Assessment of the Full Transfer Account [1]

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This paper examines representative second language (L2) studies within the generative framework that propose an explicit hypothesis about the nature of the initial state in L2 acquisition, focussing on their particular accounts of interlanguage systems at the initial stage and early stages: e.g. the first language (L1) full transfer account. Examining the theoretical underpinnings of the hypothesis, the subsequent claims of the L1 full transfer account, and the data used to support the hypothesis, I elucidate where and how this hypothesis fails and succeeds in account of interlanguage systems at early stages of L2 acquisition, and I show that the Economical Parameter-Setting model can accommodate the L2 acquisition data that cannot be captured by the hypothesis. At the same time, this examination pursues the suggestion that the Economical Parameter-Setting model can be successfully applied to L2 acquisition (Bong 2005).

Introduction

In recent second language (L2) acquisition studies that investigate interlanguage systems within the generative framework, in which the acquisition of syntax (interchangeably, grammar) is the process of parameter-setting, a large number of explicit hypotheses have been proposed about the nature of the initial state in L2 acquisition, as well as various claims about the kind of development that can be expected subsequently (White 2003). This paper focuses on the view that the initial state in first language (L1) acquisition is different from that in L2 acquisition.[2]

Various studies under this view put forward the 'various degrees of L1 transfer accounts' in which the initial state of L2 is different from that of L1 acquisition to the extent that various parts of a real contingent grammar (i.e. the parameter-setting of L1) have been temporarily (initially) transferred to interlanguage systems of early stages of L2 acquisition. The term 'initial transfer' implies that the initial state of L2 grammar includes various parts of L1 grammar. More specifically, L2 learners begin with an initially specified hypothesis that all or some of the L1 grammar is identical with the L2 grammar, and they then change the initially specified hypothesis to a hypothesis or a parameter-setting derived from the L2 input, consulting Universal Grammar (UG) fully when all or part of the L1 grammar cannot accommodate the L2 input. In addition, various L1 transfer accounts accompany such claims as what L2 learners ultimately

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2   In L1 acquisition, the initial state is assumed to be Universal Grammar (UG) (Chomsky 1981). In other words, the concept of UG is of an innate linguistic knowledge stored in the cognitive system called the faculty of language (FL) (Chomsky 1993, 1995, 2000a, b, 2001), which determines not only the grammars of particular languages but also the grammars of all possible natural (human) languages (Chomsky 1981).

acquire (including apparent failure) differs from what L1 learners acquire because L2 learners encounter various intractable problems specific to L2 learners due to transfer of L1.[3] There are three representative hypotheses of the L2 initial state proposed in the L2 literature: (i) the Full Access/Full Transfer Hypothesis states that the L2 initial state is determined in its entirety by 'full transfer' of L1 grammar (Schwartz and Sprouse 1994, 1996); (ii) the Minimal Trees hypothesis states that the L2 initial state is partially constituted by 'partial transfer' of L1 properties of lexical categories (Vainikka and Young-Scholten 1994, 1996a, b, 1998); and (iii) the Valueless Features Hypothesis states that the L2 initial state is weakly determined by 'weak transfer' of L1 properties of lexical and functional categories without their feature values (Eubank 1993/1994, 1994, 1996).

This paper focuses on the Full Access/Full Transfer Hypothesis, leaving other two partial transfer accounts for Bong (to appear). While investigating whether the L1 full transfer account, according to which the L2 initial state is fully specified by L1 parameter values, is adequate or not, I argue that the role of L1 parametric values (L1 grammar) is more limited than in the L1 full transfer account. Instead, I suggest that the L1 parametric values are merely candidates for L2 learners to consider in seeing and determining parametric values that shall capture L2 input. I further argue that the L1 full transfer account is neither sufficient nor necessary to account for observed early L2 acquisition phenomena. Instead, I suggest that the non-specified initial state account, according to which L2 learners do not have any specified initial hypotheses about L2 grammar, but have an initial preference for economical options as expected under the government of economy principles, can accommodate the L2 acquisition data that cannot be captured by the various L1 transfer accounts (Bong 2005).

This paper examines two representative L2 studies of the Full Access/Full Transfer hypothesis about L2 acquisition, proposed by Schwartz and Sprouse (1994, 1996). This paper begins with a brief description of the claims of the Full Access/Full Transfer hypothesis and analysis of the L2 data used to support these claims, followed by reexamination of the L2 data, counterarguments, and discussions of limitations of the hypothesis. Lastly, summarizing the discussion, I conclude that the L2 acquisition phenomena in question have not been systematically accounted for by the previous L1 full transfer account.

The Full Access/Full Transfer Hypothesis: Claims and Data Analysis

Schwartz and Sprouse (1994, 1996) propose the Full Access/Full Transfer hypothesis. Their principal claims are that the L2 initial state consists of the entire L1 grammar: this amounts to the 'full transfer' claim; and that the L2 initial state (namely the mature state of L1 grammar) changes with the help of UG whenever the L1 grammar is unable to accommodate properties of the L2 input: this amounts to the 'full access' claim.[4] Consequently, it is predicted that as a result of UG-sanctioned expansions from the L1 grammar to accommodate larger amounts of L2 input, some interlanguage systems may contain constructions that are not permitted in the target language, but are nevertheless UG constrained. In addition, it is postulated that this expansion process is constrained by the 'determinacy problem' and the 'de-learning problem' due to certain L1 properties, and that these problems are thus specific to and distinctive of L2 acquisition, sometimes leading to a 'fossilization' in L2 acquisition.

To support the claims of the Full Access/Full Transfer hypothesis, Schwartz and Sprouse (1994)

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3   Under this view, the apparent failure in L2 acquisition is sometime accounted for by postulating breakdown in compu- tation between syntax and morpho-phonological components, the so-called Mapping Problem (known as 'Missing Surface Inflection') proposed by Lardiere (1998a, b, 2000). However, this view does not allow one to pursue further he question of why L2 learners have the tendency to miss out particular inflections or of why L2 learners produce something that is not in conformity with the L2 input.
4   See such studies as Haznedar (1997) and Slabakoa (2000) among others, which advocate the hypothesis.

refer to the persistent appearance of L1 properties in the early interlanguage systems (Full Transfer), and to occurrences of restructuring away from the L1 grammar (Full Access). Schwartz and Sprouse (1994) examine 26 months of spontaneous production data from an adult Turkish-speaking learner of German, from the ESF (European Science Foundation) project (Klein and Perdue 1992). Both German (L2) and Turkish (L1) exhibit SOV (Subject-Object-Verb, known as V-head final) word-order in embedded clauses, but only German exhibits the verb-second (V2) phenomenon in matrix clauses: movement of the finite verb to the second position, namely the head C (Complementizer) position of CP (Complementizer Phrase).

Schwartz and Sprouse's (1994) examination of the interlanguage systems focuses on three grammatical aspects relevant to the V2 phenomenon: (i) the position of the verb, (ii) types of subject (pronominal or non-pronominal) and (iii) nominative Case assignment. The developmental patterns in regard to finite verb ($V_{[+F]}$) placement in matrix clauses can be schematised in (1) below. Schwartz and Sprouse (1994) interpret the observed developmental patterns as indicating that although the experimental subject's interlanguage systems were far from equivalent to a German native speaker's grammar, it contained a system that had been restructured away from the L1 grammar with its rather restricted way of forming Turkish embedded clauses.[5]

(1) Summary of developmental patterns (years; months, days)

Stages	Patterns	Examples
a. Stage 1 (0;3,20~0;7,8)	SVX/O	Der Chef hat gesagt [der Zug fährt ab] The boss has said the train goes away
	$(X)SV_{[+F]}O$	Jetzt er hat Gesicht [das is falsches Wagen] Now he has face that is wrong car 'Now he makes a face (that) that is the wrong car.'
b. Stage 2 (0;11,7~1;10,14)	$(X)SV_{[+F]}O$	in der Türkei der Lehrer kann den Schüler schlagen in the Turkey the teacher can the pupil beat 'in Turkey the teacher can hit the pupil'
	$(X)V_{[+F]}S_{[+pronoun]}$	dann trinken wir bis neun Uhr then drink we until nine o' clock 'then we will drink until nine o' clock'
c. Stage 3 (2;1,3)	$(X)SV_{[+F]}O$	später der Charlie wollte zum Gefängnishaus later the Charlie wanted to-the prison 'later Charlie wanted to go to the prison'
	$(X)V_{[+F]}S_{[+/-pronoun]}$	das hat eine andere Frau gesehen that has an other woman seen 'another woman saw that'

According to Schwartz and Sprouse (1994), the observed fact that the interlanguage system contains remnants of the L1 Turkish grammar is evidence of L1 transfer; the functional CP system is evidence of a fully-fledged functional system at L2 initial and early stages; and novel aspects (not instantiated in L1

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5 Turkish Embedded Clauses (examples from Schwartz and Sprouse 1994)
    (i) Duydum [ki [sen   gel –ecek –sin]]
       I-heard   that you-SG come –FUT –2SG
       'I heard that you will come.'

grammar) are evidence of restructuring away from the L1 with recourse to UG. The authors' analysis of the developmental patterns observed is as follows.

First, the most common word-order pattern $XSV_{[+F]}O$ observed across the Stages (1, 2 and 3) in the L2 acquisition data, which is strictly not allowed in the L2 German grammar, is analysed as follows: in the interlanguage system, (i) the head C position is used as the landing site of 'finite verb-fronting' (V-to-C movement) as a result of UG access and of restructuring away from the L1 grammar with its OV order, (ii) the [Spec CP] position is used as the landing site of 'subject-fronting' to receive nominative case in the CP system under the Spec-Head agreement as a result of making a particular use (a carry-over) of the nominative case assignment mechanism of Turkish, and (iii) the adjunction to CP (presumably, multiple Specs of CP) is for the optional elements (X, such as AdvP or PP) as a result of being a carry-over from the L1 Turkish scrambling.

Secondly, another pattern $(X)V_{[+F]}S_{[+/-pronoun]}$ observed at the later stages (Stage 2 and 3), which occurs in German, is identified as being distinct from German: not a real V2 grammar in the interlanguage system, but still a $V_{[+F]}$ movement to C. The majority of subject expressions appearing in the $(X)V_{[+F]}S_{[+/-pronoun]}$ pattern were pronominal subjects: $V_{[+F]}S_{[+pronoun]}:V_{[+F]}S_{[-pronoun]}$ =69:1 (out of a total of 70 instances) at Stage 2; and 67 :8 (out of a total of 75 instances) at Stage 3. Prompted by such differences in the number of instances, Schwartz and Sprouse (1994) analyse the postverbal pronominals in the interlanguage system of Stage 2 as now being incorporated into a finite verb ($XVS_{[+pronoun]}$) that has moved to C, to satisfy the Case Filter,[6] and analyse non-pronominal subjects as still being case-assigned under the Spec-Head agreement in the CP system as a result of moving both V and S (subject) to the CP system(as at Stage 1, as well as at Stage 2, and presumably at Stage 3).

Thirdly, for the pattern XSV (V3rd not V2nd) observed throughout the three stages, the optional elements (X) such as AdvP or PP are analysed as an adjunction to CP that occurs as a result of a carry-over from the L1 Turkish scrambling. The authors predict that this pattern XSV will be subject to fossilization (survival) in Turkish-German interlanguage grammar because there will be no L2 input data that could force the 'delearning' of adjunction to CP (L1 grammar).

The analyses summarised above lead the authors to conclude that the strict V2 constraint in Turkish-German interlanguage grammar will never mirror that in adult German grammar, that UG is fully consulted in L2 acquisition when the L1 grammar cannot cover the L2 input, that the problem (or difficulty) for L2 learners is not in the resetting or setting of parameters, but in 'de-learning' the L1 grammar once set, and that 'L1 influence is absolute': namely the Full Transfer claim.

Reexamination

By reexamining Schwartz and Sprouse's (1994) analysis of the data, I argue that the Full Transfer account and consequently the delearning process are neither sufficient nor necessary to account for interlanguage systems. My argument relies on pointing out shortcomings of the authors' analysis: e.g. it is L1-biased; it disregards the role of both obscurity and ambiguity found in the L2 input; it over-elaborates movement in early stages; and it encounters problems arising from the postulated 'delearning' process.

First, let us consider whether the authors' analysis of interlanguage systems is L1-biased or not. One of the most valuable insights in Schwartz and Sprouse (1994) is the suggestion that the L2 learners' linguistic phenomena should be analysed in the light of the rest of the learners' linguistic system, regardless of what appear to be similar phenomena in the target language (L2). However, their own analysis of

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6   See Rizzi and Roberts (1989) for the observation that only pronominals can occur after a verb in French questions.

linguistic phenomena in the interlanguage system developed by the Turkish learner seems to be biased towards an analysis that assimilates them to similar phenomena in the L1 Turkish grammar. The starting point of their analysis of the interlanguage system seems to be established on the preconception that the L2 learner's hypothesis about L2 grammar is that it is identical with the L1 Turkish Grammar. That is to say, the interlanguage system is analysed in search of remnants or regenerated parts of the L1 grammar, instead of being seen objectively as an interlanguage independent of not only the target language (L2) grammar but also the L1 grammar.

If we abandon the preconceived idea that the interlanguage system is established on the foundation of the L1 grammar, we can deduce a completely different underlying grammar from the interlanguage system presented by Schwartz and Sprouse (1994). In the earlier interlanguage system (Stage I), obviously V appears initially in the (X) SVO pattern in both main and functionally subordinate clauses as in (1), and in the SVO or S-Aux-V-CP (SV-clause) patterns as in (1), all of which are allowed in English for instance, but not allowed in either L2 German or L1 Turkish, which exhibit SOV (SOV-Aux) word-order pattern in embedded clauses. All these word-order patterns observed in the interlanguage system seem to suggest that the underlying grammar hypothesized by the L2 learner is actually similar to (if not exactly conforming to) English, definitely not Turkish, and contrary to the specified initial state with L1 grammar (the full transfer claim). Alternatively, the interlanguage system appears to be structured in response to properties of the L2 input interacting with UG, and to the results of L2 learners making and testing hypotheses about the target L2 grammar.

Secondly, Schwartz and Sprouse (1994) do not seem to consider the role of obscurity and ambiguity found in the L2 input. The SOV pattern in German is partially obscured in surface syntax (i.e. the L2 input) by the verb-second (V2) phenomenon in matrix clauses. In other words, the finite V to C movement (V2 phenomenon) in German matrix clauses can be easily disguised and obscured in the L2 input, owing to such possible surface orders as SV[+finite] input string in main clauses. It may look like an English surface syntactic manifestation. This obscurity may have caused L2 learners to misanalyse the L2 input as having an underlying structure like English at earlier stages (owing to not enough exposure). It is not evident that the L1 grammar is the basis of misanalysis of this kind or of causing the delearning problem in establishing such an interlanguage system. It seems on the contrary very likely that the surface word-order pattern of the L2 input per se obscures the underlying structure as in the V2 phenomena. At later stages, the finite verb movement to the left headed C position seems to be developed from the English underlying structure: e.g. the XV[+F] S pattern is derived from X SV[+F] in matrix clauses.

Thirdly, Schwartz and Sprouse's (1994) elaborate description of movement phenomena in the interlanguage system, intended to show some indication of restructuring away from the L1 grammar, is not only uneconomical but also poorly motivated. In fact, their analysis, based on the movements of both V and Subject NP to the CP system, which they use to account for the pattern SVO in the interlanguage system, contradicts their own claims about the delearning process and the determinacy problem in L2 acquisition. That is, the postulation of a 'delearning' process necessitated by the existence (initial transfer) of L1 grammar seems to be problematic. The 'delearning' process is additionally involved in L2 acquisition, because L2 learners start out with L1 grammar. This delearning process causes the difficulties experienced by L2 learners in getting the target grammar right. This implies that those properties of L2 grammar that differ from properties of L1 should always cause problems for L2 learners. Then, if the L2 learner were exploiting the L1 grammar to begin with to accommodate the L2 input in which finite verbs appear in the second position, the L2 learner would have been faced with the task of having to delearn the L1 V –final characteristic (as a heads-final order, S(NP)-O(NP)-V-T-Agr agglutinated form): that is, in Turkish, neither V finite nor non-finite verb can move either by scrambling (only XP can be scrambled) or by head movement (no overt head movement). Therefore, if the Turkish learners were to restructure

the L1 grammar, they would always begin with non-movement (no V2) L1 structure with heads-final: [CP left *C* [AGRP-TP NP (Subject) [VP NP (Object) V] **T-AGR**] right *C*], as a basis of establishing an interlanguage grammar. Moreover, in the analysis of Schwartz and Sprouse (1994), at the very earliest stage, finite verbs move to the left-headed C position, without any delearning of the V-final characteristic of the L1 and without the indeterminacy problem of the head position of C, which is the landing site for the finite verb movement. In Turkish, according to Schwartz and Sprouse's (1994) presentation of the analysis of the Turkish C system by Kornfilt (1984), there are two kinds of C exponents, namely, right headed C and left headed C: one appears in a clause initial position (a left headed/head-first C, e.g. *ki* 'that'), the other appears in a clause final position (a right headed/head-final C, e.g. *diye* 'that/because'). Why the right-headed C position is not actually utilized by the Turkish learner remains unexplained. In other words, under the full transfer claim it is unclear what elements are involved with delearning and what elements are not.

Lastly, their postulation that the delearning of the L1 CP adjunction, in other words delearning of scrambling, gives rise to a possible fossilization or non-convergent grammar in L2 acquisition is not convincing. In effect, CP adjunction can be observed not only in Turkish but also in many languages like English as well. CP adjunction can be merely transitory (temporary) as an effect of non-native-like developmental passages to get a V2 phenomenon right: e.g. by testing a CP-shell (FocP/TopP/CP) to motivate the elements in the CP system or to motivate adjunctions either to the CP system or to the TP/AgrP system while keeping the SV in TP/AgrP. Nonetheless, the determinacy problem due to the delearning process, which is specific to L2 acquisition, causes interlanguage systems to diverge from the target language grammar. This implies that any specific grammatical divergence observed in interlanguage systems will always have been caused by the inability of L1 grammar to handle the L2 input, contrary to what we have just seen. In addition, the emergence of divergent grammars is not specific to L2 acquisition; it happens in L1 acquisition as well. Sometimes a grammar (i.e. a specific parameter setting) acquired by children is notably different from any grammar in the previous generations (Lightfoot 1999). This is a case of grammar change. Thus, it seems more plausible to claim that it is not the L1 knowledge that causes such diversity in interlanguage systems, but L2 input per se, which causes such diversity when it contains elements that learners experience as ambiguous or obscure. The postulate of a delearning process/ determinacy problem due to L1 is not a successful account of the divergences of interlanguage systems from the target language grammar.

So far, we have reexamined Schwartz and Sprouse's (1994) analysis of the interlanguage systems developed by a Turkish speaking learner of German. It has been argued that their L1 Full Transfer account for the early interlanguage system and L1 Delearning account for non-convergence of interlanguage systems with the L2 input are neither sufficient nor necessary.

Counterarguments

The L1 Full Transfer account and the L1 Delearning account in particular do not seem to be free from problems and vulnerability to counterarguments. This L1 Full Transfer/ L1Delearning account is in effect incapable of explaining why some properties, such as negation or questions are developed systematically in L2 acquisition regardless of the L2 learners' L1s (see Larsen-Freeman and Long 1991 and Ellis 1994). If whenever L1 grammar differs from the target grammar, L2 learners are restructuring away from it by going through the delearning process, then such a *systematic development* should not be observed. Thus the delearning associated with the 'Full Transfer' account is inadequate to explain such a systematic development. Moreover, the 'Full Transfer' account is vulnerable to data indicating that some functional elements are not transferred from the L1 grammar at earlier stages (see Eubank 1993/1994). Any L2 studies

that support Partial Transfer argue against Full Transfer in that they show that functional categories and features are not transferable (see Bong 2005 and to appear for discussions of the Minimal Trees hypothesis and the Valueless Features hypothesis).

Crucially, the Full Transfer account has difficulty in capturing the data showing that, regardless of L1 feature values, the L2 learners behave in the same way. For example, Yuan (2001) presents data obtained from adult native speakers of French and English who were acquiring Chinese, which has a weak V feature value and thus lacks verb movement. English has the same weak V feature value as the L2 Chinese, whereas French has the opposite strong V feature. Yuan (2001) reports that English and French subjects at the lowest level of proficiency showed no difference in acquiring the weak V feature of Chinese. These results are in fact inconsistent with the Full Transfer claim that, depending on the L1 parametric values (feature strength), French and English learners will behave differently: French learners of Chinese will permit verb raising whereas English learners will not. Interestingly, results of this kind, which cast doubt on the Full Transfer claim, seem to show that learners, regardless of their L1s, have the tendency to prefer weak feature setting (non-movement option) to strong feature setting (movement options); in effect supporting the claims of the proposed Economical Parameter-Setting model that L2 learners have a non-specified initial state and a built-in preference towards economical non-movement options. In sum, this Full Transfer account can be adequately applicable only when the L1 has a weak feature and the L2 has a strong feature value; but not when L1 has a strong feature and L2 has a weak feature as in Yuan's (2001) data.

Discussion and Conclusion

Of the three hypotheses that embrace 'transfer of various degrees of L1 grammar' into early interlanguage systems, this paper has examined the Full Access/Full Transfer hypothesis, emphasizing the *Full Transfer* account: the entire L1 grammar is transferred in the hypothesis. I pointed out that the hypothesis is not free from problems: it fails to capture all aspects of the L2 acquisition data. In short, it is neither capable of providing a complete picture of L2 acquisition as a theory, nor free from problems in accounting for the observed non-productivity of strong features at early stages, the apparent optionality between learners at developmental stages and the divergence of interlanguage systems from the parameter-setting manifested in L2 input or represented in L2 native speakers.

Concluding Remarks on the Full Transfer Account

In conclusion, the L1 Full Transfer account and the L1 Delearning account under the Full Transfer/Full Access hypothesis do not sufficiently capture the data of L2 acquisition. One possible way to rescue this hypothesis is by eliminating the notion of 'L1 delearning' and of an initial state that consists of the entire L1 grammar. Instead, L2 learners have a non-specified initial state, have a built-in preference for economical options selected from UG, and are sensitive to the ambiguity and obscurity manifested in L2 input. Thus, L2 learners initially prefer the most economical options until they identify more appropriate options and modify the random but economical options to values that conform to what they hypothesize about the L2 input, but not necessarily to the values that a native speaker has set. These alterations of the Full Access/Full Transfer hypothesis result in the weak deterministic view of L2 acquisition, namely the 'Economical Parameter-Setting' model.

Discussion on Non-productivity of Strong Features

L1 parametric values do not behave in the way the Full Transfer account predicts. When the L1

parametric values (non-movement options) are more economical than those (movement options) of the L2 input, they appear to be initially transferred into interlanguage systems. However, when the L2 options are more economical than the L1 options, the L1 options do not seem to be initially transferred into interlanguage systems, as reported in Yuan (2001), in which L2 learners do not show any L1 transfer effects when the L2 has the weak feature values. In effect, the early interlanguage systems actually embody *non-productivity of less economical options such as strong feature values.* In other words, any movement involving syntactic structures such as subject-auxiliary inversion and wh-movement is less likely to be observed in early interlanguage system. This can be characterised as a systematic initial preference for economical options by learners. Critically, the three Transfer accounts fail to predict a systematic initial preference for economical options, which is in fact observed in early interlanguage systems, and they cannot capture the data which show that L2 learners produce 'weak-feature values' that are not L1 options. Thus, the three Transfer accounts for the L2 initial state do not seem to be sufficient for explaining early interlanguage systems.

There are two possible alternative accounts for this systematic initial preference observed in L2 acquisition. One is the account embodied in the Initial Hypothesis of Syntax model proposed by Platzack (1996), in which both L1 and L2 learners begin with the initial hypothesis that all features are weak. The alternative is the claim of the Economical Parameter-Setting model that learners begin with a non-specified hypothesis about a grammar but have a built-in preference for economical options. Note that these two alternative accounts emphasize economy considerations in any acquisition process.

However, we have seen that L2 learners do sometimes make use of not only L1 options but also L2 options when these are involved with the merge-level parameter, for example, which is known as the 'head-direction parameter'. We have seen that L2 learners produce both L1 and L2 options when L1 and L2 values differ in the head-direction parameter or when L2 input manifests ambiguous and obscure information about the head-direction property such as the V2 phenomenon in German. In addition, no particular preference was found as far as the OV or VO word-order pattern was concerned. Instead, L2 learners were shown to be sensitive to the L2 input rather than simply transfer the properties of their L1 lexical categories: the OV or VO word-order patterns. Neither the three Transfer accounts nor the Initial Hypothesis of Syntax model can capture the L2 learners' sensitivity to the surface word-order in the L2 input. Owing to the presupposition about the underlying SVO word-order, the Initial Hypothesis of Syntax model wrongly predicts that SVO will prevail in early interlanguage systems even when the L2 has the SOV pattern.

Alternatively, if we take a different approach, that the options between head-initial and head-final are economically compatible with each other, we can account for the contrast between the L2 learners' sensitivity to the input and their preference for economical options initially. Since there are no relative economical values for the costless merge operation involved in the 'head-direction' parameter, no preference for any head-direction is induced. One the other hand, syntactic operations are ranked in the way that move cost more than merge, so that learners will prefer Merge options to Move options. These are the minimalist assumptions about economy, which constitutes the basis of the proposed Economical Parameter-Setting model. This model predicts that learners will prefer Merge to Move options and that they will show no particular preference if there are no relative economical values involved, as is the case in the head-direction parameter.

Consequently, the two aspects observed in early interlanguage systems - that L2 learners show an initial preference for economical options when the two competing options between the L1 and the L2 have relative (comparative) economy values, and that they show no particular preference but show sensitivity to the word-order pattern in the L2 input when the competing two options are economically compatible - are expected from the Economical Parameter-Setting model (Bong 2005).

Discussion on the Absence of Optionality and the presence of Variability

Apparent optionality in interlanguage systems needs to be accounted for in a systematic way, since the Full Access/Full Transfer hypothesis can neither predict nor account for both the presence of the variability and the absence of the optionality in L2 acquisition.

As alluded to, there seem to be two kinds of optionality: one is 'optionality between learners', where two structures are used variably by learners so that two structures can be observed in interlanguage systems (i.e. variability between learners); the other is 'optionality within an individual learner', where two structures are used interchangeably by a single learner (i.e. optionality within a learner). The former are expected if learners explore UG-possible options and make hypotheses about a grammar based on their parsing ability and test them against the L2 input, which is one of the claims of the Economical Parameter-Setting model (Bong 2005). However, the latter (optionality within a learner) is not desirable from the point of view of the minimalist assumptions, since a global approach to economy principles demands that each syntactic structure should represent a maximally economical outcome of computation meeting the bare-output conditions imposed by the input although there are relative economical values such as the fact that Merge costs economically less than Move. In fact, there is no evidence in the literature of 'optionality' within each individual learner. It is possible to conjecture that L2 learners distinguish two structures in a specific way. That is to say, 'optionality within an individual learner' seems to require a more thorough investigation of whether the L2 learners actually use two structures optionally (interchangeably) without differentiating their meanings or functions: e.g. whether they fail to distinguish between raising verb construction and non-raising verb construction, or between use of a non-finite and finite verb, and so on.

Among the three transfer accounts, the Valueless Feature hypothesis, proposed by Eubank (1993/1994, 1994, 1996), can be regarded as attempting to account for the apparent optionality. However, none of the three hypotheses could provide a successful account of the absence of the optionality and the presence of the variability, or predict them.[7] Under the Valueless Features hypothesis, 'apparent optionality' is accounted for by the condition that parameter-determining features are valueless (inert) so that optionality is evident. If parameter-determining values are to be optional, L2 learners should be able to make use of at least two alternating options. This implies that two of the options should be available for L2 learners. Interestingly, only the variability between learners, not the pure optionality within an individual learner, is shown to emerge later than the stages at which initial preference for economical options is evident and is shown to be systematic in the sense that the two alternating options are UG possible options.

Discussion on the Presence of Divergence

The other interesting and important aspect of L2 acquisition that has been discussed in the L2 literature is the 'divergence' observed in interlanguage systems from the parameter-setting embodied in the input or that of the native speakers: in other words, L2 learners sometimes set new parameter values in accordance with neither the L1 values nor the L2.[8] We have examined the account of the 'divergence' in the Full Access/Full Transfer hypothesis and I have indicated that it is not free from problems.

Before recapitulating the particularity of 'divergence' under the Full Access/Full Transfer hypothesis, it seems necessary to clarify their fundamental assumptions about UG availability in L2 acquisition. The majority of L2 studies that claim Full or Partial UG availability stem from the deterministic view of language acquisition: that is to say, the majority of the L2 acquisition studies make either the Full or

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7 Alternatively, the Local Impairment hypothesis proposed by Beck (1996, 1998a, and 1998b) can be viewed as an attempt to account for the 'apparent optionality'. Under this hypothesis, the 'apparent optionality' is taken to be an effect of the impairment of feature values, because such feature values are not available for L2 learners. Nevertheless, this hypothesis falls into the same dilemma as the Valueless Features hypotheses faces.

8 See Parodi (1998, 2000) for a suggestion about how the 'divergence' in L2 acquisition might be accounted for.

Partial UG availability claim, stemming from the deterministic view on the process of parameter-setting, according to which parameters are set to the values of a specific setting of the input. Under this view, the UG inventory plays an important role in the assessment of whether L2 learners can set or reset parameters of L2: that is to say, if the UG inventory is available or accessible, then L2 learners should recognise parametric information in the input. When the parameter-settings differ between L1 and L2, L2 learners develop interlanguage systems that may be consistent with parameter values manifested in L2 input, which is called 'convergence'. This convergent component of the L2 acquisition data has been taken as supporting the claim that some parts of the UG inventory are available for L2 learners. On the other hand, failure to achieve L2 parameter settings or linguistic behaviour inconsistent with L2 parameter-settings is viewed as 'divergence'. This divergent component of the L2 acquisition data has been taken as supporting the claim that some parts of the UG inventory are unavailable: namely the Partial UG Availability view.

Given this clarification of the deterministic view of the underlying relationship between UG availability and learnability, recall the L1 transfer account of divergence in L2 acquisition. Although its empirical focus is upon interlanguage systems at early stages, the hypothesis predicts that the 'divergence' will occur only when the transferred parts of L1 differ from the L2. In fact, it has been shown that divergence is not always associated with the transferred parts of L1 grammar or the difference between L1 and L2. In other words, divergence is not observed in the way the hypotheses predict. For example, one representative transfer account of 'divergence' is the 'delearning process/indeterminacy problem' postulated in the Full Transfer/Full Access hypothesis. I have indicated that some specific grammatical divergences observed in interlanguage systems are not always related to the inability of L1 grammar to handle the L2 input and conversely, this postulated process cannot capture any convergence with parametric values that differ between L1 and L2.

In short, the Full Access/Full Transfer can not completely accommodate the divergence in L2 acquisition. It has been argued that L1 learners can have parameter-settings that are not convergent with the parameter-setting manifested by the input, but are nevertheless systematic (e.g. diachronic parameter-change). That is to say, 'divergence' is evident in L2 acquisition and not unique to L2 acquisition but also found in L1 acquisition. Although the studies we have examined attempt to provide a systematic account of why or how L2 learners make such assignments of new parameter values (divergence), they are not free from problems.

Discussion on Overlooked L2 Acquisition Conditions

In my view, there are some important aspects of L2 acquisition that have been overlooked partly because the majority of L2 acquisition studies adopt the 'deterministic' view on the process of parameter-setting, and partly because the relationship between learnability and UG availability is overemphasised: as if it is asserted that because UG is available, learners must be able to acquire a language (set parameters), and conversely that because some part of UG is unavailable, learners cannot acquire some parts of a language.

First of all, the majority of L2 studies seem to overlook the observable fact that L2 learners are sensitive to the relative economical values of UG options including L1 and L2 options throughout the parameter-setting process, regardless of the parametric values of L1 or L2. We have seen that L2 learners have an initial preference for economical options by examining early interlanguage systems reported in the literature. Via re-examining the L2 data of Hawkins and Chan (1997), Bong (2005) has suggested that L2 learners have a preference for economical options *subsequently* as well, and that those sometimes contribute to a particular misdevelopment beyond the initial state. L2 learners' preference for economical options regardless of the parametric values of L1 or L2 can be characterized as the existence of *internal causes* of divergence in L2 acquisition as well as L1 acquisition.

Secondly, the other interesting aspect of L2 acquisition that has been overlooked is the L2 learners' sensitivity to the input quality and quantity. In other words, I suggest that the variability of the L2 input plays an important role in L2 acquisition and can be characterized as the existence of *external causes* for divergence. More specifically, one type of variability of the input is regional. If L2 learners experience French in Quebec, they will definitely pick up the Quebec dialect of French, not Parisian French. That is to say, if there are parametric differences between these two dialects, their parameter settings should be different. The other type of variability of the input is 'conditional'. If learners in Japan experience English in a limited institutional learning environment, they may not have the same English input as similar learners of English in England or Scotland. Variability of the input can be created by the learning environment and that in turn contributes to creating ambiguity and obscurity of the parameter-setting in the input. For example, with respect to positive input, some grammatical properties are sufficiently provided while some may not be. Such manufactured or biased input may create ambiguity and obscurity of the parameter-setting, and may also contribute to misanalysis of the input, leading to a divergent parameter-setting from the L2 input. The question that should be addressed in L2 acquisition is whether L2 learners from various learning environments (regions, countries, natural or institutional setting) will show some variability of their parameter-settings for a particular language.

Lastly, the role of L1 has been discussed by mean of the L1 Full Transfer account, according to which all of L1 parametric values transfer into interlanguage systems. Not much attention has been paid to the effects of contact between the L1 and L2 lexicon in the L2 literature. I suggest that lexicon contact between the L1 and the L2 may contribute to divergence in L2 acquisition. The existing L1 lexicon with its exponents (lexical items) for functional categories is specific to L2 acquisition and thus constitutes a difference between L1 and L2 acquisition. Lexical items are formed through the process of *Selection* and *Construction* in the lexical component during L1 acquisition. These lexical items will influence the hypotheses that L2 learners make about parameter-settings as well as the ability of those learners to parse L2 grammar. To put it another way, the existing L1 lexical items may induce potentially misleading or facilitating cues that have an influence not only on the making and testing of L2 learners' hypotheses about L2 grammar, but also on the parsing of L2 grammar (see Bong 2005 for examples of misleading or facilitating cues coming from L1 lexicon). Misleading cues created by the L1 lexical items can contribute to L2 learners' misanalysis of the parameter-setting manifested by L2 input, leading to a parameter-setting which does not conform either to L2 or to L1, but to some LN. Facilitating cues created by the L1 lexical items can contribute to making the learning of particular morphophonological properties faster/easier, but may still give rise to misanalysis of syntactic properties, leading to a non-convergent parameter-setting.

In short, there are at least three L2 conditions that have been overlooked in L2 literature, owing to the deterministic view on the process of parameter-setting: the L2 learners' sensitivity to the relative economical values of UG options, the L2 learners' sensitivity to the input quality and quantity, and the effects of contact between the L1 and L2 lexicon.

Conclusion

The Economical Parameter-Setting model can provide a plausible account for the observations of 'initial preference' and 'divergence' in L2 acquisition, which can not be fully captured by the various degrees of L1 transfer account. In addition, the model predicts that there will be some 'optionality between learners' but not 'the optionality within an individual learner', which causes the serious problem to any variants of the deterministic view on language acquisition. Furthermore, the Economical Parameter-Setting model can accommodate these three overlooked conditions in L2 acquisition studies, owing to its 'weak-deterministic' position and to its claim that the process of parameter-setting in L1 and L2 acquisition are fundamentally the same, and that the difference between L1 and L2 acquisition is neither the UG

availability nor the initial state but lies in other causal factors that create various degrees of obscurity and ambiguity in the L2 input, such as the variability of the L2 input and the contact between the L1 and L2 lexicon. In conclusion, the Economical Parameter-Setting model has more explanatory and predictable powers than the variants of the deterministic parameter-setting model, including the various degrees of L1 transfer accounts.

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