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What does current generative theory have to say about the explicit-implicit debate?

Bill VanPatten & Jason Rothman

Michigan State University / University of Reading and Artic University of Norway (UiT)

Taking a generative perspective, we divide aspects of language into three broad categories: those that cannot be learned (are inherent in Universal Grammar), those that are derived from Universal Grammar, and those that must be learned from the input. Using this framework of language to clarify the "what" of learning, we take the acquisition of null (and overt) subjects in languages like Spanish as an example of how to apply the framework. We demonstrate what properties of a null-subject grammar cannot be learned explicitly, which properties can, but also argue that it is an open empirical question as to whether these latter properties are learned using explicit processes, showing how linguistic and psychological approaches may intersect to better understand acquisition.

Since the pioneering work of scholars such as Selinker (1972), Corder (1967) and Krashen (1981), the field of Second Language Acquisition (SLA) has developed significantly in ways that few would have been able to imagine four decades ago. As is to be expected, there are multiple approaches to the study of SLA – largely reflecting the multiplicity and complexity of L2 acquisition rather than the often assumed mutual exclusivity of the approaches themselves (see Rothman & VanPatten, 2013, for discussion). Whether or not some theoretical pruning is necessary, multiple SLA theories will always exist given that no one theory could address – nor has ever attempted to address – all the relevant questions deserving of attention.

To be sure, some competing SLA theories do make apparent mutually exclusive claims. For example, generative and connectionist/emergentist[1] approaches make strikingly different claims (see, for example, VanPatten & Williams, 2015) about

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1. We acknowledge that there are several SLA theories that fall under the larger labels of generative and/or connectionism/emergentism that make vastly different claims and are themselves, even when they fall under a larger paradigmatic label, very divergent. We put this issue aside here as it is peripheral to the epistemological point being made.

underlying mental constitution of second language (L2) grammar and how linguistic representation comes to be, the former appealing to linguistic domain specificity and the later to cognitive domain-generality. Theoretical oppositions such as those embodied by juxtaposing cognitive-based theories to L2 acquisition should be applauded since theoretical disagreement itself is a benchmark of serious science. Each cognitive theory within SLA embodies an earnest attempt at modeling processes that to date are, relatively speaking, not fully understood. It is prudent to keep in mind that we all share the same ultimate goal: to accurately describe and explain (some aspects of) adult SLA. With this in mind, it should be uncontroversial to point out that theoretical competition is a necessary step towards achieving the goal of the larger SLA enterprise, enabling the broader field to effectively entertain and ultimately eliminate all reasonable hypotheses.

In line with the general remit of this book, our overarching goal is to weigh in on the issue of explicit-implicit learning from the generative L2 tradition. To be fair, in assessing the value of any theoretical approach and the argumentation for a specific topic that follows from it, one must be acquainted with its working conventions in more than a superficial manner, which inevitably entails understanding the theory's assumptions within its descriptive and explanatory contexts. In our effort towards weighing in on explicit-implicit learning in L2 research from the generative perspective, we will focus some effort in explaining and justifying how and why the division between explicit and implicit learning/knowledge does not make much sense from a generative conceptualization of what grammar/language is, on the one hand, and how it is (and comes to be) constituted/represented in the mind-brain of individuals, on the other.

Given the perspectives taken within the other chapters of this volume, our contribution stands alone in being informed by generative theory. We feel a certain obligation, then, to demonstrate that generative theory does have something to offer the explicit-implicit debate, and one of our goals is to provide the reader with as succinct and comprehensive a view possible (space permitting) of the philosophy, reasoning and evidence that underscore a formal linguistic viewpoint of the explicit-implicit debate. We understand that we are taking a position not normally held by those who weigh in on this debate (but see VanPatten, 2011), nonetheless our position is that even when scholars do not agree with a particular framework, we are all enriched by a discussion of issues from multiple viewpoints. In our quest to present what generative theory might offer the debate, we do not intend to be antagonistic in our approach; however, it is inevitable that at least some readers might read more into what we are saying than what we present here. With these provisos in mind, we present the following sections of epistemological discussions and evidences with the following leitmotifs in mind, which are relatively uncontroversial in formal linguistic circles:

1. Much research in instructed SLA does not have a good conceptualization of what language is, particularly what syntax is, or the full gamut of its complexity. Syntax is not a set of rules understood in the traditional sense, but rather reflexes of an underlying (universal) computational system. Nor is syntax deducible in its entirety from the input alone, as is claimed by usage-based connectionists models (e.g. Ellis, 1998).[2]

2. There is a difference between language learning and linguistic acquisition (in the sense described by Krashen, 1981), and there is no earnest interface between them.[3] This argumentation clearly follows from a modular view of linguistic design (see Fodor, 1983; Pinker, 1994). Modules of the mind, language being one of them, can provide outputs to and even use inputs from other cognitive systems, but their general makeup cannot be altered by domains external to the module in question. Under this scenario, true acquisition of a linguistic system has to be largely implicit because the process of structure building happens as a byproduct of first processing the linguistic input itself (e.g. Carroll, 2001; Gregg, 2003; VanPatten, 2011).

Our main goal in writing this chapter is to encourage both L2 researchers and psychologists interested in language to think about language from a generative perspective, and to engage it with a real understanding of what the theory claims and what it does not. From our perspective, this is critical because generative theory has undergone a number of important internal changes over the past decades, yet we find sometimes that non-generativists argue against a generative perspective using outdated notions, particularly about the nature of Universal Grammar (UG) and what it can/should contain and what it cannot, as well as what its function is (e.g. that it guarantees acquisition or that "all grammar is innate"). Other times, non-generativists latch onto one structure or one example provided in the generative literature (sometimes characterizing it erroneously) rather than to the much larger compendium of studies and research which, when taken together, provide a rather formidable amount of evidence for the generativist view. One very possible consequence, then, of engagement with current

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2. According to Ellis (2002, p. 144) "connectionist models of grammar maintain that all linguistic units are abstracted from language use. In these usage-based perspectives, the acquisition of grammar is the piecemeal learning of many thousands of constructions and the frequency biased abstractions and regularities within them. Language learning is the associative learning of representations that reflect the probabilities of occurrence of form-function mappings."

3. Claiming that there is absolutely no interface between learned and acquired knowledge/ systems while perhaps representative of the core generative L2 perspective is not without dissenting opinions from some generative L2 researchers (see Whong, Gil & Marsden 2013 for discussion).

linguistic theory is a reanalysis of at least some of the debate on explicit-implicit learning – especially as it concerns the "what" of acquisition, that is, a more informed discussion of just what it is that learners need to learn from the input. We also believe that such an engagement will lead less to mutual exclusivity and theoretical competition, but to a greater understanding of how multiple theories might account for the totality of what is language (see, for example, the discussion in Rothman & VanPatten, 2013). To make our presentation, we will refer to null and overt subject pronouns in Spanish throughout the paper, as these are well studied and documented, both in the theoretical linguistic literature as well as formal linguistic L2 literature. To expand upon the (1) and (2) above, we begin with some definitions and distinctions that underlie our argument.

Some definitions and distinctions

Mental representation and skill are different

We take mental representation to mean the abstract, implicit, and underlying linguistic system in a speaker's mind/brain. In addition, when we refer to linguistic or grammatical *knowledge* in this chapter, we mean mental representation – we do not mean conscious knowledge or knowledge about language. By *abstract* we mean that the linguistic system is not something akin to a set of textbook or prescriptive rules, but instead is a collection of abstract properties from which rule-like behavior is derived (e.g. Harley & Noyer,1999; Jackendoff, 2002; Radford, 2001; White, 2003). From a generative perspective (see Chomsky, 2007, for review of the theory from its genesis to its current form under the Minimalist Program), these abstract properties include universal linguistic operations (e.g. Move, Merge and Agree), constraints on well-formedness (e.g. Structure Dependency, Locality Conditions and the like), as well as formal features and their associated functional categories needed for feature-checking operations (e.g. nominal and verbal phi-features, EPP-features, CP, TP/IP and the like).[4] Under the current minimalist feature-based conceptualization, syntactic variation across particular languages, formerly known as parametric variation, is recast as grammatical consequences borne of features associated with lexical items. To be sure, the claim is that the feature inventory of any particular grammar (PG) is a subset of the universal superset of possible features enumerated within Universal Grammar (UG);

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4.   For those unfamiliar with generative theory, EPP refers to the Extended Project Principle (that governs the nature of subjects in sentences), CP refers to the Complementizer Phrase otherwise known as the left periphery of a sentence where the syntax interfaces with information structure (discourse), TP to Tense Phrase, and IP to Inflectional Phrase.

language variation arises as a consequence of feature instantiation into PGs. Whether or not a feature is selected to be incorporated into the PG comes from evidence within the PG lexicon, that is, a part of the learning of the PG lexicon involves decoding the functional features that are part of the lexical unit. As a result of growing the feature inventory of one's PG, the byproduct of acquisition, the syntax of the language emerges to reflect the universal properties/consequences associated with the selected features and their checking within syntactic derivations.

Let's consider a common example of a linguistic property to show the difference between an applied linguistic rule explanation and a formal linguistic account to the same phenomenon. The reader of this volume most likely knows what a subject of a sentence is – and depending on the reader's background, can define it to greater or lesser technical specificity. But what is important here is that every language learner "knows" what the subject of a sentence is, even if that learner cannot define *subject*. If the learner says something like "the subject is the doer of the action" we all know that definition fails if we apply the *-er* test (e.g. the person/thing that washes is the *washer*, the person/thing that licks is the *licker*, but the person/thing that falls is not the **faller*, the person/thing that seems sad is not the **seemer*, and in the sentence 'the boat sank' the boat is not the *sinker*). Subjects are terminal nodes in syntax – that carry functional information in the form of features readable by the syntactic computational system determined universally (e.g. EPP-feature) and also partially by the PG (e.g. optionally person/number features) – and have particular relationships to verbs and other parts of a sentence (e.g. the Tense Phrase), yet every speaker of every language "knows" what a sentential subject is or that person could not make subjects and verbs "agree" in languages that exhibit this kind of agreement. In short, people have a mental representation for "subjectness" that is not easily (if at all) described but that is put into practice with each and every complete sentence uttered or heard (or signed).

We use skill as it is normally used in the literature on cognitive psychology; that is, the speed and accuracy with which people can perform certain actions or behaviors (Anderson, 2000; Schmidt, 1992; Segalowitz, 2003). Skills can be general (e.g. problem solving, learning) or they can be domain- or context-specific (e.g. cooking omelets in a diner versus in a five-star restaurant). Regardless of generality or specificity of domain, that skill involves both speed and accuracy is important – and how skill is measured considers both how quickly someone can do something and how well (the "how well" being contextually defined). A person very skilled in making omelets is not only accurate but generally speedy (i.e. the omelet comes out just right and the person doesn't take long to produce it). A person not skilled in making omelets may be accurate but exceedingly slow, or may be quick but inaccurate, or may be both slow and inaccurate, and these variations may be classified as "more or less skilled" depending on the needs of the person making the classification. (e.g. someone who is slow but makes a good

omelet may be classified as "more skilled" than someone who is fast but makes a lousy omelet, with context once again influencing this determination).

In the case of language, skill refers to communication in all of its manifestations: interpretation (reading, listening), expression (writing, speaking), and negotiation (conversational interaction, turn taking). Note that language skills are also context specific. For example, writing in a chat room is not the same thing as writing this essay. Reading clues for a crossword puzzle is not the same thing as reading Chomsky's writings on minimalist syntax as background research for an article. Speaking while ordering a meal is not the same thing as speaking during an interview with a commentator of a national news broadcast. Thus, when we speak of language skills we must ask ourselves, "Language as skill for what purpose and in what context?" And just like cooking omelets, language as skill involves both speed and accuracy. A skilled reader of Chomsky reads quicker than an unskilled or novice reader and makes few(er) mistakes in interpreting the text. A skilled essay writer produces text faster than the unskilled writer and makes few(er) mistakes (in style, punctuation, word choice, collocation, ambiguity, and so on).

What is interesting about language skill with native speakers and also makes it different from, say, beginning learners of an L2 is that the native speaker has a relatively mature mental representation of language in place prior to skill onset (with the exception of basic conversational skills). Whether a native speaker is skilled at reading crossword clues or at reading about minimalist syntax, the mental representation for language (e.g. syntax, morphology, phonology) was in place before the skill was developed. As established in first language research, most of the mental representation for the formal properties of language exists by the time a child begins school (e.g. Guasti, 2004; Synder, 2007). This is not the case for the beginning L2 learner, especially the classroom learner. Long before a mental representation is in place, learners are asked to read, write, listen, and speak using language that is far beyond their underlying representation. (For more detailed discussion on the distinction between representation and skill, see VanPatten, 2010, and in press.)

Mental representation does not entail "rules" in the classic sense

When discussing mental linguistic representation – the internal grammatical knowledge or competence of a speaker – it is important to underscore that there are no rules in the classic sense used by many in applied linguists (e.g. a rule for the English passive, the rules on the use of the copular verbs *ser* and *estar* in Spanish, subject-verb agreement rules).[5] These types of constructs are shorthand ways of talking about abstract

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5.   An anonymous reviewer questioned whether anyone working in applied linguistics actually believes in rules anymore. As we show later in this paper, they do, by using such terms

and complex parts of the grammar that are either too difficult to describe in simple language or need not be described as such for a particular audience. Indeed, it would not be particularly useful or appropriate to explain to the average L2 student grammatical constructs in unfiltered linguistic terminology. First, unless these students had studied linguistics, any attempt at doing so would be more confusing than helpful. Second, it is clear from the success of child first language acquisition that such knowledge is not necessary for acquisition itself anyway, a point to which we return recurrently throughout this chapter.

To start, let's acknowledge what linguistic description is in the first place, and thus its difference from applied linguistic rules. Linguistic descriptions of grammatical properties are an *a posterori* description of what is observed in natural grammars. At the same time, they offer proposals of the mental constitution of specific properties that are harmonious with how language works in general and how such properties come to be instantiated into the grammatical systems. In other words, linguistic descriptions of how any given property works is both a proposal of how the brain produces and understands linguistic coding and how this is acquired in the course of development such that it becomes part of the individual's grammar. Alternatively, applied linguistic rules are surface level descriptions only of how a form-meaning mapping apparently works from an "outside perspective." These constructs are often specifically designed to foment learning and treat properties separately. Additionally, applied linguistic rules seems to tacitly purport that form and function cannot or should not be separated/separable, which of course is the exact opposite of what formal linguistic proposals contend.

Let's take an example of a concrete linguistic phenomenon to better capture the difference. People often speak of "rules" of subject-verb agreement. From an applied linguistic rule perspective, we could say that in Spanish each grammatical person has a uniquely associated person/number morpheme, for example, *-mos* is 1st-person plural, *-s* is 2nd-person singular and *-n* is 3rd-person plural. In other words, whenever we use a finite verb in Spanish we have a "rule" that forces us to inflect the grammatical person. On the surface, this seems to be what happens. But underlying, it is much more complicated. The rule described above is not descriptively inaccurate (although some so-called rules unfortunately are), however, it has no explanatory value at all. Why does this happen in Spanish, and not so much in English and not at all in

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as "hard and easy rules", "rule internationalization," "rule testing", and other constructs (see, for example, deGraff, 1997; Hulstijn, 2005; Robinson, 1995; Spada & Tomita, 2010, among many others). The exception, of course, are those working within the emergentist framework, who – like generativists – don't ascribe to classic rules but differ from generativists in their understanding of what constitutes the nature of mental representation.

Chinese? What are the related properties, if any, that are underlyingly connected with subject-verb agreement? What is the actual role of subject-verb agreement, assuming that naturally occurring languages instantiate grammatical properties for some computational purpose?

Linguistic descriptions take seriously not only descriptive accuracy but seek also explanatory value. How does subject-verb agreement actually work as a mental construct? What does it contribute to cognitively? How does it fulfill some remit of the purpose of language, making meaning-sound correlations? Let's continue with subject-verb agreement to see just how a linguistic description offers proposals that weigh in on these important questions. To be linguistically accurate, one would explain that there are morpho-phonological forms of the types laid out above that are surface representations of underlying syntactic features for person and number. These features, which encode grammatical information about the relationship between the subject/agent and the verbal predicate, are grammatical features that are strong in a language like Spanish. One would continue to describe that although they are indeed represented as verbal morpho-phonology on the surface they encode nominal-type features (+D features) and thus have several other related consequences in the grammar of Spanish. Because they are strong features they invoke obligatory movement for feature checking reasons. As a result, Spanish, unlike English, has obligatory verb raising, which has several other underlying related reflexes at the surface, for example, unique word orders that obtain in Spanish (relating to adverbs and negation). As a result of these features encoding a noun-like quality, Spanish is a null-subject language, meaning lexical subjects in pragmatically neutral environments are not necessary since the verbal morphology provides the same information.

As the reader can see, one advantage of linguistic description is that it is able to link together a series of surface level phenomena in an explanatorily adequate manner that would otherwise encompass a series of separate pedagogical rules. Linguistic descriptions also show how form and function are separate entities, linked together necessarily via mapping procedures. At the same time, such descriptions account for why languages that have similar underlying structures have similar surface reflexes and how children are able to acquire all these related phenomena without explanation. In fact, under such a view explanation is simply a conscious attempt at describing backwards from observation the surface output of complex machinery. Children do not need explanation since all that appears as describable by rules is in fact reflexes of underlying linguistic features.

As it relates to whether or not applied linguistic rules are an accurate representation of the mental constitution of grammar, the debate regarding the extent to which adults can acquire language in the same way as children is essentially irrelevant. Even if adults cannot – a position we do not support – this fact alone would not make applied linguistic rules truly reflective of mental linguistic representation. This debate becomes

relevant only in terms of whether or not applied linguistic rules are necessary or particularly useful as a means of compensation and/or intervention for teaching adults who might not be able to acquire new L2 underlying grammatical representations. In the next section, we will address the question of how mental linguistic representation develops, essentially taking the position that adult L2 acquisition avails itself of the same cognitive processes that underlie acquisition in children. This does not entail that we believe the processes are entirely the same, as such would be to ignore mere observation of omnipresent L1-L2 differences. However, the mere presence of differences between child L1 and adult L2 acquisitions does not mean by default that adult L2 acquisition is fated to be fundamentally different in its underlying representation as a result of some type of neurological maturation. Such a position is overly simplistic in our view (see Rothman, 2008). We are not interested in only determining if something is seemingly different by looking at the surface alone, but rather we wish to understand why it is so and what is the cause. Correlation is definitively not causation, and any claims of causation based largely on correlations, especially when conceived of with crude linguistic notions, should be subject to scrutiny and interpreted with caution.

How does mental representation develop?

The development of a mental representation is deceptively simple to describe. It is the result of three different factors working together: (1) input, (2) language internal mechanisms (e.g. Universal Grammar), and (3) the parsing/processing mechanisms that mediate between the other two. Input is the language to which everyone is exposed in communicative settings, be it in or out of classrooms. By communicative we mean that the sample speech stream the person is exposed to exists to communicate some kind of meaning; it is not a sample of language to illustrate how language works. Universal Grammar (UG) is the hypothesized uniquely human knowledge system that is genetically determined. In a sense, it is a blueprint to how natural languages work. Much like an actual blueprint, UG is an abstract plan, one that provides the schematics for natural language growth. As such, UG eases the burden placed on general cognition for language acquisition by providing humans *a priori* with unconscious knowledge of specific-linguistic design, thus reducing the hypothesis space. Under a Principles and Parameters conceptualization, UG provides all learners with knowledge of at least two types, often labeled principles – universal constraints to which all language must strictly adhere – and parameters – essentially principles with restricted variations – which constrain the acquisition process by unconsciously organizing the extracted building blocks (features) from the input needed to grow grammar.[6]

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6.   We maintain the terminological labels of Principles and Parameters for ease of exposition, acknowledging that in current generative theory these labels have been recast by some

Parsing and processing refer to the syntactic computations and form-meaning/function connections made during real-time sentence comprehension. When listening to (or reading) a stretch of language, we automatically assign it structure in that we must identify the verb, determine what the relationships of any nouns (or noun phrases) are to that verb, which phrases modify which parts of the utterance, and so on. We also identify and tag particular words to particular meanings, including any inflections or grammatical markers that indicate meaning or function (e.g. -*ed* on a verb indicates pastness, *the* in front of a noun phrase indicates a particular entity presumably known to the speaker and listener). These processes happen unconsciously and in real-time for the native speaker. (We are ignoring here phonological processing for ease of illustration.)

Acquisition proceeds in the following manner: Learners process and parse input they hear or read, and the processed data are used by Universal Grammar to determine appropriate values (parameters) of the language and to ensure that the language obeys the properties of all human languages. From this view, grammatical representation is simply the byproduct of processing linguistic data, which is then filtered through a linguistic domain-specific system. Again, this is deceptively simple, and we do not mean to be reductionist by dismissing general cognitive learning devices, interaction, social context, or other variables known to influence acquisition. Ultimately, these other variables delimit how much of the input is parsed (or becomes "intake" in some models), and thus how much of the raw material needed for representation development makes it to the internal mechanisms. To be sure, in another publication we have called for the need for multiple theories and perspectives in SLA to understand all of these complex interactions and refer the reader to that essay (Rothman & VanPatten, 2013).

Explicit and implicit learning

The constructs of explicit and implicit learning are slippery, to be sure, and are conflated with other constructs such as teaching and processes. For the sake of clarity, we offer working definitions for the present chapter.

We take explicit learning to involve some kind of conscious attention/awareness to a particular feature or datum during input processing. (e.g. Underwood & Bright, 1996). This does not mean that one needs to be engaged in instruction or be explicitly taught something; it means that while one is interacting with linguistic data in normal communicative contexts, one engages consciousness and awareness during input

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scholars. Minimalism is, at its core, an updated Principles and Parameters approach and so these labels are compatible with Minimalism, even if the metaphors behind them (e.g. the light-switch) have been reconceptualized. The most current minimalist view based on a feature-based model, is detailed in the second section of this essay.

processing as part of the act of perceiving, tagging, and taking in data from the environment. In particular, this explicit learning involves awareness of *what* one is learning. Intention to learn may or may not be part of explicit learning. That is, a person can engage in explicit *processing* during learning while the intent is on communication (see, also, Hulstijn, 2005). Implicit learning does not engage consciousness or awareness during input processing. Under implicit learning, a person is unaware of what he or she is actually processing as linguistic data.

Although previously we invoked Krashen's learning versus acquisition distinction and claimed there can be no interface between them from a generative perspective, we do not equate explicit learning with Krashen's learning. Krashen's sense of learning does involve explicit processing of data, it also involves much more, such as intent to learn purposefully, explicit instruction, rule practice, and many other behaviors. Our definition of explicit learning is about what happens during processing, not about other behaviors or intentions. At the same time, implicit learning is certainly implied in Krashen's sense of acquisition, and our use of the term is closer to his meaning of acquisition than our use of explicit learning is to his meaning of learning. However, we leave the door open as to whether there is wiggle room for some explicit processing during acquisition, especially when it comes to lexical items. Krashen's original claim about acquisition was that a learner's focus is on meaning during input processing and that language would be processed implicitly (e.g. without awareness). Research on adult L2 lexical acquisition would suggest that some conscious attention to words and their meanings occurs during acquisition, especially in the early and intermediate stages, as learners struggle to make sense out of input.

Finally, we also do not equate implicit processing with incidental learning. We take the latter to be learning when one's intention is not on X but Y, but the learner picks up X anyway. Theoretically, either explicit or implicit processing can be engaged during incidental learning, and it is not clear how to distinguish between the two.

Aspects of language that cannot be learned

With the previous background in mind, we are able to initiate a discussion of explicit and implicit learning by first examining those aspects of language in which explicit learning is ruled out; namely, those aspects of language that fly under the proverbial radar of non-formal linguistic description. Not only are these properties of language not taught, to children and adults alike, they are often so subtle that they escape conscious metalinguistic thinking about language entirely. Yet, many of these properties, often restrictions on grammaticality that should otherwise be logical extensions of positive evidence from the input, are so robust that they induce little descriptive controversy when brought to consciousness through formal generative descriptions.

In fact, N. Ellis (1998) states "… it is the assumptions of UG that are under attack, not the generative grammar descriptions of the relations between the linguistic units (p. 633)".[7] In the literature, such properties are often referred to as poverty-of-the-stimulus (POS) properties. By definition, properties that meet the stringent criteria to be labeled POS are not inducted from experience with input because they seemingly could not be, but rather, being universal, they follow from domain-specific principles of language that are "predetermined" prior to learning. It is certainly reasonable to attack the very notion of POS (see e.g. Pullman & Scholz, 2002), but a truly successful endeavor at doing so requires much more than an epistemological discussion. Ultimately, it requires tenable alternatives to the logical problem of language learning itself. That is, if one wishes to definitively deny the existence of POS properties, one must provide a plausible account of how acquisition of all – not some, but all – POS properties are acquired via deductive learning from the input. Willliam O'Grady acknowledges that the "crucial challenge for emergentism with respect to language acquisition is to offer an account of how properties of language, however they are construed, can be mastered without the guidance of Universal Grammar, which amounts to finding a way to defeat the 'poverty of the stimulus argument" (O'Grady, 2008, p. 16). He further highlights that within emergentism two lines of reasoning are offered: (1) the argument that grammatical phenomena are simpler than previously thought; and (2) the argument that the input provides more to learners that previously thought. In reference to these two points, he states "my principal point is that neither of these ideas is likely to suffice, either on its own or in combination with the other, and that emergentism should focus on developing processor-based explanations for classic poverty-of-stimulus puzzles" (p. 17). In other words, denying the existence of POS properties (which O'Grady does not) and claiming that everything comes from the input or linguistic properties are inherently simple, unwittingly negates and/or oversimplifies the true complexity of the very object of study – language – and according

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7.   As discussed by Bruhn de Garavito (2011, p. 124) Ellis' statement is only compatible with a general misunderstanding of nativist claims as well as a gross simplification of the complexities captured under generative descriptions since such descriptions themselves are entirely unharmonious with a theory reliant solely on input such as connectionism. If as Ellis seemingly acknowledges the subtleties and complexities of linguistic description from the generative literature are not in question, the type of knowledge we are referring to here as universal, then these descriptive facts must also be explained by a theory devoid of linguistic domain-specificity. It is not clear how theories dependent on input and domain general cognition alone could explain the acquisition of these very properties, the very same properties that seemingly necessitate a linguistic endowment to fill the gap from the input to ultimate grammatical knowledge. In fact, the soundness of "the generative grammar descriptions of the relations between the linguistic units" themselves create problems of explanation for connectionist/usage-based theories.

to O'Grady can impede the progression of alternative theories to linguistic nativism. Our view is that such properties are borne out from a biologically-determined language faculty, whereas O'Grady's position claims that POS exists yet is commensurable with a processor-based explanation understood within a usage-based framework. Whoever is correct on this matter is not crucial for the implications POS properties have for the implicit vs. explicit learning debate in SLA since what is clear regardless of whose account is most explanatory is that there are some properties of language that are not explicitly learned (or taught), much less deducible from input alone. If L2 learners demonstrate knowledge of such properties, as has been shown in much generative L2 research (see Slabakova, 2008, and Rothman, 2008, for overviews), then this alone already suggests that the development of L2 representation in adulthood, at least in part, happens implicitly. Note the use of the word "happens." Universals are not learned in any classic sense (a point we turn to a in a later section), and thus cannot be learned explicitly.

Although POS properties are universally conditioned this does not mean that each and every language shows evidence of these universals. The claim of universality simply entails that no language can violate or deviate from these universals if that language has structures relevant to the universal. We offer a well-documented POS property to explicate our points more tangibly. Because we are focusing on null and overt subject pronouns in languages like Spanish throughout the chapter, we will illustrate with the Overt Pronoun Constraint or "OPC" (Montalbetti, 1984). We list the matched Spanish English sentences in (1) and (2) below, noting that Spanish has four possible sentences to English's two given that null and overt embedded pronouns are possible is Spanish only.

(1) a. *Cada hombre$_i$ piensa que pro$_{i/j}$ es muy inteligente.*
 b. *Cada hombre$_i$ piensa que él$_{*i/j}$ es muy inteligente.*
 c. *El hombre$_i$ piensa que pro$_{i/j}$ es muy inteligente.*
 d. *El hombre$_i$ piensa que él $_{i/j}$ es muy inteligente.*

(2) a. Each man thinks he $_{i/j}$ is very intelligent.
 b. The man thinks he $_{i/j}$ is very intelligent.

Essentially, the OPC is a universal restriction on co-reference interpretation, blocking co-reference between overt embedded subjects and variable matrix clause subjects; that is, when the matrix clause subject is either a quantified noun phrase (e.g. *each, every, all*) or a *wh*-word (e.g. *who, which X*). This restriction is seen in (1b) where only one of two otherwise reasonable interpretations is possible. The OPC only obtains if the language has a null/overt alternation (in syntactic terms, licenses *pro* or null subjects) whereby co-reference with variable subjects can be captured in the language by otherwise using a null pronoun as in (1a) when such an interpretation is intended. Since English is not a null-subject language the OPC does not constrain sentences

of this type, hence (2a) has both interpretations available. Yet, we know the OPC is universal since it constrains all null subject languages, such as Chinese, Korean, Farsi, Arabic, Italian, Portuguese, and so on. The subtlety of the restriction captured under the OPC is not straightforwardly acquirable from input alone. Beyond the fact that such sentences are of very low frequency in general, two other reasons apply: (a) it is not the case that overt embedded pronouns can never be co-referential with matrix subjects, as seen in the ambiguity of (1b), but only when the matrix subject is a small subset of variable subject expressions; and (b) the OPC can be broken under very stringent environments pertaining to prosodic considerations under discourse focus.

It is not clear how one would provide explicit information on things like the OPC. What is clear, however, is that properties of this type are not taught in L2 classrooms. Interestingly, however, L2 studies have shown successful knowledge of the OPC's application by native of English learning various L2 null subject languages such as Spanish, Portuguese, Japanese, Arabic and Korean (e.g. Kanno, 1998; Pérez-Leroux & Glass, 1999). In short, the OPC is something that cannot be learned, but is brought to bear when the evidence causes a grammar to be null-subject. Thus, things that cannot be learned are irrelevant to the explicit-implicit learning debate because they aren't learned at all; they are there from the beginning. However, those who advocate against a generative account of these innate constraints must provide an account of where they come from and how they are learned, either explicitly or implicitly, if such researchers believe that everything is learned from the input.

Aspects of languages that are derived, not learned

In addition to universals that do not need to be learned because they are innate to the human language faculty, there are aspects of language that need not be learned because they are derived via (consequences of) an interaction with universals and aspects of the particular language that are learned from the environment. The classic example of this within the generative tradition is so-called parametric clustering as well as ungrammaticality more generally. Returning to null and overt subject pronouns in a language like Spanish, it is worth pointing out that in Spanish not only are null subject pronouns permissible in basic declarative sentences, they are required in the contexts listed below. That is, overt subject pronouns are prohibited in expressions denoting:

(3)   weather: *Está lloviendo/*Ello está lloviendo.* 'It's raining.'[8]

(4)   time: *Es la una/*Ello es la una.* 'It's one o'clock.'

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8.   We acknowledge that some dialects of Spanish, most notably isolated to the Dominican Republican, may be in transition from null subject to non-null subject. See Toribio (2000).

(5)   existential statements: *Hay café./*Allí hay café* 'There's coffee.'
      (Note that *allí* is unacceptable for 'there' if it's meant as a subject)

(6)   impersonal statements: *Es imposible que así pienses./*Ello es imposible que*
      así pienses. 'It's impossible that you think that way.'

(7)   unidentified subjects: *Me robaron./*Ellos me robaron.* 'They robbed me'
      (Here the idea is that the perpetrators are not known.)

What is captured by these different sentence types is that overt subject pronouns, unlike in English, must be truly referential in Spanish; they must have some kind of tangible (semantic) antecedent. In short, Spanish has two types of null subject pronouns (referential and non-referential) and one type of overt subject pronoun (referential). Relevant to the present discussion is that learners of Spanish L2 do not need to learn this aspect of the language; it is derived once the parameter is set to +null subject. It is a byproduct of the parameter itself. Derived elements, then, do not directly rely on data in the input. As consequences of the interaction of input with language internal mechanisms, they come for free, so to speak, and the learner need not learn them in the classic sense of the word.

Perhaps the most important aspect of language acquisition that bears upon the discussion in this section is that learners not only know what comes to be permitted in a language, but also what is not permitted. Here we are not talking about the ungrammaticality of using a feminine adjective with a masculine noun, for example. Instead we are referring to those aspects of language that aren't detectable in the input. For example, in sentences (1)–(5) above, there is nothing in the input that would tell a learner that the use of overt subject pronouns is prohibited. Indeed, both pronouns are allowed in referential contexts (e.g. *hablo/yo hablo* 'I speak') depending on discourse/pragmatic considerations (e.g. Rothman, 2009). The ungrammaticality of the use of overt subject pronouns in non-referential contexts in Spanish must be derived (note that if the L1 is something like French or English, transfer would suggest that learners would want to use overt pronouns where they can't be used in Spanish, as in 'It's raining/Il pleut'). That learners come to know what is not permitted in a language makes a strong case for certain (not all) aspects of language being either part of universals or something derived from other aspects of the grammar, but certainly not learned from the input directly.

Now, we envision someone arguing that the ungrammaticality of overt subject pronouns in non-referential contexts can be learned from the absence of such pronouns in these contexts. Leaving aside for the moment whether or not the absence of something in the input leads to ungrammaticality (which cannot be true, because that would mean that people also couldn't know what was grammatical even if they haven't encountered in the input – which they clearly do; see the discussion above on the POS) there still exists the matter of how the learner comes to know so quickly that

such sentences are ungrammatical. Research on the null subject parameter by learners whose L1 is -null subject suggests that such knowledge emerges relatively soon in the acquisition process, before many other aspects (e.g. verbal morphology, as we will show later – see, for example, Rothman & Iverson, 2007). What is more, the internal grammar must link grammaticality of null and overt subjects to ±referentiality, itself a derived consequence and not one "observable" in the input.

To conclude this section, then, derived elements share something with innate elements of language: they are irrelevant to the explicit-implicit debate because they aren't learned from the environment. They simply fall out of parametric choices. Now, this does beg the question, as one anonymous reviewer suggested, as to whether what are traditionally referred to as "triggers" are explicitly or implicitly learned. The problem with this question is that it is not at all clear that "triggers" as traditionally defined are a viable construct. We will return to this issue later.

Aspects of language that are learned

Following the lines of the kind of language representation we use in this chapter, then those aspects of language that need to be learned based on input are (1) triggers for parametric variation (essentially, the PG lexicon and the grammatical features of these units), and (2) the morphological and phonological peculiarities of the L2 itself. In the case of null and overt subject pronouns, what is learned from the input itself? Clearly, the overt pronouns themselves are learned (e.g. *él* 'he', *ella* 'she') as are the morphological inflections on verbs that are linked to the licensing of null subjects (e.g. *-o* [1st, sing], *-s* [2nd, sing], *-n* [3rd, pl]). That is, the learner must get experience with these forms in the input in order for them to be internalized.

But null and overt subject pronouns are not in free variation. This we already saw in the previous section on the ungrammaticality of overt subject pronouns in non-referential contexts. Learners must also acquire the discourse/pragmatic functions of subject pronouns, linked to concepts such as topic continuity/discontinuity and various types of focus. For example, in the following exchange, both (9a) and (9b) are grammatical, but the latter sounds pragmatically odd:

(8)   ¿Qué pasó con Rafael? 'What happened to Rafael?'

(9a)   Perdió el campeonato. 'He lost the championship.'

(9b)   Él perdió el campeonato. 'He lost the championship.'

The infelicitous sounding (9b) is due to the fact that there is no topic shift from question to answer; no need to specify the subject. This situation contrasts with the following situation in which the reverse is true; an overt subject pronoun is preferred.

(10)   ¿Qué pasó entre Katie y Tom?

(11a)   Quiere divorciarse (de él) 'She wants to divorce (him)'

(11b)   Ella quiere divorciarse (de él) 'She wants to divorce (him)'

Because the preceding question establishes two possible topics, an overt subject pro-noun is preferred as in (11b) to immediately establish topicality in the response. A similar situation exists in how ambiguity is resolved in sentence interpretation where a null subject has two antecedent choices. In (12a) and (12b), when asked 'Who came back from Europe?' the speaker of Spanish prefers to have the null sub-ject of the subordinate clause take the Spec,IP (subject) of the main clause as its antecedent, whereas the overt subject pronoun is free to take either the subject or non-subject of the main clause as its antecedent (e.g. Carminati, 2002; Jegerski, Van-Patten, & Keating, 2011).

(12a)   Juan vio a Roberto después que regresó de Europa.
         'John saw Robert after he came back from Europe'

(12b)   Juan vio a Roberto después que él regresó de Europa.
         'John saw Robert after he came back from Europe'

Again, it is not a question of which of the two sentences is grammatical (both are), nor a question of whether or not the OPC (see above) is operative here (it isn't relevant to the sentence). Instead, the question is one of discourse/pragmatic *preference* among native speakers of Spanish. Most monolingual children learning Spanish as a first lan-guage do not arrive at adult-like use of null and overt subject pronouns until well into school, normally somewhere around the age of fourteen (Shin & Cairns, 2009). This finding suggests that something like subject pronoun distribution and interpreta-tion in Spanish must be learned from the input and that this takes considerable time (assuming, of course, interaction and feedback about interpretation that would natu-rally occur during communication).

What the current discussion suggests is that in terms of null and overt subject pro-nouns in a language like Spanish, learners must learn directly from the input what the pronouns are, what the verb endings are that "match" to the various subject pronouns, and what the distribution (and interpretation) of null and overt subject pronouns is.[9]

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9.   An anonymous reviewer made the following comment: "If I understood it correctly, this is a position paper that basically says most of what is learned in the L2 comes from within, i.e. UG." We're not sure why the reviewer concluded this. What should be clear from our discus-sion is that parts of the grammar are either innate or derived, and other parts are learned from the input. There is no generativist that we know of that believes that "most of what is learned comes from within." A better way to conceptualize a generative position is to say that most of what is learned is constrained/directed from within.

Quick summary

Before proceeding, it might be wise to briefly summarize what we have said until now:

– there are aspects of language that are "available from the outset"; these are universals that constrain all languages (our example: the Overt Pronoun Constraint; EPP features);
– there are aspects of language that are "derived" once a parameter is set; these are not learned directly from the input (our example: the ungrammaticality of overt subject pronouns in non-referential contexts in Spanish)
– there are aspects of language that must be learned directly from the input (our example: the specific lexical and morphological manifestations of pronouns and verb endings in Spanish, as well as the distribution of null and overt subject pronouns)

This framework can be applied to all aspects of "grammar." That is, one can take particular structures/formatives and ask the following questions: (1) which aspects of the structure are part of the universal makeup of languages, if at all?; (2) which aspects of the structure are derived as a consequence of parameter (re)-setting/derivation?; and (3) which aspects of the structure must be learned directly from the input? We now turn our attention to the explicit-implicit debate.

What does all of this mean for the explicit-implicit learning debate?

Our basic claim is that the vast majority of literature on the roles of explicit and implicit learning has failed to do two things. The first is to adopt or articulate a theory of language that can guide the discussion. The second is to differentiate, based on an accepted theory of language, those items that must be learned directly from the input from those that do not have to be and/or cannot be. Our point will be that only those that must be learned directly from the input are possible candidates for explicit learning in the first place (or for that matter, implicit learning), although as we will argue, it is not clear that all of the candidates under this condition are actually learned explicitly. What is more, we will also argue that from the standpoint of both generative theory and the language processing that mediates between input and internal mechanisms, a good number of researchers in the field have been misguided by the notion that "rules" are learned.

Candidates for explicit learning

From our discussion above, it should be clear that the only candidates for explicit learning are those forms and formatives observable in the input; namely, lexical items

and inflections (which we take to reside in the lexicon). Those aspects of language that are innate (universals) and those that are derived (such as consequences of parametric variation and much if not all ungrammaticality) are not learned from the input in the same sense. What should also be clear is what we take learning to be: the internalization of "something" from the environment. In the case of language, that "something" must be present in the input for it to be learned. That is, learning is the "extraction" and "internalization" of data from the input. For us, extraction from linguistic input refers to processing and parsing. Aspects of language that are either universal or are derived from universals are, then, not learned in this classic sense of learning. They are either there are the outset (universals) or they "happen" to learners during acquisition (derived elements).

This definition of learning is non-controversial in its simplest sense, but where controversy enters is when one begins to make claims about what is internalized. Here is where we part from a good number of researchers in the explicit-implicit debate. Traditionally, what is processed (and subsequently learned) are "rules." For example, Hulstijn (2005) says, "Explicit learning is input processing with the conscious intention to find out whether the input information contains regularities and, if so, *to work out the concepts and rules* with which these regularities can be captured" (p. 131, emphasis added). Other researchers are less direct about what is learned, referring to "knowledge" or "structures." However, a careful reading suggests they are interested in rules in the traditional sense. For example, R. Ellis's (2005) study on testing explicit and implicit "knowledge" is clearly about rules that are the focus of English language teaching as exemplified in his Table 3 (e.g. third person *-s*, question tags, *yes/no* questions, use of modals with bare verbs). For additional examples, we refer the reader to de Graff (1997), De Jong (2005), Henshaw (2011), Robinson (1995), Leow, Johnson, and Zárate-Sánchez (2011), and Spada and Tomita (2010). In all of these cases, the researchers seem to be focused on "rule learning" in the traditional sense (see also Note 4).

Our position is that this is the wrong approach to talk about what is learned (we will deal with the *how* in a moment). From a generative perspective, such rules don't exist and if they did, they are not processed and extracted from the input. Language evolves in the mind/brain as a result of processed input data interacting with language specific mechanisms – and again, to be sure, we are ignoring for the present discussion cognitive and social variables that may influence acquisition at the macro level. What are these "processed data?" Our position is that learners encounter exemplars in the input, which then trigger changes in the abstract representation of language in the mind/brain via parsing failures. In other words, learners process forms in the input, but not rules. They acquire forms from the input, but not rules. And, in the end, they "internalize" forms and formal features from the input, but not rules. Going back to our example of null and overt subject pronouns in Spanish,

we do not see that learners acquire a "rule" about the use of null and overt subject pronouns in Spanish. Instead, learners encounter null subjects in sentences like *hablo español* 'I speak Spanish.' The parser processes each word while simultaneously building a syntactic computation that can be used by the internal linguistic mechanisms responsible for language growth. The minute the parser encounters *hablo* and assigns to it the meaning 'I talk' (presumably, from context), the parser is forced to posit a null subject so that the sentence parsing doesn't crash. Why? Because under various accounts (e.g. Pritchett, 1992), the parser seeks to flesh out the theta grid (underlying thematic roles) of a verb. In the case of 'speak', this minimally means the parser is looking for something to assign the role of 'speaker.' When no such surface element is encountered, the parser can posit a null subject, thus delivering a piece of data to the language making mechanism. This procedure sets in motion the tilting of the grammar toward a null subject language, and as more such data are encountered in the input, the relevant parametric variation is instantiated along with the universals and parametric consequences associated with it. In short, the only thing that has to be "learned" in the classic sense is the verbal morphology of Spanish (as well as explicit subject pronouns themselves), which permits null subjects by providing nominal features to satisfy both the syntactic requirement of a subject and its semantic identification requirement.

Null subjects, at least in languages like Spanish, are licensed through rich verbal morphology (i.e. person-number). Thus, a consequence of the parametric variation, once the null subject status of a language is established, is finding a way to recuperate the person-number information contained in overt subject pronouns. Because the newly formed L2 grammar "knows" that rich morphology must license null subjects, the grammar then sends a signal to the processors to be on the lookout for person-number endings on verbs. These are subsequently processed and incorporated into the lexicon, although research has shown that this takes time, and it is not clear that these surface elements are susceptible to explicit learning (and teaching). VanPatten, Keating, & Leeser (2012) used self-paced reading to test learners underlying sensitivity to grammatical violations of subject-verb "agreement" (among other things). Their L2 learners were intermediate level third-year university students who were just beginning their formal studies of literature and culture. What they found was that these L2 learners did not show sensitivity to alternations such as *yo tomo/*toma* (I'm drinking) and él *toma/*tomo* (He's drinking), as measured by reading time. Native speakers did show this sensitivity. What makes this study noteworthy for the present discussion is that person-number endings are one of the first aspects of pedagogical grammar on which learners receive explicit instruction; and person-number instruction is part of every explicit treatment of verbal inflections related to tense, aspect, and mood. And yet, after three years of such instruction, learners did not show sensitivity to grammatical violations of this "basic" aspect of Spanish

grammar.[10] Note, however, that learners are not learning a "rule" for subject-verb agreement. Subject-verb agreement is a consequence of the parameter and does need not be learned. What they are learning are the specific morpho-phonological manifestations that carry the underlying features associated with such agreement (e.g. 1st/2nd/3rd, ± singular). What exists in the syntax is not subject-verb agreement per se but what is generally referred to as feature checking, as explicated earlier in this chapter, by which the person-number features on verbs must get checked in the syntax for the surface sentence to be licit.

What else has to be learned from the input in the traditional sense? As we suggested earlier, the discourse-pragmatic distribution of null and overt subject pronouns can only be acquired from input data. Thus, learners must also determine relative frequencies of null and overt subject pronouns and the contexts in which they are learned, linking these to ± topic continuity. There is no literature that we know of on the overt teaching (or explicit learning) of the distribution of null and overt subject pronouns in an L2 like Spanish. We do know that some aspects of the discourse related phenomena take considerable time to attain a level of ability similar to that of adult native speakers (both in the L1 and L2 contexts), suggesting that considerable exposure to input is required (e.g. Liceras, Díaz, & Maxwell, 1998; Rothman, 2009; Shin & Cairns, 2009).

As can be seen in this discussion, the two main candidates for explicit learning related to the null-subject parameter – rich verbal morphology and discourse related aspects of null and overt subjects – do not emerge in the grammar as a result of explicit teaching. These particular elements of language are processed from the input over time and incorporated into the grammar rather slowly, requiring hundreds if not thousands of exemplars to become robustly represented. But it remains an empirical question whether they are processed explicitly or implicitly in the input, and this is where we see the potential for generativists and psychologists to dialogue. Generative theory suggests to us what aspects of language are candidates for learning from the input, and psychological frameworks can help us research to what extent they are learned explicitly or implicitly. In a certain sense, we are suggesting that such things as generative theory and statistical learning theories (including emergentism) may not be as incompatible as is often claimed. This position has been explored in child L1 acquisition (e.g. Yang, 2004; Yang & Roeper, 2011) and we do not see why such a position is not also tenable in adult SLA.

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10.   One reviewer suggested we conflate or confound explicit instruction with explicit learning in citing the VanPatten, Keating and Leeser study. While it is true that explicit learning can happen in the absence of explicit instruction, what is clear that in the study cited here is that learners were engaged in both explicit instruction *and* explicit learning. Thus, we think the study speaks to the issue here that even some basic surface properties such as person-number endings are probably not learned explicitly (see our definition at the outset of this paper).

We now return to the issue of whether "triggers" are learned explicitly or implicitly. The problem, as we alluded to earlier, is that current theory had moved away from the idea of triggers that somehow instantaneously cause a change in mental representation. Yang and Roeper (2011), for example, review developmental data in child L1 acquisition and discuss the intersection of what a domain-specific theory of language must do as well as what statistical learning models can do. The result is a probabilistic modeling of how parameters emerge in the child's grammar over time. Again, we see this as a highly fruitful dialogue between two distinct frameworks. The time is ripe for the same dialogue to occur in the field of SLA.

Conclusion

In this chapter, we have argued for those in the explicit-implicit debate to consider linguistic theory as a means of reflecting on language. The merit of this approach, from our perspective, is twofold. First, one can more clearly articulate those aspects of language that must be learned from the input and those that do not/cannot be learned in the same way. We demonstrated this with our example of null subject as a parametric variation in a language like Spanish. Second, a theoretical perspective such as ours challenges the notion of "rule internalization" that has dominated a good deal of applied linguistic discussion, and allows for a clearer sense of what is actually learned from the input. Under this scenario, rules, if they exist, evolve over time; they are not in the input to be learned. Instead, what learners get from the input and must learn are the specific morpho-phonological forms of meanings and functions. Anything that is rule-like, then, evolves over time as learners internalize surface forms from the input. We also suggested that it may be that most of these things are generally learned implicitly, that is, without direct effort on the part of the learner to get them from the input. We provided the example of person-number morphology on verb endings in Spanish, citing research that suggests years of formal instruction and explicit learning do not seem to lead to their acquisition.

If one accepts a generative conceptualization of the formal properties of language, then, what does the future offer in terms of research and theory on explicit-implicit learning? We list some ideas here.

– First and foremost, an abandonment of looking at the acquisition of rules and instead focusing on the processing of morpho-phonological units in the input. For example, recent research by VanPatten and his colleagues in instructed L2 acquisition have used the measurement of "trials-to-criterion" for correct sentence processing. Looking at how learners process sentences during the actual act of learning as opposed to testing knowledge after the fact seems promising in this regard.

- Also useful is moving away from knowledge-testing more generally and more into the interface between knowledge and processing via techniques such as eye-tracking, self-paced listening/reading, and EEG/ERPs. Currently, these are used largely to understand the processing outcomes of acquisition. We think they can be used to study acquisition-as-processing itself.
- Because current generative accounts have moved away from the construct of rules, it would be interesting to see dialogue between generativists and emergentists, for example, on the processing of morpho-phonological units in the input. Are there areas in which the two approaches coincide? We think such a dialogue would be a tremendous contribution not just to understanding explicit-implicit learning, but also L2 acquisition more generally.

Whatever direction the debate on explicit and implicit learning takes, we hope to have at least demonstrated that linguistic theory has some ability to frame the discussion about "grammar" in ways that until now have been ignored. It is not the case that all parts of language are created equal. It is not the case that all formal aspects of language are the same. To this end, when talking about explicit and implicit learning, the profession would do well to specify the *what* of explicit and implicit learning, thus injecting some much needed articulation about the nature of language into the debate.

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