrowly at surface morpheme production accuracy obscures the true state of learner knowledge. If our account had stopped at registering high levels of *-s* omission, we would have missed this successful acquisition. Only an approach that takes a wider view of grammar can provide this insight.

 Computational Complexity and Featural Hierarchies

In the previous section, we saw that the morpheme *-s* is a reflex of a functional category TP that hosts a great number of grammatical features, regulating what a declarative clause looks like in English. In this section, we continue to explore what looking more carefully at features can buy us in terms of behavior predictions and explanatory power. At issue is to explain why the surface realization *-s* is not retrieved (at times) from the functional mental lexicon of learners, when they actually have the correct representation. Generative scholars have made several proposals to this effect.

The Missing Surface Inflection Hypothesis (Haznedar, 2001; Haznedar & Schwartz, 1997; Lardiere, 1998a, 1998b, 2000; Prévost & White, 2000a, 2000b; White, 2003) was the first of these proposals. It is based on a view of the grammar that postulates the so called ‘late vocabulary insertion’ (Halle & Marantz, 1993). In the derivation of a sentence for production, a fully formed tree is assembled, complete with features satisfying all syntactic requirements. The next operation is to ‘reach’ into the mental lexicon and access and insert into the final nodes all the lexical items that satisfy each node’s features. Failure to retrieve the optimal lexical form that matches all the features of a given node leads to a substitution of a ‘default’ form, in this case the bare verb. In the end, the sentence is spelled out phonologically with this default form. This account argues that there are no underlying deficiencies in functional features or syntactic structure. The lexicon access breakdown is superficial and happens more often under communication pressure, such as when speakers are tired or overburdened by other computational operations. It is likely that input frequency and distributional consistency of grammatical forms have an important role in the substitutions (Theakston, Lieven, & Tomasello, 2003). Thus this (early) account combines formal grammar explanations with usage-based descriptions for the lexicon access breakdown it proposes.

In a similar spirit, Hawkins & Casillas (2008) is another GenSLA proposal that attributes the low rates of 3rd person singular present agreement production to the complexity of the featural contexts required for its insertion. These scholars suggested the following lexical rule: “insert /-s/ in the context of a verb which is in the context of a nonpast T, itself in the context of a third person, singular N” (p. 602). This rule is a prime example and a basis for formulating the Contextual Complexity Hypothesis, which posits that the more nodes required to specify a

context for the insertion of an affix (in this case, tense, and agreement nodes), the greater the probability that the item would not be retrieved successfully from the lexicon (p. 603).

Lardiere (2000, 2017) proposed another explanation for the low accuracy in *-s* production: the idea of feature co-occurrence hierarchies. Not only is the pure number of nodes in the affix context important, as in the Contextual Complexity Hypothesis; it is also important that nodes and their features are arranged by the grammar in feature hierarchies (Harley & Ritter, 2002). In order to illustrate this, we will step away from the agreement property and go over to 3rd person singular subject pronouns. The argument starts from the observation that many learners of English, including Patty, often confused the masculine and feminine forms of 3rd person singular pronouns. But since it is not difficult to observe natural sex (female, male) in the environment and to connect it with pronouns like *she* and *he*, why do learners do this?

In Patty's case, one might consider that her (spoken) L1 Chinese fails to distinguish pronominal gender and therefore this would be a simple issue of L1 transfer; however, neither does her L1 distinguish pronominal case marking, which in her L2 English was perfect. In other words, while Patty often confused *him* or *his* with *her*, or *she* for *he*, she never confused *he* for *him* or *his*, or *she* for *her*." (Lardiere, 2017, p. 56)

As the reader can ascertain, these are very specific, feature-related mistakes that are difficult to explain based on salience and frequency. The proposed explanation lies in a feature hierarchy where case (nominative, accusative, genitive) is higher than person/number features, themselves higher than gender (masculine, feminine). Lardiere argued that the more deeply embedded a feature is within a feature co-occurrence hierarchy, the less detectable it is and the more difficult its retrieval.

 Differential Acquisition of Linguistic Modules

In addition to the proposals addressing morphological competence and performance, it is useful to scale up our attention to the whole of the grammar. It is uncontroversial that the grammatical system of a language is made up of modules: phonology/phonetics, morphology, syntax, semantics, and pragmatics, roughly speaking. These modules 'talk to one another' at interfaces, where properties from one module come in contact with properties of the other

module. Examples are the syntax–semantics interface (different syntactic structures express different meanings) and the phonology–pragmatics interface (different intonation patterns reflect different Topic–Focus structures). The holistic linguistic message is always, without fail, made up of information coming from all modules working in consort. But are they equally difficult in acquisition? The Bottleneck Hypothesis (Slabakova, 2006, 2008, 2016) argues that they are not. The functional morphology is much more difficult to acquire, as we saw amply documented and explained in the previous sections. Salience and frequency are necessary but not sufficient explanations of this difficulty; computational or featural complexity have to be evoked as well. According to the Bottleneck Hypothesis, the rest of the modules, notably syntax and semantics, are easier to acquire, and there is a very good linguistic explanation why this is so. Again, the rationalization comes from generative linguistic theory. The Minimalist Program (Chomsky, 1995) argues that variation is restricted to possibilities that the inflectional component makes available. Borer (1984) expresses it like this: “The inventory of inflectional rules and of grammatical formatives in any given language is idiosyncratic and learned on the basis of input data” (p. 29). This view has come to be known as the Borer–Chomsky Conjecture. On this view, parametric variation among languages is restricted to functional elements in the lexicon (that is, instantiations of Complementizer, Agreement, Tense, etc.). The examples that we saw in this section, such as agreement and pronouns, are such functional elements. In contrast, the rules and operations in syntax and semantics are universal, that is, common to all languages. They are regulated by the features which reside in the functional morphology, but once these features are acquired, the syntactic and semantic reflexes are automatic. It stands to reason that what has to be acquired in an additional language is what is dissimilar from the native language; the universal parts can transfer in a direct manner.

In Slabakova (2006, 2008), this argument was substantiated by comparing findings on the L2 acquisition of the different modules, demonstrating the superior burden and challenge of the functional morphology. Recently, Jensen, Slabakova, and Westergaard (2016) attempted a direct syntax–morphology comparison. The researchers tested two constructions exhibiting a contrast between English and Norwegian: the verb-second (V2) phenomenon (attested in Norwegian) and S–V agreement (not attested in Norwegian). English non-subject-initial declaratives as in (1)

allow the verb in the third position, while these would be unacceptable in Norwegian. The Norwegian pattern in (2), with the verb in second position before the subject, is unacceptable in English. Local agreement where the verb and the subject are close as in (3) was tested, as well as long-distance agreement where the verb and subject were divided by some modification as in (4):

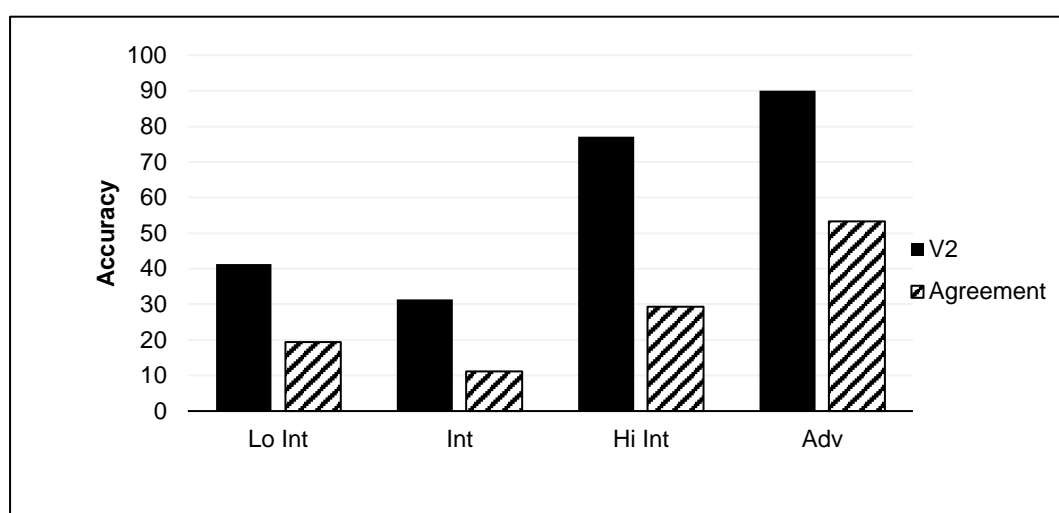
- (1): Yesterday the teacher went to the market
- (2): *Yesterday went the teacher to the market.
- (3): The brown dog plays with the yellow football.
- (4): The boys in the black car look very scary.

While the agreement marking cannot transfer from Norwegian into English, as Norwegian simply doesn't have it, V2 structures as in (2) can transfer and, therefore, have to be preempted, or unlearned. Thus, agreement can be considered learnable from positive evidence, while learning the unacceptability of (2) requires negative evidence. Frequency and availability of instruction also predict an advantage for agreement over word order. Salience is the only factor that could favor the V2 construction. With four experience-based factors to one, the overall prediction is that agreement would be easier to acquire. An opposing prediction came from the Bottleneck Hypothesis, which contends that word order would be easier.

Learner judgments were not compared to native speakers' but examined on whether they distinguished between acceptable and unacceptable sentences. While all the learners were quite accurate in accepting grammatical structures, Figure 1 focuses on the rejection accuracy and compares the syntactic property (V2) with the morphological property (S-V agreement).

FIGURE 1

Accuracy Percentages in Rejecting Ungrammatical Test Items, V2 and S-V Agreement Compared



While ungrammatical sentences of both constructions were difficult to reject for the low intermediate and the intermediate learners, accuracy with V2 was much higher than accuracy with agreement. In the high intermediate and advanced groups, accuracy on V2 improved, reaching 90%, while accuracy with agreement barely rose above 50%. The prediction of the Bottleneck Hypothesis appeared to be supported over the experience-based factors: Using accuracy as a proxy for acquisition, agreement appeared more difficult to acquire and gave rise to more errors over time than rejecting V2 word order. These particular findings would be unexplained from a usage-based perspective. Since this is the first study that compares syntactic to morphological knowledge in the same learners, it has many limitations. Many other comparisons have to be tested in order to maintain with any certainty that any one outcome is solidly supported. The study was only provided as an indication of how GenSLA theory-based predictions can be tested head-to-head with experience-based predictions (see Bruhn de Garavito, 2006, 2011 for two other examples).

<A> CONCLUSIONS

In this commentary, I argued that GenSLA approaches are a valuable member of the cognitive core of theories purporting to explain different facets of second language acquisition. There is a significant amount of the acquisition space that is accountable by both generative and usage-based approaches. GenSLA's advantages pertain to the elaborate property theory that it is based on and the useful focus on language variation, allowing it to make detailed predictions

about behavior. Using a notoriously hard property of English, subject–verb agreement in the present tense, I showed that the exact patterns of its acquisition are as difficult to predict as they are to learn. Positioning this property in the wider grammar and comparing its production accuracy with syntactic properties that are arguably part of the same functional category provides a holistic perspective on knowledge. In this perspective, functional categories are the locus of linguistic variation, hence they constitute the bulk of grammatical acquisition. The surface morphophonological realization of a specific functional category such as TP is only one aspect of linguistic knowledge, and it can under-represent syntactic and semantic knowledge. Attention to processing is an essential part of GenSLA, to the extent that it is difficult nowadays to separate descriptions of learning from descriptions of processing. Finally, while processing, and in particular lexical access, may distinguish monolinguals from bilinguals, there is no fundamental difference in their linguistic competence. It is on the basis of core linguistic knowledge that culturally-constituted communication activities occur.

REFERENCES

- Abner, N., Cooperrider, K., & Goldin–Meadow, S. (2015). Gesture for linguists: A handy primer. *Language and Linguistic Compass*, 9, 437–451.
- Borer, H. (1984). *Parametric syntax*. Dordrecht: Foris.
- Bruhn de Garavito, J. (2006). Knowledge of clitic doubling in Spanish: Evidence against pattern learning In R. Slabakova, S. A. Montrul, & P. Prévost (Eds.), *Inquiries in linguistic development: In honor of Lydia White* (pp. 305–333). Philadelphia/Amsterdam: John Benjamins.
- Bruhn de Garavito, J. (2011). Subject/object asymmetries in the grammar of bilingual and monolingual Spanish speakers: Evidence against connectionism. *Linguistic Approaches to Bilingualism*, 1, 111–148.
- Carroll, S. (2001). *Input and evidence: The raw material of second language acquisition*. Philadelphia/Amsterdam: John Benjamins.
- Chomsky, N. (1995). *The Minimalist Program*. (Current Studies in Linguistics.) Cambridge, MA: The MIT Press.

- Chomsky, N. (2005). Three factors in language design. *Linguistic Inquiry*, 36, 1–22.
- Corpus.byu.edu (2018) Corpus of Contemporary American English. Available at:
<https://corpus.byu.edu/coca/>
- Cummins, R. (1983). *The nature of psychological explanation*. Cambridge, MA: The MIT Press.
- DeKeyser, R. (2005). What makes learning second-language grammar difficult? A review of issues. *Language Learning*, 55 (S1), 1–25.
- Dekydtspotter, L., & Renaud, C. (2004). On second language processing and grammatical development: The parser in second language acquisition, *Linguistic Approaches to Bilingualism*, 4, 131–165.
- Douglas Fir Group. (2016). A transdisciplinary framework for SLA in a multilingual world. *Modern Language Journal*, 100 (Supplement 2016), 19–47.
- Firth, A., & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *Modern Language Journal*, 81, 285–300.
- Goldschneider, J. M., & DeKeyser, R. M. (2001). Explaining the “natural order of L2 morpheme acquisition” in English: A meta-analysis of multiple determinants. *Language Learning*, 51, 1–50.
- Gregg, K. R. (1996). The logical and developmental problems of second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 49–81). San Diego, CA: Academic Press.
- Gregg, K. R. (2003). The state of emergentism in second language acquisition. *Second Language Research*, 19, 95–128.
- Halle, M., & Marantz, A. (1993). Distributed morphology & the pieces of inflection. In K. Hale & S. J. Keyser (Eds.), *The view from building 20. Essays in honor of Sylvain Bromberger* (pp. 111–176). Cambridge, MA: The MIT Press.
- Harley, H., & Ritter, E. (2002). Person and number in pronouns: A feature-geometric analysis. *Language*, 78, 482–526.
- Haznedar B. (2001) The acquisition of the IP system in child L2 English. *Studies in Second Language Acquisition*, 23, 1–39.

- Haznedar, B., & Schwartz, B. D. (1997). Are there optional infinitives in child L2 acquisition? In E. Hughes, M. Hughes, & A. Greenhill (Eds.), *Boston University Conference on Language Development 21 Proceedings* (pp. 257–268). Somerville, MA: Cascadilla Press.
- Hawkins, R., & Casillas, G. (2008). Explaining frequency of verb morphology in early L2 speech. *Lingua*, *118*, 595–612.
- Jensen, I., Slabakova, R., & Westergaard, M. (2016). The Bottleneck Hypothesis in L2 acquisition: A study of L1 Norwegian speakers' knowledge of syntax and morphology in L2 English. *Proceedings of the Boston University Conference on Language Development 41*. Somerville, MA: Cascadilla Proceedings Project.
- Kasper, G. (1997). 'A' stands for acquisition: A response to Firth and Wagner. *Modern Language Journal*, *81*, 307–312.
- Lardiere, D. (1998a). Case and tense in a 'fossilized' steady state. *Second Language Research*, *14*, 1–26.
- Lardiere, D. (1998b). Disassociating syntax from morphology in a divergent L2 end-state grammar. *Second Language Research*, *14*, 359–375.
- Lardiere, D. (2000). Mapping features to forms in second language acquisition. In J. Archibald (Ed.), *Second language acquisition and linguistic theory* (pp. 102–129). Oxford, UK: Blackwell.
- Lardiere, D. (2009). Some thoughts on a contrastive analysis of features in second language acquisition. *Second Language Research*, *25*, 173–227.
- Lardiere, D. (2017). Detectability in feature reassembly. In S. M. Gass, P. Spinner, & J. Behney (Eds.), *Salience in second language acquisition* (pp. 41–63). New York: Routledge/Taylor & Francis.
- Li, M. C. (2012). *The acquisition of tense and agreement by early child second language learners*. (Unpublished PhD dissertation). University of Illinois at Urbana-Champaign.
- Lightfoot, D. W. (1999). *The development of language: Acquisition, change and evolution*. Oxford, UK: Blackwell.

- O'Grady, W. (2015). Processing determinism. *Language Learning*, 65, 6–32.
- O'Grady, W., Lee, M., & Kwak, H.–Y. (2009). Emergentism and second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *The new handbook of second language acquisition* (pp. 69–88). Bingley, UK: Emerald Publishing.
- Pienemann, M., & Lenzen, A. (2015). Processability theory. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (2nd, ed., pp. 159–179). New York: Routledge/Taylor & Francis.
- Prévost, P., & White, L. (2000a). Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research*, 16, 103–133.
- Prévost, P., & White, L. (2000b). Accounting for morphological variation in second language acquisition: Truncation of missing inflection? In M.–A. Friedemann & L. Rizzi (Eds.), *The acquisition of syntax* (pp. 202–235). London: Longman.
- Rothman, J., & Slabakova, R. (2017). The state of the science in generative SLA and its place in modern second language studies. *Studies in Second Language Acquisition*. Early view. doi:10.1017/S0272263117000134
- Schwartz, B. D., & Sprouse, R. A. (1996). L2 cognitive states and Full Transfer/Full Access model. *Second Language Research*, 12, 40–72.
- Schwartz, B. D., & Sprouse, R. A. (2013). Generative approaches and the poverty of the stimulus. In J. Herschensohn & M. Young–Scholten (Eds.), *The Cambridge handbook of second language acquisition* (pp. 137–158). Cambridge: Cambridge University Press.
- Sharwood Smith, M. (2018). The life cycle of a representation: The case of gender. In R. Slabakova, J. Corbet, A. Dudley, L. Dominguez, & A. Wallington (Eds.), *Explorations in second language acquisition and processing: Proceedings of the 14th Generative Approaches to Second Language Acquisition conference*. Newcastle, UK: Cambridge Scholars Publishing.
- Sharwood Smith, M., & Truscott, J. (2014). *The multilingual mind: A modular processing perspective*. Cambridge: Cambridge University Press.

- Slabakova, R. (2006). Is there a critical period for the acquisition of semantics? *Second Language Research*, 22, 302–338.
- Slabakova, R. (2008). *Meaning in the second language*. New York/Berlin: Mouton de Gruyter.
- Slabakova, R. (2016). *Second language acquisition*. Oxford: Oxford University Press
- Slabakova, R., Leal, T., & Liskin-Gasparro, J. (2014). We have moved on: Current concepts and positions in generative SLA. *Applied Linguistics*, 35, 601–606.
- Slabakova, R., Leal, T., & Liskin-Gasparro, J. (2015). Rumors of UG's demise have been greatly exaggerated. A reply to de Bot, *Applied Linguistics*, 36, 265–269.
- Theakston, A. L., Lieven, E. V. M., & Tomasello, M. (2003). The role of input in the acquisition of third person singular verbs in English. *Journal of Speech, Language and Hearing Research*, 46, 863–877.
- White, L. (1989). *Universal grammar and second language acquisition*. Philadelphia/Amsterdam: John Benjamins.
- White, L. (2003). *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.
- White, L. (2018). Formal linguistics and second language acquisition. In D. Miller, F. Bayram, J. Rothman, & L. Serratrice (Eds.), *Bilingual cognition and language: The state of the science across its subfields* (pp. 57–78). Philadelphia/Amsterdam: John Benjamins.