**Back to our Roots**

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With its focus on the transition from one state of knowledge to another, Charles Yang’s epistemological paper is a welcome addition to the generative perspective on language acquisition. It is an example of how generative scholars have begun to take into account usage-based explanations for some (but crucially not all) language acquisition facts. We are still waiting for usage-based scholars to do the same in the opposite direction. The Variational Learning Model (Yang, 2002) combined input effects with traditional-style universal parameterized knowledge to explain why parameters were acquired by children at different ages. The Tolerance Principle is “a method by which the learner evaluates potentially productive hypotheses about language. … a quantitative measure of the input data is absolutely crucial” (Yang, 2018, p. 24). One is left with the understanding that variational learning and input calculations are both necessary and sufficient to explain language acquisition. While I am very sympathetic to this “mechanistic” approach and I have always considered The Variational Model to be on the right track, in this commentary I am going to challenge the approach by pointing to some second language acquisition findings it (still) cannot explain.

 There is no doubt that adult second language acquisition is fraught with a lot of interpersonal variation, both in process as well as outcome. However, there are interesting observations and generalizations to be made pertaining to the process as a whole that a simple input-plus-parameters approach cannot account for. One such observation is based on the Minimalist proposal that functional categories, for example Tense Phrase (TP), host a multitude of grammatical meanings (e.g., past tense, perfective aspect, phi features) that may be related to a single piece of inflectional morphology *(–s, –ed*) or syntactic movement. In this sense, the overt morphology conflates these grammatical meanings because it is a surface reflex of all of them. How and when are they acquired? One way to operationalize this multitude is to postulate that the grammatical meanings correspond to features, and to look more closely at the differential acquisition of features depending in the complexity of their conditioning environments, as Lardiere (2009) has done. Another way is to argue (based on the Borer–Chomsky conjecture) that some syntactic and semantic information comes for free, after acquisition of features is effected, as the Bottleneck Hypothesis does (Slabakova, 2008, 2016). An input-based approach would predict that the different TP-related meanings are acquired together, contrary to fact.

 I will exemplify this observation with a well-known account from White (2003, pp. 187–193). The comparison in Table 1 includes data from Lardiere (1998a,b) and from Li (2012), in order to maintain the native (Chinese) languages 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. The data from Patty and the children, however, show uncanny parallels.

Table 1: Percentage accurate suppliance of grammatical morphemes and the syntactic effects associated with the functional category TP (following White, 2003)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 3sg agreement | Past tense on lexical verbs | Suppletive forms of *be* | Overt subjects | Nom. caseon subjects | 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 accuracy 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, even though Patty and the children do not produce the overt morphemes –*s* and –*ed* very often, they still know what the morphemes stand for and what other syntactic processes they regulate in the sentence. Another observation is that –*ed* is supplied more often than – *s*, perhaps due to the redundancy of the latter. In view of such comparisons, a legitimate question is: what is being learned until the functional morphology is supplied to criterion? Some features expressed in the same functional category (TP in this case) are acquired much earlier than others. While the Variational Model and the Tolerance Principle successfully use indirect evidence of acquisition (for example, percentages of dropped subjects in adjunct and argument questions for the null subject parameter), an added challenge would be to account for the dissociation of syntactic knowledge and morphological suppliance in L2 production. At least as far as I understand it, the Tolerance Principle would struggle with such data.

 Another challenge for the Variational Model and the Tolerance Principle could come from proposals that feature realization depends of feature co-occurrence hierarchies. Not only is the pure number of features that the affix reflects important; it is also important that nodes and their features are arranged by the grammar in feature hierarchies (Harley & Ritter, 2002). One example, provided by Lardiere (2017), comes from 3rd person singular subject pronouns in Patty’s production. Many learners of English, including Patty, often confuse the masculine and feminine forms of 3rd person sg pronouns.

 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).

 These are very specific, feature-related errors that are difficult to explain based on frequency in the input, because the errors do not appear in the input. Lardiere’s explanation lies in a feature hierarchy where case (nominative, accusative, genitive) is higher than person/number features, themselves higher than gender (masculine, feminine). She argues that the more deeply embedded a feature is within a feature co-occurrence hierarchy, the less detectable it is and the more difficulty is expected in its retrieval. Again, I believe the Variational Model and the Tolerance Principle as they stand do not offer a clear path to an explanation.

 Finally, let us look at successful L2 acquisition where the input appears to be insufficient for acquisition and cannot account for the data. Bruhn de Garavito (2011) discusses knowledge of two structures in Spanish which, on the surface, are expressed by exactly the same string of words, the impersonal passive in (1) and the inchoative in (2). In both sentences the reflexive clitic *se* is obligatory and the verb agrees with the Theme argument. The latter NP displays certain surface properties of subjects, in particular agreement with the verb and the ability to pro-drop. In spite of the similarities, these two structures exhibit important interpretive and syntactic differences.[[1]](#footnote-1)

(1) *Se vendieron las faldas*. (Impersonal passive)

 se sold-PL the skirt-PL

 ‘The skirts were sold.’

(2) *Se mancharon las faldas*. (Inchoative)

 se stained-PL the skirt-PL

 ‘The skirts got stained.’

 As Bruhn de Garavito argues, analogy would lead the learner to assume these constructions are syntactically identical. In addition, “[a]ssociation of the string with a particular situation would not be any help given that in every situation the same string is the appropriate response” (Bruhn de Garavito, 2011, p. 112). However, as she demonstrated, early (before 6 years) and late (after puberty) bilinguals were able to acquire the syntactic distinctions between these two constructions successfully. There were no differences between the judgments of both learner groups on this contrast, where the knowledge could not be derived from input alone. The author argued that the input under-determined actual knowledge. An approach that focuses solely on input-based learning algorithms would be hard put to provide an explanation.

 Of course, cases like these, and many others, constitute the hallmark argument for the existence of UG that generative SLA has been proposing since the 1980s (see White 1989, 2003 for review). The Variational Model and the Tolerance Principle provide an excellent explanation for how acquisition likely happens in the cases where the input and universal linguistic knowledge likely conspire. As Rothman and Slabakova (2017) argued, there are also many areas of language acquisition where universal knowledge is not needed, hence usage-based and generative approaches make the same predictions. But we cannot ignore the many cases like the ones pointed out in this commentary, where input plus parameter settings are not sufficient and learner knowledge is both under-determined by the linguistic input and under-represented by learner production. Generative L2 researchers are waiting for acquisition theory to take forward these relevant acquisition findings into future development of acquisition modeling.

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1. In sentences such as (1) there is an implied agent. In addition, the NP also exhibits properties only associated with objects, such as the possibility of subextraction, differential object marking and secondary predication. In contrast, in sentences such as (2), there is no implied agent and the Theme NP only exhibits subject-like properties. [↑](#footnote-ref-1)