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Native language influence at the L2 steady state

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1. Introduction

I would like to thank the organizers of the workshop on Native Language Influence in Second Language Acquisition for inviting me to contribute my perspective on the role of native language(s) influence at the L2 initial- and end-state.

Very broadly speaking, in order to learn a language, regardless of whether it is a first or tenth language, acquired as a child or an adult, the language learner must acquire a mapping between linguistic form and meaning under various contextual conditions. More specifically, to learn a grammar, the language learner must at least identify and associate formal categories and features with the lexical items of the target language, and learn how these are ordered, whether/how they can be displaced, how they relate to (may be co-indexed with) each other, constraints on these relations and displacements, and the conditioning factors associated with their expression or suppression. For subsequent second language acquisition, especially in adulthood, the learner brings to this task a fully-developed language in which these categories and features have already been previously selected and packaged (I use the term 'assembled', following Chomsky 2001) into L1-specific (morpho)lexical items. Moreover, the learner's knowledge of the constraints and conditioning factors that license or restrict their expression in the L1 is also firmly in place. Therefore, our consideration of the likely role this L1 knowledge plays in acquiring another language must be a critical component of any theory of second language acquisition (SLA).

We find in the SLA formal literature of the past two decades an attempt to address at least two broad questions regarding the nature of L1 transfer:

(1) To what extent (if any) does the L1 grammar constitute the L2 initial state, that is, the "departure point" for a learner's assumptions about the L2 grammar?

(2) To what extent (if any) is ultimate attainment of the L2 determined or delimited by the categories and features of the L1?

The first question (1), as addressed in the relevant literature, could be further broken down into two tightly related main sub-strands of inquiry:

    a. At what point does knowledge of L2 functional categories become available to the learner?

    b. Do all the functional categories and parameter values of the L1 transfer, so that the L2 learner starts out with all (and only) those categories and parameterized values that make up the L1?

Discussion of these questions preoccupied researchers interested in not only whether adult learners maintained so-called "access" to the principles and parameters of Universal Grammar (UG) at the initial stages of learning a L2, but if so, how such access was constrained by knowledge of a previously-acquired language. I will not dwell here on this discussion, but see, for example, several initial-state studies of the 1990s, including those by Eubank (1996); Schwartz & Sprouse (1994, 1996); Vainikka & Young-Scholten (1994, 1996); and see White (2003a) for a summary. In this paper, I instead will assume the "full transfer, full access" (FT/FA) position espoused by Schwartz & Sprouse (1994, 1996) for the L2 initial state, according to which the categories and features of the L1 grammar in its entirety constitute the initial state of the L2 grammar, and restructuring of the L2 grammar is input driven. Aside from this assumption, for which I believe ample support has been demonstrated in the SLA literature, I will put aside considerations of the L2 initial state and concentrate here on question (2) above, namely, the extent to which the ultimate outcome of SLA is in principle circumscribed by properties of the L1.

Question (2) above essentially asks whether native- or near-native-like grammatical outcomes are in principle even possible, once the features and categories (or parameter values within Principles and Parameters theory) of the native language(s) have been set and some sort of hypothesized critical or sensitive period has ended. Some interesting questions associated with this issue are the following:

a. Are previously unselected features still available and acquirable (in principle)?

b. What grammatical areas (if any) are particularly vulnerable to fossilization? More specifically, is this vulnerability tied to L1 influence? We will look at data from a few studies below.

c. Does L1 transfer interact with age of arrival/onset (AoA) via something like L1 "entrenchment"?

In this paper, I will focus on the first two questions (2a–b) above. Due to time and space considerations, I have little to say here about (2c), except to note that various studies (e.g., Flege 1999; MacWhinney 2005; Herschensohn 2007, 2013; Birdsong 2009) have discussed the role of the L1 in age-related declines in L2 outcomes. The term *entrenchment* itself is often used in psychology and emergentist-approaches literature, referring to the extent to which a language learner's brain has become attuned and committed to the L1, and the fact that L1 representations are progressively strengthened with use over time. So in relation to native language transfer our question, in other words, boils down to whether L1 transfer is more pronounced or difficult to overcome with increasing age. (See, for example, N. Ellis 2006; MacWhinney 2008, 2012 and various other references therein.)

Before turning to the issues raised in questions (2a–b) above, I offer a brief digression on what is meant by L2 *ultimate attainment* and *end state* (or *steady state*).

Ultimate attainment is the state of language knowledge attained at a stabilized endpoint of grammatical development, which (for SLA) may or may not be nativelike in specific respects.

The L2 end state should be understood as an idealized research construct used to describe the developmentally stabilized abstract grammatical system of a particular language for a particular speaker. How should we operationalize *end state* in L2 research? The criteria for supposing that a learner has attained a developmentally stabilized grammatical mental state are varied and to some extent arbitrary, but the following suggestions have been made (by e.g., Long 2003; Lardiere 2007):

- a criterial minimum number of years a learner has spent in the L2 environment
- a criterial minimum number of years of longitudinal study of the learner
- the extent of the learner's motivation to learn the L2
- the nature and extent of participation in the L2 linguistic environment using the L2
- the learner's proficiency level.

With respect to the last criterion, proficiency level, recall that in theory, nativelike proficiency is distinct from ultimate attainment, but in practice, if one would like to know whether some kind of grammatical knowledge *can* be attained to nativelike levels, it makes sense to seek out the most advanced-proficiency learners one can find, at least for complex, obscure or otherwise difficult phenomena in question.

Finally, we might ask why the question of (persistent) L1 influence at the L2 end state is even interesting. It is an issue that leads to further questions: Although it is the case that most mature L2 learners do not attain nativelike convergence in all or most respects of the L2 grammar, *can* they? And does this ability vary according to the particular L1 background of a particular L2 learner? What are the differences and/or similarities with respect to native speaker development that might be due to knowledge of the L1? Are certain L2 linguistic domains more or less vulnerable than others for speakers of particular L1s? If so, why? Investigating these questions can help us tease apart the more specific effects of L1 knowledge from more universal developmental effects in the course of SLA, inform our understanding of age-related declines in language learning ability and more effectively direct our language-learning and language-instruction efforts.

With this background in place, let us turn to some discussion of the questions in (2a–b).

2. Are previously unselected features and categories still available and acquirable (in principle)?

As a methodological point, in order to effectively address this question one often needs to find the highest-proficiency (ideally, near-nativelike) learners one can. Lower-proficiency learners can be tested in addition if we are also trying to determine at what developmental point some sort of L2 knowledge becomes available.

There have been several approaches and hypotheses advanced over the past decade that address the extent to which the L1 plays a deterministic role in the ultimate attainment of the grammar of a second language. Some of these are listed and briefly summarized in (3) below.

(3)
Representational Deficit hypotheses (e.g. Hawkins 2003; Hawkins & Hattori 2006; Tsimpli & Dimitrakopoulou 2007; Tsimpli & Mastropavlou 2008): Also known as the *Interpretability Hypothesis*, this view proposes that (uninterpretable) morphosyntactic features required by the L2 but not previously selected or activated in the learner's L1 are in principle no longer acquirable, due to maturation or critical period effects.

Interface Hypothesis (Sorace 2003, 2011; Sorace & Filiaci 2006): Although features of narrow syntactic properties of the L2 are ultimately acquirable, (interpretable) interface properties involving the integration of syntax and another cognitive domain, particularly discourse/pragmatic information, may not be acquirable, if these properties are required in the L2 but lacking in the L1.

Prosodic Transfer Hypothesis (e.g., Goad & White 2004, 2006, 2008; Goad, White & Steele 2003): Nativelike attainment of functional morphology will be difficult or impossible if a prosodic representation required by the L2 (say, for affixation) does not exist or is illicit in the learner's L1.

Fossilization under FT/FA (Schwartz & Sprouse 1996): Although FT/FA was proposed as a theory of the initial state, Schwartz & Sprouse also predict that endstate variability or fossilization will occur if L1 parametric values differ from those of the L2 and there is no positive evidence available in the input that could cause grammar restructuring.

Multiple Grammars Theory (Amaral & Roeper 2014; (cf. Roeper 1999 for L1A): Grammar rules are continuously added to, rather than replaced (thus, no restructuring, technically?) for both L1 and L2 development. L1 and L2 (and ... Ln) grammars are therefore not truly distinct, and a L1 rule for the L2 is always available if it cannot be inhibited in performance, thus leading to potentially permanent variability.

Feature Reassembly approach (Lardiere 2008, 2009): Successful acquisition of both interpretable and uninterpretable morphosyntactic features is ultimately possible in principle, but is likely to be developmentally delayed in cases where an L2 feature is realized in a different way (different category, different type of lexical item, different co-occurring features, etc.) under different conditioning environments than in the L1.

3. What do the data show?

I review below some sample representative endstate (and/or high-proficiency) learner studies; time and space constraints prevent the inclusion of others.

Patty (L1s Mandarin/Hokkien–L2 English, Lardiere 2007)

The data obtained from Patty are from a longitudinal case study spanning 16 years, for which the claim that Patty had reached a L2 developmental steady state under near-ideal L2 immersion conditions could be reasonably well established. The main finding was

evidence for a dissociation of productive inflectional morphology from underlying syntactic knowledge exhibiting, for example, the following characteristics:

- frequent omission of inflectional finiteness marking (past tense/3s agreement) but perfect pronominal case-marking on subjects as function of clausal finiteness, and native- or near-nativelike knowledge of verb (non-)raising, adverb placement, and the requirement for overt subjects. When supplied, tense-marking was typically used appropriately (94%).

- frequent omission of past participle verbal inflection but targetlike NP-raising in passive constructions.

- excellent control of English question formation, *do*-support, subject-aux inversion, relative clause formation including appropriate preposition stranding, *wh*-movement and knowledge of (subjacency) constraints on movement.

- occasional omission of articles but excellent knowledge of abstract properties of a [+definite] feature, including the absence of any definiteness-effect violations in existential *there* constructions.

But because inflectional morphology is considered by many to be one of the most difficult components of grammar for adults to master, can we tease apart that overall general difficulty from the effects of L1 transfer? We can compare Patty's case with the case study of SD (L1 Turkish–L2 English) by White (2003b). White explicitly looked at the effect of L1 transfer, comparing SD to Patty on the production of L2 English determiners and verbal inflection. She hypothesized that (a) SD's production of English articles should be lower than that for verbal inflection, because Turkish has rich verbal inflection but no articles; and (b) SD's production of English verbal inflection should be higher than Patty's, because Turkish has rich verbal inflection whereas Chinese doesn't. Both these hypotheses were supported. White's results suggest a persistent L1 effect for acquisition of morphology. The presence of overt morphology in the L1, she writes, "appears to sensitize the L2 speaker to the requirement for overt morphology in the [L2] ... and to facilitate its use" (White 2003b:23). Additional support for this conclusion comes from studies by Orr (1987); Hopp (2010, summarized below); and Yuan (2010, summarized below).

Despite Patty's demonstrated robust knowledge of English syntax as sketched above, we nonetheless find some vestiges of L1 transfer in her L2 endstate syntax. These include the following:

- (Extremely rare) production of resumptive pronouns in a relative clause:
    one of the Chinese author that I really like her a lot

- The production and acceptance of L1-like clause juxtaposition (under a single intonation contour):
    I have friends from Indonesia also speak Hokkien
    and have a lawyer works on the case
    his buddy at the time was an older lady we hang out a lot together
    it is very interesting letter from captain Bill shared his experience

- L1-like 'pseudo-passives' (cf. Yip 1995):
    these flowers can eat (cf. can be eaten)
    I thought you may interest (cf. be interested/have interest?)
    I heard his car has to toll [= tow] *away* (cf. be towed away)
    you would amaze (cf. be amazed)

In each of these areas, however, Patty's production of L1-like structures should be evaluated within the context of her much greater relative targetlike production of these constructions in English, that is, excellent targetlike relative clause production (with targetlike prepositional stranding, which is not allowed in her L1s) and targetlike clausal subordination more generally, and targetlike production of passives. The overall findings do not support either the Representational Deficit or Interface Hypotheses, nor fossilization under the FT/FA hypothesis, but are more consistent with Prosodic Transfer, Feature Reassembly, and possibly Multiple Grammars.

The interpretation of variable wh-expressions in L2 Korean (L1 English, Choi 2009; Choi & Lardiere 2006).

This study investigated whether it was possible for native English speakers, whose L1 contains (displaced) wh-expressions with both [WH] and [Q] features (e.g., *who*, *what*) to acquire targetlike interpretations in L2 Korean of variable wh-expressions in embedded clauses, in which the [±Q] reading is not intrinsic to the wh-expression but rather is licensed by co-occurring verbal affixes (e.g., *mues* 'thing' can be interpreted as either *what* or *something* depending on such licensing):

(4) a. John-un   Mary-ka   mues-ul   sass-*nunci*   an-ta.   [+Q]
       John-TOP   Mary-NOM   'thing'-ACC   bought-Q   know-DECL
       'John knows *what* Mary bought.'

    b. John-un   Mary-ka   mues-ul   sass-*ta*-ko   an-ta.   [–Q]
       John-TOP   Mary-NOM   'thing'-ACC   bought-DECL-C   know-DECL
       'John knows that Mary bought *something*.'

Although the Korean native speaker controls performed perfectly, only 4/24 of the most advanced-proficiency L2ers performed like Korean NSs in both production and judgment tasks; none of the intermediate learners did. Most L1 English speakers overgeneralized the [+Q] interpretation to [–Q] contexts, as the [+Q] operator feature is fused in the corresponding lexical item 'what' in English. Note that a Representational Deficit/ Interpretability Hypothesis might conclude that resetting the uninterpretable 'strong' wh-feature that is responsible for wh-movement would pose difficulty for L1 speakers of a language with wh-movement, whereas acquiring the correct distribution of the interpretable [Q] feature should be unproblematic. Just the opposite, however, proved to be the case in this study: L1 English speakers had no trouble resetting the 'wh-strength' feature to the 'weaker' wh-in-situ value; however, splitting off and redistributing the interpretable [Q] feature proved much more difficult, thus supporting Feature Reassembly. What can be concluded from this study is that L1 influence, while stubbornly persistent for most learners in this study, can nonetheless eventually be overcome by some learners at the highest proficiency levels; that is, knowledge of the licensing function of the distinct

verbal affixes is difficult to acquire, but was not ultimately impossible at least for some learners.

The interpretation of variable (wh-argument) expressions in highly-proficient L2 Mandarin Chinese by L1 English or Japanese speakers (Yuan 2010).

Mandarin Chinese is another wh-in-situ language for which the interpretation of variable expressions is licensed by co-occurring particles or lexical items. For example, the variable expression *shenme* ('thing') can be interpreted as a wh-question word or a quantifier expression depending on how it is licensed, as shown below (examples from Yuan 2010: 220, italics added):

(5) a. Ni   xiang   mai   *shenme*   (ne)?
     you   want   buy   what   (wh-Q)
     '*What* do you want to buy?'

   b. Wo   *shenme*   *dou*   xiang   mai.
     I   what   all   want   buy
     'I want to buy *everything*.'

   c. Wo   *bu*   xiang   mai   *shenme*.
     I   not   want   buy   what
     'I don't want to buy *anything*.'

Yuan tested knowledge of existential polarity interpretations with a variety of potential licensers, some lexical (e.g., *renwei* 'think', *meiyou* 'did not', *ruguo* 'if') and some grammatical (e.g., bound sentence-final particles *-ma* 'Q', *-le* inferential marker) (see his Table 4, p. 233 for the complete list). Note that the most advanced-proficiency L1 Japanese (JA) and L1 English (EA) groups were considered to have "steady-state"/"final state"/"end-state" L2 Chinese grammars" (pp. 240 & 244–5), and included (L2) Chinese language lecturers and professors (p. 231).

For the advanced groups, Yuan found the following:

• Both the JA and EA groups did not significantly differ from the NSs on all lexical category licensers; i.e. these were acquired. Note that this function for one of these lexical items (*ruguo* 'if') was acquired significantly earlier (i.e. at lower levels of proficiency) by the L1 Japanese groups.

• Both the JA and EA groups (and all learner groups) significantly differed from the NSs on the grammatical inferential particle *-le* and the negator *A-not-A* construction; that is, these were not acquired as existential polarity licensers by any learner group (however, the latter construction showed some variability even among the NSs).

• The JA, but not the EA, group acquired the existential polarity licensing function of the grammatical Q particle *-ma*. Yuan suggests this is "possible evidence of fossilization" for the EA group.

Based on these results, Yuan concluded that (a) there is a "long delay" in L2 acquisition of the syntax/semantics interface between Chinese existential polarity items and their licensers, but success or failure does not occur across the board for all the individual

licensing items; and (b) there is some evidence for persistent L1 transfer (positive and negative) for both the JA and EA groups (i.e., *wh*-words can be used as existential polarity items in Japanese but not English; but English does use some lexical-category words for licensing negative polarity items such as *any*). Yuan suggests that his results do not (fully) support Sorace & Filiaci's (2006) Interface Hypothesis because it would be difficult for that approach to explain why, at the syntax/semantics interface, the relationship between existential polarity items and their licensers is eventually successfully required for only some of these licensers but not others. He argues that potential licensers are acquired piecemeal, as individual lexical items, and individually syntactically "wired" to the existential polarity items they license. Though Yuan does not discuss Feature Reassembly, from my perspective this is just the sort of result that a feature reassembly approach would predict, because the pertinent L2 features are realized in different ways for different types of lexical items, with different co-occurring features under different conditioning environments.

The interpretation of L2 English definite plurals by L1 Spanish or L1 Korean speakers (Ionin & Montrul 2010).

Because definite plural DPs can be generic in Spanish (*los leones*) but not English (*the lions*), Ionin & Montrul asked whether L1 Spanish learners of L2 English would overgeneralize generic interpretations. Because bare nouns can be specific in Korean but not in English, they also asked whether L1 Korean speakers could learn that specific nouns in L2 English require definite articles, since Korean lacks articles.

For L2 English, then, the learning tasks Ionin & Montrul were interested in were the following: L1 Korean speakers have to unlearn the possibility of a specific reading of bare plurals, which exists in Korean but not English; however, it was hypothesized that this difficulty would be mitigated by extensive classroom instruction on English articles. L1 Spanish speakers, on the other hand, have to unlearn the possibility of a generic reading for definite plurals, which exists in Spanish but not English; it was assumed that this difficulty would be unmitigated, due to virtually non-existent classroom instruction on not using definite articles generically in English.

For the lower-proficiency L2 groups, Ionin & Montrul asked whether L1-Spanish and L1-Korean L2-English (EFL) learners would transfer the interpretation of definite plurals and bare plurals from their L1s to English. They found that the L1 Korean speakers were significantly more accurate than the L1 Spanish speakers at interpreting definite plurals as specific rather than generic in L2 English. The individual results showed targetlike performance for 16/29 L1 Korean speakers, but only for 1/24 L1 Spanish speakers. Twenty out of 24 L1 Spanish speakers overgeneralized a generic interpretation for English definite plural DPs.

For advanced-proficiency groups, Ionin & Montrul asked whether L1-Spanish and L1-Korean L2-English (ESL) learners (immersed in the US) would be able to recover from L1 transfer and acquire the target interpretation of English definite plurals and bare plurals. The short answer here is yes, performance for most participants (55%) in both groups was targetlike, with no difference between the two L1 groups.

Finally, their most interesting question (at least from a feature reassembly perspective) was the following: What is more difficult?—to learn to limit a generic interpretation to bare plurals (in the case of L1 Spanish speakers), or to acquire a new category (the definite determiner) along with its corresponding semantics (in the case of L1 Korean speakers)? They concluded that it was more difficult to limit generic interpretation to bare plurals, that is, to 'delink' genericity from definite plurals in L2 English (by L1 Spanish speakers). In other words, they write, "selecting features for a new category is easier than reassembling features on an existing category" (p. 907).

Detection of grammatical anomalies in L2 German by L1 Dutch, English, or Russian near-native L2 German speakers (Hopp 2007, 2010).

The last study I will mention here is that of Hopp (2007, 2010), who tested very high-proficiency, including near-native, L2 end-state speakers of German on their knowledge of German scrambling, case-marking and subject-verb agreement. The L1 languages were Dutch, English or Russian. Among those participants with near-native L2 German proficiency, all three L1 groups achieved nativelike sensitivity to case-marking and subject-verb agreement errors in offline and self-paced online tasks, indicating knowledge of the relevant morphosyntactic contrasts. However, only the L1 Russian near-native group attained nativelike performance on detecting case-marking violations on a speeded online grammaticality judgment task. Since out of the three L1 groups tested, only Russian has morphological case marking, Hopp concluded that Russian native speakers bring to L2 German their L1 processing routines that access case features and match them to morphophonological forms in German (Hopp 2007: 359).

In this study, then, it appears that persistent L1 influence affected L2 processing efficiency. Even though all the near-native L2 groups attained reliable nativelike *knowledge* of the inflectional contrasts in question, effectively refuting the likelihood of a representational deficit, when performance demands were increased, the processing routines of the Dutch and English L1 groups were less automatized than those of native speakers or L2 speakers whose L1 has a somewhat similar inflectional contrast. Hopp supported this claim with a demonstration that when performance demands are increased even further, even the native speakers' processing efficiency will break down.

4. Some general conclusions

The studies cited above along with several others point to the conclusion that we see evidence of persistent L1 influence even at the L2 end state. Our ability as researchers to discern end-state transfer effects likely depends on the particular language pairing, the particular grammatical aspects tested, and the types of tasks used (e.g., production vs. interpretation, online vs. offline, etc.). On the one hand, some studies show that some learners are able to overcome L1 influence at advanced stages of proficiency; on the other, it may be the case that even when learner knowledge appears to be completely nativelike, vestiges of L1 influence may persistently affect the speed and efficiency of L2 processing.

Can we predict which particular learners will ultimately attain nativelike L2 grammars? This seems unlikely to me. Nonetheless it is clear that some L1–L2 pairings (among other

factors) pose more difficulty than others, especially in certain domains such as inflectional morphology. While knowledge of the grammatical features and contrasts in any language appear in principle to be acquirable by at least some learners, contra Representational Deficit/Interpretability Hypothesis approaches, the extent to which such features must be identified, redistributed and subject to L2 conditioning factors that differ from those of the L1 will almost surely impact difficulty and the likelihood of nativelike ultimate attainment in the second language.

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