Competing Grammars in the Comprehension of Questions and Relative Clauses in L1 German-L2 English

Tom Rankin

1. Introduction: Grammar Competition and (Second) Language Development

Grammar competition has been invoked to account for optionality when mutually exclusive parameter settings co-exist during periods of diachronic change (e.g. Kroch 1994, 2001; Pintzuk 1999). Roeper's (1999) Universal Bilingualism applies this thinking to individual speakers by proposing that every individual develops an underlying bilingual competence where two properties exist in a language which cannot be stated within a single grammar. Yang (2000, 2002, 2004) has formalised this sort of approach in the framework of variational learning. He proposes that children acquiring their first language do not switch parametric options on or off; rather, parameters are set in a probabilistic fashion and distinct options may coexist in a single speaker. In this way, he accounts for variability during the course of both L1A and diachronic change.

The grammar competition idea has not been explored to the same extent in generative SLA research. There are a few notable exceptions. Zobl & Liceras (2005, 2006), for example, point out that diachronic grammar competition provides a useful framework for the analysis of L2 data as distinct parametric settings seem to co-exist in both individual L2A and diachronic change, giving rise to extended periods of optionality. Amaral & Roeper (in press) extend Universal Bilingualism by developing a multiple grammars approach to L2A. Slabakova (2008: 116) suggests that variational learning is "logically extendable" to L2A. Drawing on Slabakova, the present paper extends a variational analysis to L2A on the basis of comprehension of questions and relative clauses in L2 English by L1 German speakers.

The paper is organised as follows: the relevant morphosyntactic properties of German and English are outlined in Section 2. Section 3 discusses the application of the variational learning model to L2A, under the general assumptions of Full Transfer/Full Access (Schwartz & Sprouse 1994, 1996). A picture interpretation experiment that tests the predictions of a variational approach to L2A is presented in the final sections of the paper, and its results discussed.

2. Linguistic Background: Word Order and Case in English and German

English and German differ consistently in their settings for headedness and verb movement parameters. While VP and IP in German are head-final, English is consistently head-initial. German has a verb second (V2) requirement in main clauses, where the finite verb raises to C°. English does not instantiate lexical verb movement. Given these parametric distinctions, there are consistent differences in linear order in subordinate clauses, adverb placement, fronting/topicalisation structures and periphrastic tenses, as outlined in the sentence pairs (1) to (4).

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(1) a. The cat ran away, because the dog chased it.
b. Die Katze ist weggelaufen, weil der Hund sie jagte.
… because the dog it chased
(2) a. The dog always chases the cat.
b. Der Hund jagt immer die Katze.
the dog chases always the cat
(3) a. Yesterday, the dog chased the cat.
b. Gestern jagte der Hund die Katze.
yesterday chased the dog the cat
(4) a. The cat has just seen the dog.
b. Die Katze hat gerade den Hund gesehen.
the cat has just the dog seen.

For the purposes of the experiment reported below, the more interesting word order patterns are where the different underlying syntactic structures of German and English give rise to identical surface linear orders. This is the case in SVO main clauses, simple tense subject questions and simple tense object relative clauses (among others), as illustrated in (5) to (7).

(5) The cat chases the dog.
Die Katze jagt den Hund.
(6) What chases the dog?
Was jagt den Hund?
(7) The animal which the dog chases.
Das Tier, das der Hund jagt.

Unlike German, word order in English conditions semantic interpretation. While German relies on case-marking to indicate thematic roles, case syncretism in singular nominative and accusative feminine and neuter DPs renders German word order in sentences such as (8)-(10) ambiguous between subject and object readings.

(8)	Die Maus jagt die Katze	=	a.	The mouse chases the cat.
		=	b.	The cat chases the mouse.
(9)	Was jagt die Katze?	=	a.	What is chasing the cat?
		=	b.	What is the cat chasing?
(10)	Das Tier, das die Katze jagt.	=	a.	The animal which the cat chases
		=	b.	The animal which chases the cat

The upshot of this for L2 acquisition is that English provides ambiguous input to a German head-final/V2 grammar. Assuming a Full Transfer model of the initial state, English clauses such as (8a/b), (9a) and (10a) can be formally parsed by a German grammar. However, given the lack of disambiguating case marking in English, head-final/V2 parses will produce ambiguous semantic interpretations. These facts can be drawn upon to test how German-speaking learners parse English sentences, and thus examine the process of parameter (re)setting during the course of L2 development.

3. A Variational Learning Take on Full Transfer/Full Access/Full Parse

3.1. Parameters and Variational Learning

Variational learning provides an alternative to a transformational view of parameter setting in (first) language acquisition (Yang, 2002: 20). Parameter setting under transformational learning predicts that parameters are uniformly and instantaneously ‘switched on’ during the course of development. Yang (2002) points out that this would lead one to expect the patterns of grammatical development outlined in (12):

(12) a. the learner's linguistic production ought to be consistent with respect to the grammar that is currently assumed
b as the learner moves from grammar to grammar, abrupt changes in linguistic expressions should be observed.

Yang (2002: 16-18) discusses the failure of these predictions for parameter setting in L1A. For L2A, the predictions would be essentially the same, and the empirical findings similarly disappointing. Transformational parameter *re*setting would predict that, after the learner resets from an L1 to an L2 parameter value, production should subsequently be consistent with respect to the target parameter value. As the learner moves from L1 to L2 settings, there should be abrupt changes in the form of linguistic expressions. White's (1990, 1991, 1992) seminal studies of transfer of verb movement in L1 French-L2 English serve to illustrate the failure of these predictions. While learners showed evidence of having acquired the target English [-movement] setting in questions and negation structures, adverb placement showed continued evidence of the L1 French [+movement] setting, i.e. verb movement over adverbs remained persistently optional. Changes in L2 grammars are not abrupt and consistent.

Subsequent work has also failed to find evidence of transformational L2 parameter resetting. Models of L2 acquisition have thus proposed mechanisms to account for the variability and optionality of L2 production; and the nature of parameters and parameter theory itself has also been called into question (see Lardiere 2009 for both a critique of traditional parameter theory and a feature reassembly alternative to parameter resetting).

The variational learning alternative to transformational parameter setting sees non-uniformity in a data sample not as imperfect forms of a single grammar, but rather as a collection of distinct individual grammars (Yang, 2002: 25). Thus, from this perspective, variability in the course of acquisition is analysed as changes in the underlying *distribution* of different grammars in an individual learner, rather than as discrete stages in the development a single grammar.

This population of competing grammars is constrained by the innate hypothesis space for parametric variation provided by UG. Parameters are probabilistically selected to parse input. The "success" of a parameter setting in parsing input then affects the probability with which it will be selected in the future. Learners arrive at a stable equilibrium of different grammars, which underlies variability in native adult competence, by means of the process in (13) (Yang, 2002: 26-27).

(13) Upon the presentation of an input datum *s*, the child
a. selects a grammar G_i with probability P_i,
b. analyzes *s* with G_i
c. if successful, reward G_i by increasing P_i
otherwise, punish G_i by decreasing P_i

Thus UG provides a "pool" of possible grammars and the learning task is to quantify the relative "fitness" of different grammars in terms of how often they can successfully parse sentences in the linguistic environment. This process is formalized in the same way as selection in evolution. A grammar's fitness is the "probability of its failure in a specific linguistic environment", which is given by the algorithm in (14).

(14) The penalty probability of grammar G_i in a linguistic environment E:
$c_i = \Pr(G_i \not\rightarrow s \mid s \in E)$

Yang (2010: 1162, footnote 4) points out that the success of a grammar could in principle be defined in any way, including extra-grammatical factors. The definition Yang adopts in his work is simply parsability. I will follow this definition, not least because it gels well with the assumptions about parsing and learnability in Full Transfer/Full Access, to which I turn in the next section. Before that, I draw on Legate & Yang (2007: 20), who sum up the relevant features of variational learning in first language development, but which would apply equally to L2A:

> […] unlike the traditional models of learning such as triggering, even unambiguous evidence […] does not settle learning decisively but only nudges the learner toward the target value. The rise of the target grammar is gradual, as its probability gradually approaches 1; this appears to be characteristic of language development in general. Second, the demise of nontarget grammars is also gradual. In other words, nontarget grammars may linger around for extended periods of time, albeit accessed with decreasing probabilities as they are gradually driven out by the target grammar.

3.2. Predictions of Full Transfer plus Variational Learning

As mentioned above, Slabakova (2008: 116) suggested that the variational model is logically extendable to L2A. This extension can be implemented by combining the basic assumptions of FT/FA (Schwartz & Sprouse, 1996) with variational learning. These assumptions of FT/FA state that the initial state in L2A is the endstate of L1A and that UG remains accessible. At the initial state, the L1 grammatical representation is accessed to parse L2 input. Empirical support for the full transfer model has come from comprehension evidence in L1 English-L2 German reported by Grüter (2006). Grüter's experiment was reproduced for the present study and is reported in more detail below. Learnability after the initial state is based on input parsing and is failure-driven. The failure of the L1 representation to parse L2 input will motivate parameter resetting. The full range of parametric options licensed by UG remains available to the L2 learner.

A variational approach to L2A is, then, clearly compatible with FT/FA with rather minor changes in perspective. So, instead of a monolithic L1 grammar transferring to the initial state, it is the relative distribution and strengths of different L1 parametric options which transfer. As regards learnability, parsing still plays a key role, but the perspective changes from failure to fitness. Thus, there is no transformational grammar restructuring; rather, the L1 parametric options will be punished or rewarded according to their fitness to parse the L2, in line with the algorithms in (13) and (14). Any L1 parametric option that can formally parse L2 input may be accessed. Such a formally 'successful' parameter will thus be associated with a certain probability of being accessed even at more advanced levels of proficiency. To repeat Legate & Yang (2007: 20), "nontarget grammars may linger around for extended periods of time."

Given the word order patterns in German and English discussed above, at the initial state L1 German speakers will access V2 and head-final grammars to parse English input. On encountering an L2 input string which is incompatible with a V2/head-final parse, these representations will be 'punished' and thus be less likely to be accessed in the future. In these cases, alternative parameters, such as V-in situ/head-initial, need to be selected from the range allowed by UG. However, linear orders in a range of English structures are formally compatible with a V2/head-final parse, e.g. subject questions and object relative clauses. Where the V2/head-final representations successfully assign a parse to such structures, they will be 'rewarded', causing these parametric options to remain accessible in future. Full Transfer + variational learning would predict that V2/head-final parametric settings will not be completely lost in L1 German-L2 English acquisition, but will "linger around" as English does not provide unambiguous evidence that will consistently punish them.

To translate this discussion into predictions for the experiment below, English structures which are formally compatible with V2/head-final may still be parsed in this way by advanced proficiency L1 German learners of L2 English. Subject questions and object relative clauses are formally compatible with a V2/head-final parse; the presence of these structures will thus not 'punish' the L1 syntax. By contrast, subject relative clauses and object questions are incompatible with V2/head-final and will consistently punish the L1 syntax, thus raising the 'fitness' of alternative grammars. Summarising, if V2/head-final grammars are optionally accessed where possible to parse English, learners will:

i) Provide non-target patterns of interpretation to subject questions and object relative clauses.
ii) Provide target patterns of interpretation to object questions[2] and subject relative clauses.

4. Picture Interpretation Experiment

4.1. Participants

The experiment was completed by Austrian advanced proficiency instructed learners (N = 30) and a control group of native English speakers (N= 10). The control group was made up of native speakers of English who were all resident in Austria at the time of testing. There were 4 male and 6 female controls, with an average age of 37.9 years (range 27-61 years).

The learners were recruited from third and fourth semester language and linguistics classes at the Department of English and American Studies of the University of Vienna. A pre-sessional language proficiency exam for the degree programs requires a pass at least at the B2 level on the Common European Framework (=upper intermediate). The learners in the study had all subsequently passed a second language proficiency exam after two semesters of university study, placing them at least at the C1 level on the CEF (=advanced). All learners were thus well passed the initial state. Further biographical information on the learners was collected in a pre-test questionnaire (see Table 1). Only those learners who reported being monolingual German native-speakers were included in the study.

Table 1: Learner bio information

	Length of Instruction (years)	Age of Onset (years)	Age (years)
Learner Group	12.6 (range 9-18)	9.3 (range 4-14)	22.1 (range 19-29)

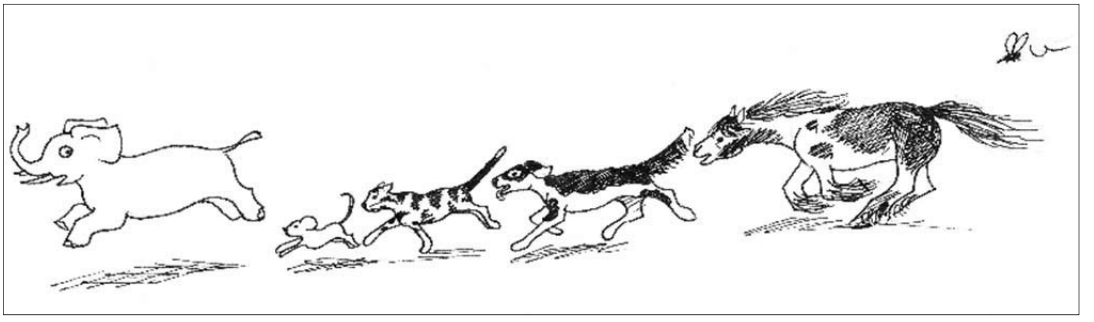
4.2. Materials and Procedure

The experimental task was adapted from Grüter (2006). The experiment took place in a classroom setting, using information projected onto a white screen in MS PowerPoint format. Preliminary information explained the nature of the task. This informed learners that they would see scenes which depicted the typical daily activities of groups of animals. This served to establish a context for the use of the simple present tense, which might otherwise be pragmatically anomalous in descriptions of activities depicted in pictures. A practice picture was presented prior to presentation of the experimental stimuli and participants were given the chance to ask for any further clarification before the experiment began.

The experiment itself was made up of five different pictures depicting animals involved in their daily actions of ‘biting’, ‘carrying’, ‘catching’, ‘chasing’ and ‘pushing’ each other (see Fig 1). Each picture scene was preceded by a screen which stated “Today the animals usually (bite/carry/catch/chase/push) each other”. A list of the animal names and their German translations followed to ensure all learners had the relevant vocabulary.

[1] The status of *do*-support in English object questions actually rather complicates the issue as it is possible that periphrastic *do* could be parsed in the same way as dialectal *tun*-support in Austrian German, or that it could be parsed as any other aspectual or modal auxiliary and so be irrelevant as a cue for V-in situ in English (see Rankin in press for further discussion). For the sake of simplicity, I leave the predictions here as clear-cut as possible.

Figure 1: Example of picture stimulus – the 'chase' scene.



Each scene was accompanied by 7 questions/statements delivered orally by the experimenter. The procedure was timed in MS PowerPoint so that each scene remained visible to the learners for 48 seconds. A parallel presentation on a laptop visible only to the experimenter timed presentation of the stimuli sentences. The first sentence accompanying each scene was read after the scene had been projected for 6 seconds, then at 6 second intervals. Each scene remained visible for 6 seconds after the last stimulus sentence was read aloud.

4 of the 7 sentences accompanying each picture tested the relevant variables: 1 x subject and 1 x object relative clauses, 1 x subject and 1 x object questions. The remaining three sentences were a grammatical SVO clause, a passive and an ungrammatical OVS clause, which served as distracters for the purposes of the results presented below. The order of presentation of clause types was varied in each of the 5 picture scenes. Learners recorded their responses by circling options in pre-prepared multiple choice answer sheets (see Fig. 2). It was explained that the question mark was to be used where a participant thought there was no possible answer in the scene or if they could not find an answer in time.

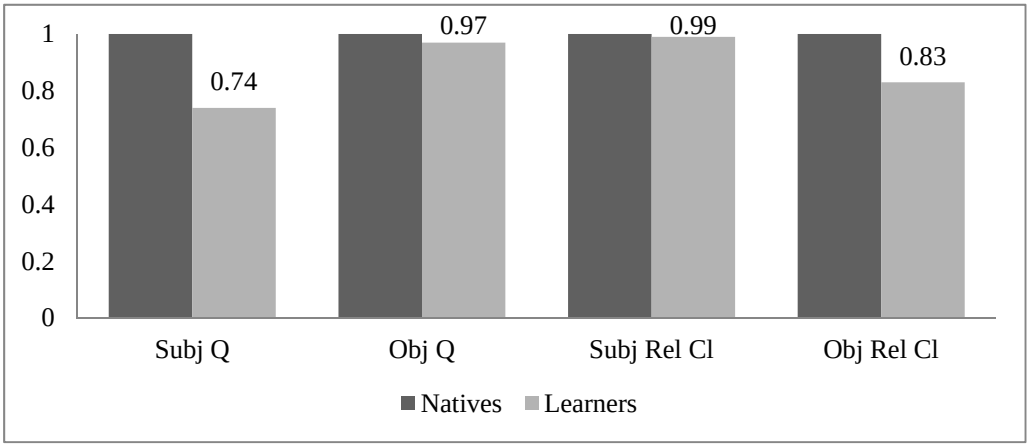
Figure 2: Excerpt from answer sheet ('true' / 'false' are responses to distracter sentences)

1.	Mouse	Dog	Elephant	?
2.	TRUE		FALSE	
3.	Fly	Horse	Cat	?
4.	Elephant	Cat	Horse	?

4.3. Results

For the purposes of statistical analysis, the responses were coded as target or non-target and a preference rate for target interpretation was calculated. This was arrived at for each individual by dividing their number of target responses by the total number of responses they provided (thus accounting for any missing responses). Fig. 3 compares the learner and native groups' preference rates for target interpretation. The natives performed completely at ceiling; interpretation was always target and there were no missing responses.

Figure 3: Native vs. learner groups' rate of target interpretation



A mixed 2x4 repeated measures ANOVA (L1 x Clause Type) revealed main effects of L1 $F(1, 38) = 16$, $p < .01$, and clause type $F(2, 75.76) = 5$, $p < .01$. There was a significant interaction of L1×Clause Type $F(2, 75.76) = 5$, $p < .01$.

Recall that the predictions were that English clauses which are compatible with an L1 syntactic parse would show evidence of L1 transfer, while those clauses which cannot be parsed by a V2/head-final representation would have target-like parses. These predictions were further interrogated with independent samples t-tests on target interpretation for the individual clause types. In line with predictions, learners (M = .74, SE = .01) had a significantly lower rate of target responses than natives (M = 1.0, SE = 0), $t(38) = 6$, $p < .01$ for subject questions. Similarly, the rate of target interpretation of object relative clauses was significantly lower for the learners (M = .83, SE = .04) in comparison to the natives (M = 1.0, SE = 0), $t(38) = 4.1$, $p < .05$.

The predictions are also supported by the results for subject relative clauses, in which there is no significant difference in rates of target interpretation for learners (M = .99, SE = 0) versus natives (M = 1.0, SE = 0), $t(29) = 1.4$, $p > .05$. As noted in fn. 1, the predictions for object questions are not entirely straightforward. It is logically possible that object questions could receive an L1 parse. However, in line with the predictions as presented in (i) and (ii) above, there was no significant difference between the learners' rates of target interpretation (M = .97, SE = .01) compared to the natives' (M = 1.0, SE = 0), $t(38) = 1.2$, $p > .05$.

Turning to the individual learners' results, only 7 of the 30 learners in the study had consistent target interpretations of all clause types (see Table 2). The others had variable patterns of interpretation. This is consistent with the variational proposal that each individual has access to a range of different grammatical representations to parse input.

Table 2: Learners' individual rates of target interpretation for each clause type

Learner	Subj Q	Obj Q	Subj Rel Cl	Obj Rel Cl
P1	1	1	1	1
P2	0.4	1	1	0.8
P3	0.4	1	1	0.8
P4	0.4	1	0.8	1
P5	0.66	1	1	1
P6	0.8	0.8	1	0.8
P7	0.4	0.8	1	0.8
P8	0.8	1	1	0.6
P9	0.8	1	1	1
P10	0.75	0.8	1	0.8
P11	0.8	1	1	0.2
P12	0.8	1	1	1
P13	0.8	1	1	0.8
P14	1	1	1	1
P15	1	1	1	1
P16	0.8	1	1	0.8
P17	0.8	1	1	1
P18	1	1	1	0.2
P19	1	1	1	0.6
P20	1	1	1	1
P21	0.6	1	0.8	0.8
P22	0.4	1	1	0.8
P23	0.2	0.75	1	1
P24	1	1	1	1
P25	0.6	1	1	0.6
P26	0.4	1	1	0.6
P27	0.8	1	1	1
P28	1	1	1	1
P29	1	1	1	1
P30	0.75	1	1	1

5. Discussion and Conclusion

As predicted by FT/FA in combination with variational learning, it seems that high proficiency L2 English learners with L1 German retain access to V2/head-final grammatical representations and continue to access these to parse English input where the surface form of English clauses is formally compatible with a V2/head-final parse. This would explain the observed patterns of (mis)comprehension of English questions and relative clauses. At least two possible issues require further comment.

Firstly, it has been proposed that L2ers may not be able to compute full grammatical parses online (Clahsen & Felser, 2006). This is particularly relevant for an experimental procedure which relies on parsing, but without an online measure of the time course of processing. If L2 processing results in a shallower syntactic representation, it might be claimed that miscomprehension of *wh*-structures is the result of an inability to construct a full representation with movement of *wh*-phrases. Thus, a processing deficit model might also predict miscomprehension of *wh*-structures regardless of L1. However, if there was a general problem with computing movement or a full syntactic structure, there should be miscomprehension of *all* types of *wh*-clause. This is not the case, and a general processing deficit model would thus leave the apparent influence of the L1 unexplained. It would appear that this learner

group can fully parse L2 English, but they may access the L1 grammatical representation to do so. Nevertheless, a logical possibility is that learners might revert to L1 parsing specifically because new processing routines required to deal with a different L2 syntax are unavailable. This possible interface between online processing and the interpretation assigned to L2 clauses remains unexplored by the research reported here. Future work on the time course of grammatical processing of questions and relatives in L1 German-L2 English would provide a more detailed picture of how learners compute parses of these structures. This would further illuminate the processing and parsing of movement and clause-structure.

A second issue is the role of the input. The variational learning model makes predictions on the basis of the frequency with which evidence for particular parameters is expressed in the input. Completing a variational analysis would thus require quantifying the frequency and robustness of V2 vs. V3 and head-initial vs. head-final cues in the English input. Precise quantification of relative frequencies of different structures in the input will have to await further work (but see Rankin in press for an initial analysis). Nonetheless, it is possible to provide an estimation of the problematic nature of English input with respect to V2 and headedness. Table 3 categorises some major word order patterns of English according to whether these unambiguously punish V2 and head-final parameters. Recall, however, that variational learning suggests that "*even unambiguous* evidence does not settle learning decisively" (Legate & Yang 2007: 20, my emphasis).

Table 3[2]: Possible compatibility of English structures with V2/head-final representations

V2		Head-Final	
unambiguously punished by:	ambiguous / rewarded by:	unambiguously punished by:	ambiguous / rewarded by:
AdvSVO SAdvVO	SVO SAuxVO SVOAdv SAuxNegVO WhVO WhAuxSV	SAuxVO SAuxNegVO WhAuxVS subord.SVO subord.SAuxVO relative-WhVO	SVO WhAuxSV WhVO relative-WhSV

On the basis of this categorisation, it seems that English is rather more ambiguous with respect to V2 compared to headedness. Perhaps this provides a clue to the different 'strengths' of the parameters. The results seem to suggest that a V2 representation is stronger than head-final as subject questions are more likely to have non-target parses compared to object relatives (see Fig. 3). Previous research on L2 English has similarly found that V2 transfer seems to be more persistent than head-final transfer (compare Robertson & Sorace, 1999 on V2 and Kaltenbacher, 2001 on headedness). Of course, it remains to be determined how the structures in Table 3 are actually used in the input to which learners are exposed. Perhaps certain structures are over/under-represented in the more restricted input typically available to instructed learners? Completion of a variational analysis will require quantifying the frequency of the different input patterns in order to be able to establish the importance of the different possible input patterns.

While issues remain in the possible application of variational learning to L2A, the model at least permits a promising approach to questions of the connection between quantitative patterns in the input and the grammatical representations constructed by second language learners. Further research within the variational paradigm could further explore the role of the input and the role of online processing in the computation of L2 parses, and in turn, the role of these parses in the development of L2 grammar(s).

[2] Where 'aux' is included here, I refer to aspectual and modal auxiliaries. It has usually been assumed in the literature that *do*-support is a relevant cue for the (re)setting of verb movement parameters. However, as noted above, the role of *do*-support as an L2 cue is not straightforward, especially for speakers of Austrian German, which permits forms of *do*-support.

References

Amaral, Luiz & Roeper, Tom. (in press). Multiple Grammars and Second Language Representation. *Second Language Research*

Clahsen, Harald, & Felser, Claudia. (2006). Grammatical processing in language learners. *Applied Psycholinguistics* 27, 3-42.

Grüter, Theres. (2006). Another Take on the L2 Initial State: Evidence from Comprehension in L2 German. *Language Acquisition* 13(4), 287-317.

Kaltenbacher, Martin. (2001). *Universal Grammar and Parameter Resetting in Second Language Acquisition*. Frankfurt: Peter Lang.

Kroch, Anthony. (1994). Morphosyntactic Variation. In Kathryn Beals (Ed.) *Papers from the 30th Regional Meeting, Chicago Linguistic Society* (pp. 180-201). Chicago: Chicago Linguistic Society.

Kroch, Anthony. (2001). Syntactic change. In Mark Baltin and Chris Collins (Eds.) *The Handbook of Contemporary Syntactic Theory* (pp. 699-730). Oxford: Blackwell Publishers.

Lardiere, Donna. (2009). Some thoughts of the contrastive analysis of features in second language acquisition. *Second Language Research*. 25(2), 173-227.

Legate, Julie Anne & Yang, Charles D. (2007). Morphosyntactic Learning and the Development of Tense. *Language Acquisition.* 14(3), 315-344.

Pintzuk, Susan. (1999). *Phrase structures in competition - Variation and change in Old English*. New York: Garland.

Rankin, Tom. (in press). Variational Learning in L2: The Transfer of L1 Syntax and Parsing Strategies in the Interpretation of wh-questions by L1 German learners of L2 English. *Linguistic Approaches to Bilingualism.*

Robertson, Dan & Sorace, Antonella. (1999). Losing the V2 Constraint. In E. Klein and G. Martohardjono (Eds.) *The Development of Second Language Grammars: A Generative Approach.* (pp. 317-361). Amsterdam: John Benjamins.

Roeper, Tom. (1999). Universal Bilingualism. *Bilingualism: Language and Cognition* 2(3), 169-186.

Schwartz, Bonnie D., & Sprouse, Rex. A. (1994). Word order and nominative case in nonnative language acquisition: a longitudinal study of L1 Turkish-L2 German interlanguage. In T. Hoekstra & B. Schwartz (Eds.) *Language Acquisition Studies in Generative Grammar.* (pp. 317-368). Amsterdam: John Benjamins.

Schwartz, Bonnie D., & Sprouse, Rex. A. (1996). L2 cognitive states and the Full Transfer/Full Access model. S*econd Language Research.* 12(1), 40-72.

Slabakova, Roumyana. (2008). *Meaning in the second language*. Berlin: Mouton de Gruyter.

White, Lydia. (1990/91). The verb-movement parameter in second language acquisition. *Language Acquisition.* 1(4), 337-360.

White, Lydia. (1991). Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research* 7(2), 133-161.

White, Lydia. (1992). Long and short verb movement in second language acquisition. *Canadian Journal of Linguistics.* 37, 273-286.

Yang, Charles. D. (2000). Internal and external forces in language change. *Language Variation and Change.* 12, 231-250.

Yang, Charles D. (2002). *Knowledge and Learning in Natural Language.* Oxford: Oxford University Press.

Yang, Charles D. (2004). Universal Grammar, statistics or both? *Trends in Cognitive Science* 8(10), 451-456.

Yang, Charles D. (2010). Three factors in language variation. *Lingua* 120, 1160-1177

Zobl, Helmut & Liceras, Juana. (2005). Accounting for optionality in non-native grammars: parametric change in diachrony and second language development as instances of 'internalized diglossia'. In L. Dekydspotter and R. Sprouse (Eds.) *Proceedings of the 7th Biannual Generative Approaches to Second Language Acquisition Conference*. (pp. 283-291) Somerville, MA: Cascadilla Press.

Zobl, Helmut & Liceras, Juana. (2006). Competing grammars and parametric shifts in second language acquisition and the history of English and Spanish. In D. Bamman, T. Magnitskaia & C. Zaller (Eds.), *Proceedings of the 30th Annual Boston University Conference on Language Development.* (pp. 713-724) Somerville, MA: Cascadilla Press.

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