

## Replication of Rothman (2011)

### L3 syntactic transfer selectivity and typological determinacy: The typological primacy model

In the last ten years, several models in third language acquisition have been proposed. Broadly, these models aim to predict how the L1 and/or L2 impact the process of acquiring a new, third, language. One such influential model is the Typological Primacy Model (Rothman, 2011), which posits that only one source language (the L1 or the L2) holistically impacts the L3. The primary factor guiding this influence is argued to be the relative perceived typological similarity between the L1 and L3 versus the L2 and L3, with the closer of the two possibilities resulting in full of that language system to the initial state of the L3, in an analogous fashion to the Full Transfer/Full access hypothesis by Schwarz and Sprouse (1996).

This model was initially proposed in the same study in which it drew on evidence from judgments of adjective order within determiner phrases based on contextual and semantic influences (Rothman, 2011). Following its proposal, the TPM has had a lasting impact on studies in the field of third language acquisition, and a recent systematic review of transfer studies in third language acquisition put forward evidence that, while competing models also found empirical support, the TPM could explain the results reported in the largest number of studies.

However, based on three primary arguments, I propose that a replication of this seminal study can benefit the field of third language acquisition. First, the sample size of the original study can be reasonably increased by benefiting from advances in online data collection methods in recent years. Second, in addition to replicating the original analysis, additional methods of testing for equivalence can be used to strengthen claims that no practical difference between L3 groups exist, such as a Test of Equivalence (Lakens, 2017). Finally, additional groups can be included to evaluate the predictions of newer models in tandem with the TPM.

#### **Type of replication.**

close or approximate replication

## **Design and availability of materials.**

The design of the replication study should be described so that all major aspects of the methodology can be evaluated, including availability of the initial study's materials.

## **Analysis.**

Two total analyses will be carried out. First, a direct replication of the analysis done in the original paper will be done for comparability. Following this time, a novel analysis will be carried out in which x total changes will be made. The distinctions proposed here for both tasks are first, using logistic regression given the binary outcome (correct or incorrect), second, adding two subtractive groups to the design in order to compare them to L3 groups, and, finally, adding a fixed effect predictor for Language to the models to take into account the baseline Spanish data. As a result, a multilevel logistic regression model will be run in which the outcome variable is the probability of choosing a correct answer as a function of group(4 total; L3 BP (L1 English), L3 BP (L1 Spanish), L2 BP (L1 English), and L2 BP (L1 Spanish)), language (Spanish and Brazilian Portuguese), adjective position (pre or post nominal) and their interaction. Though random effects were not mentioned directly in the original study, the present replication will include random intercepts per subject and per question.

Following the results of the model, a series of post-hoc tests of equivalence will be carried out to determine whether correctness is practically equivalent between groups. In particular, two L3 groups will be compared, and the newly added subtractive groups will be compared to each L3 group, for a total of 4 tests of equivalence per task.

### **Planned TOSTS Table:**

Group 1	Group 2
L3 BP (L1 English)	L3 BP (L1 Spanish)
L3 BP (L1 Spanish)	L2 BP (L1 Spanish)
L3 BP (L1 English)	L2 BP (L1 English)

**Impact** The value of this replications would have implications for both supporters of the TPM and other models. In the event that a difference is found between L3 groups or a subtractive and L3 group, the basis for the model itself could be called into question in favor of other models. On the other hand, a succesful replication of Rothman (2011) would suggest that full influence is possible and would strengthen the basis of the TPM and lessen counter arguments that include potential sampling issues, while also quantifying the (un)certainly related to this similar performance between groups.

**Original groups 4 total groups** 17 native Spanish 16 native BP 12 Italian L1 - English L2 - Spanish L3 15 English L1 - Spanish L2 - BP L3

Excluded based on L2 proficiency if less that advanced- near native

### **Original tasks**

**Semantic interpretation task Was this task given to participants in both the L2 and L3?, if not, proposing giving the interpretation task in both Spanish and BP**

This task was designed to evaluate how the adjective's position in a DP (pre or post nominal) impacted meaning in both the L2 and L3. The task had both a Spanish and Brazilian Portuguese version, in which 5 target items were tested in each of a pre-nominal and post-nominal condition. Equal numbers of fillers were used which tested other properties (e.g., anaphora resolution) used in subsequent studies. Below is an example taken of the Semantic interpretation task taken directly from Rothman (2011).

**Semantic interpretation task Prompt** “Los maridos honestos se merecen el respeto de sus mujeres.”

#### **Answer choices**

a.) *De todos los maridos que hay solo algunos, los que son honestos merecen el respeto de sus esposas.*

b.) Todo marido se merece el respeto de su esposa porque todo marido es, por ser marido, honesto.

**Prompt** “Los valientes Incas tenían mucho éxito.”

**Answer choices**

a.) Entre los incas había los valientes y los no valientes, así que todo inca que era valiente también tenía éxito

b.) *Ser Inca equivale a ser valiente, así que todo Inca tenía éxito.*

## Context-based Collocation Task

A second task elicited production(?) of a adjectival DPs by way of context. In the task, participants read a short story and had to fill in a blank at the end of the story with either a pre or post nominal adjective. Below is an example taken of the Context-based Collocation Task directly from Rothman (2011).

### *Example 1*

Mi esposa se llama Magda. Ella es una persona muy amable y cariñosa. Aunque solo tenemos 22 años, hace mucho tiempo que somos amigas. Magda es una vieja amiga \_\_\_\_\_ (viejo).

‘My best friend is named Magda. She is a very nice and affectionate person. Even though we are only 22-years-old, we have been friends for a long time. Magda is an old friend.’

### *Example 2*

Creo que la gente que tiene mucho dinero puede ser muy arrogante. Pero la semana pasada conocimos a unos millonarios que no son así. Los \_\_\_\_\_ millonarios simpáticos (simpático) que conocimos me cayeron muy bien.

‘I think that people that have a lot of money can be very arrogant. But, last week we met some millionaires that aren’t like that. I really like the nice millionaires that we met!’

## Proficiency measures

The original study mentioned that “each L3 participant was tested, via both a cloze test and a general grammar test, for overall proficiency in both the L2 and the L3”, but further details are not given about which tests were used. Also, the cutoff test score which corresponds to advanced/near-native was not mentioned nor justified. **Did they argue why high L2 proficiency was needed in their view?**