

Methodology matters: Implications for models of transfer in L3/Ln acquisition

The most common research question in the emerging field of formal linguistic approaches to L3 acquisition seeks to determine what the source of transfer, if any, is. Whereas in L2 acquisition transfer can come from the L1 or not obtain at all, L3/Ln acquisition is more dynamic as there are, at least, four logical possibilities: no transfer, default L1 transfer, default L2 transfer or non-default L1/L2 transfer. In the latter case, a further question arises. If transfer can come from either previously acquired system, what determines the selection. Understanding (and predicting accurately) transfer in the beginning of L3 acquisition is crucial because the learning task itself is partially determined on the basis of transfer. Several competing formal models have been proposed: Default L1 (Na Ranong and Leung, 2009; Hermas 2015); the L2 Status Factor (L2SF, Bardel and Falk, 2007); Cumulative Enhancement Model (CEM, Flynn et al., 2004) and the Typological Primacy Model (TPM, Rothman, 2011, 2015)¹. In the present study, we offer a meta-analysis of 43 studies to determine whether seemingly incompatible findings relating to the source of transfer in L3/Ln might originate in crucial differences in methodological standards applied. The analysis was carried out in a three-step process:

1. **Literature search**, through *Google scholar* and *ProQuest*.
2. **Coding**: 5 categories pertaining to different methodological practices were used: a) L3 proficiency level at time of testing, b) languages tested, c) production vs. comprehension d) (lack of) use of bi-directional (mirror-image) methodology, and e) typological relatedness within the language triad.
3. **Analysis**: Studies were initially grouped according to which model they claimed to support. Compatibility with alternative accounts and categorical associations with variables (a-e) above were then considered.

In total, data come from 1,237 participants (ranging from 1 to 64 per study). Table 2 shows number of studies claiming to support each model and also the number of studies compatible with all approaches (because some are claimed to support only one but in fact are compatible with other models). Tables 3-7 display categorical associations between models supported and the different methodological variables (see 2. Coding above). By examining the cross-tables below, some patterns can be observed: (1) most of the studies supporting the Default L1, the L2SF and the CEM come from learners who are beyond the initial stages of L3 acquisition—where it is difficult to determine what is truly transfer as opposed to byproducts of L3 interlanguage development—whereas studies supporting the TPM come from true beginner learners; (2) the vast majority only test the L3; there is no independent confirmation to know if the property in question had actually been acquired in the L2; (3) studies supporting the TPM and the L1SF mainly come from methodologies tapping into comprehension, whereas studies supporting the L2SF and the CEM mainly come from production; (4) most studies supporting the L2SF and the TPM target linguistic triads where one previous language and the target L3 are clearly related (e.g. L1 Romance L2 Germanic L3 Romance) and (5) only studies supporting the TPM and 1 supporting the L2SF use a bi-directional methodology.

The meta-analysis reveals that much of the disparate claims of supporting and/or providing evidence for particular models can be better understood as artifacts of: (i) not testing beginner learners to determine transfer source; (ii) not testing all three languages to know for sure that each learner has separate L1/L2 representations to transfer; (iii) comprehension vs. production (iv) not yet testing a large array of language combinations with various degrees of typological relatedness; and (v) the relevance of using mirror-image groups to isolate a possible default L1/L2 transfer effect, for example L1 Spanish L2 English L3 Italian vs. L1 English L2 Spanish L3 Italian. We conclude by discussing the implications of these results for the field, as well proposing some methodological standards to ensure maximal consistency and comparability across all future L3 studies.

¹ More recently, Slabakova (2016) and Westergaard et al. (2016) have proposed two new models. However, due to the newness of these proposals there is an understandable dearth of studies providing evidence against or for them.

Table 1. Variables and levels in the study.

Variable	Levels
Model supported	L1 SF, L2 SF, TPM, CEM, Other
Proficiency	Beginner, Post-beginner
Languages tested	L3 only, L3+(L2 and/or L1)
Methodology	Production, Comprehension
Mirror-image	Yes, No
Combination	Typologically related, not related

Table 2. Number of studies supporting each model.

Model	N. of claimed	N. of compatible
L1SF	8	10
L2SF	3	6
CEM	2	2
TPM	21	28
Other	8	8
Total	43	54*

*Note: There are more counts than actual studies because each study can be compatible with more than one model and thus counted more than once.

Tables 3-7. Percentage of studies claiming to support each model, as a function of methodological variable.

	Table 3. Level Tested		Table 4. Language tested		Table 5. Methodology	
	Beginner.	Post-Beg.	L3 only	L3 +(L1/L2)	Comprehension	Production
L1SF	7.1 %	11.9%	14.3%	4.8%	19%	0%
L2SF	2.4%	4.8%	7.1%	0%	2.4%	4.8%
CEM	0%	4.8%	4.8%	0%	0%	100%
TPM	28.6%	21.4%	26.2%	23.8%	42.9%	7.1%
Other	16.7%	2.4%	8%	0%	9.5%	9.5%

	Table 6. Combination		Table 7. Mirror-Image	
	Related	Not related	No	Yes
L1SF	4.8%	14.3%	19%	0%
L2SF	4.8%	2.4%	4.8%	2.4%
CEM	0%	4.8%	4.8%	0%
TPM	42.9%	7.1%	4.8%	45.2%
Other	9.5%	9.5%	14.3%	4.8%

References: Bardel, C., Falk, Y. (2007). The role of second language in third language acquisition: the case of Germanic Syntax. *Second Language Research*, 23, 459–484. **Flynn, S., C. Foley & I. Vinnitskaya. (2004).** The Cumulative-Enhancement Model for language acquisition: Comparing adults' and children's patterns in first, second and third language acquisition of relative clauses. *International Journal of Multilingualism*, 1, 3–16. **Na Ranong, S., & Leung, Y.I. (2009).** Null Objects in Thai-L2 English-L3 Chinese: An empiricist take on a theoretical problem. In Y. I. Leung (Ed.) *Third Language Acquisition and Universal Grammar* (pp. 144 – 161). Clevedon, UK: Multilingual Matters, **Rothman, J. (2011).** L3 syntactic transfer selectivity and typological determinacy: The typological primacy model. *Second Language Research*, 27, 107–127. **Slabakova, R. (2016).** The Scalpel Model of Third Language Acquisition. *The International Journal of Bilingualism*. **Westergaard, M., Mitrofanova, N., & Mykhaylyk, R. & Rodina, Y. (2016).** Crosslinguistic influence in the acquisition of a third language: The Linguistic Proximity Model. *International Journal of Bilingualism*.