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# The Impact of Explicit Metalinguistic Knowledge in L1 on the Usage of the Present Subjunctive in Relative Clauses in L3

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## Abstract

This study aimed to investigate how learners from India, whose first language (L1) is Hindi, second language (L2) is English, and third language (L3) is Spanish, recognize and consciously utilize the cross-linguistic similarities and differences related to the present subjunctive mood in relative clauses. Notably, the subjunctive mood shows significant parallels between Hindi (L1) and Spanish (L3). The research involved 64 participants enrolled in the second year of Bachelor of Arts programs in Spanish at Jawaharlal Nehru University, representing different proficiency levels. An acceptability judgment task and a metalinguistic knowledge test were used to assess whether a high level of metalinguistic knowledge (MLK) and metalinguistic awareness (MLA) facilitated the transfer from L1 Hindi to L3 Spanish in acquiring the present subjunctive mood. Key findings from a mixed-effects model revealed varying levels of MLK among participants, but no statistically significant effect on overall performance was observed. These results suggest that, while MLK may vary, it does not necessarily translate into improved acquisition of the present subjunctive in L3 Spanish.[1]

**Keywords:** Cross-linguistic influence; L3 acquisition; multilingualism; metalinguistic awareness; acceptability judgment task

## 1. Introduction

Acquiring an L3 in a multilingual society offers a unique and enriching opportunity, exemplifying the rich tapestry of languages coexisting within a geographical area. In such diverse linguistic settings, learners immerse themselves in a multitude of languages and adeptly navigate their usage across various domains. Recognizing multilingualism as an inherent aspect of human linguistic proficiency underscores the need to explore the pivotal factors shaping

[1] This pilot study is part of my ongoing doctoral project titled "Cross-linguistic influence in the acquisition of Spanish as a third language." The data presented here were collected as part of the initial study conducted at Jawaharlal Nehru University, India, and the results solely represent this phase of the research.

language acquisition within this multifaceted context. The burgeoning field of L3 acquisition research has focused on unravelling these determinants (Cenoz, Hufeisen, & Jessner, 2001; De Angelis, Jessner, & Kresic, 2015; Otwinowska & De Angelis, 2014). Within this realm, L3 learners are viewed as individuals who have already acquired an L2, thereby possessing a wealth of conscious linguistic knowledge and learning experiences, which significantly facilitate the journey of acquiring an additional language. It can be argued that individuals embarking on acquiring additional languages resemble "specific language learners," equipped with a diverse linguistic repertoire and skilled in making comparisons across languages (Jessner, 2008, 2014). This breadth of experience offers them a unique advantage and influences their approach to further language acquisition endeavours. Recent studies have explored this notion, particularly focusing on adult L3 learners' lexical and syntactic awareness (Bono, 2011; García Mayo, 1999; Jessner, 2006; Otwinowska-Kasztelanic, 2011). Such research endeavours deepen our understanding of the intricacies involved in multilingual language acquisition and underscore the dynamic interplay between linguistic proficiency and the broader sociocultural context.

Building on this research trajectory, this pilot study aims to assess explicit MLK in L1 and its implications for transfer processes in L3 acquisition. Despite calls to broaden metalinguistic research to encompass L3 acquisition, this area has received comparatively less attention. Therefore, this study seeks to address this gap and illuminate the role of metalinguistic reflection in cross-linguistic transfer phenomena. Specifically, we investigate how explicit MLK in L1 facilitates transfer mechanisms in learning L3 languages. Our hypothesis posits that explicit MLK in L1 significantly influences transfer processes in L3 learning, particularly under specific contextual conditions. Focusing on Indian students proficient in L1 Hindi, L2 English, and learning L3 Spanish, our study examines a unique learning environment. These learners' linguistic proficiency may not uniformly reflect balanced bilingualism due to diverse sociolinguistic backgrounds and varied learning environments. Yet, L3 education in India often occurs through L2 English in higher education institutions, suggesting varying levels of explicit MLK and L2 proficiency among learners, which could impact their L3 acquisition.

Moreover, this study also has broader implications for L3 acquisition research, particularly in underrepresented multilingual societies like India. While current research predominantly centers on European language constellations, it is crucial to expand this focus to include other communities that are less studied. Such investigations provide insights into how prior language knowledge aids in acquiring new languages, especially when these languages share structural similarities. Additionally, the complex sociolinguistic landscape of the Indian subcontinent further underscores the significance of this study. Here, learners are exposed to multiple languages from an early age, navigating diverse social contexts where these languages are used. This intricate linguistic environment shapes a sophisticated language repertoire, well before formal L2 English instruction begins. By exploring the role of MLK in this context, our research contributes to understanding language acquisition dynamics in diverse multilingual settings and sheds light on MLK's role in L3 acquisition.

## 2. Background

### 2.1. Role of explicit L1 knowledge in L3

Researchers have found that multilinguals often outperform monolinguals in language acquisition tasks due to enhanced metalinguistic competence, aiding additional language acquisition (Thomas, 1988; Cenoz & Valencia, 1994; Schmidt, 1995; Herdina & Jessner, 2002; Melhorn, 2007). This competence, known as MLA, allows multilingual learners to discern

linguistic similarities and differences across languages (Jessner, 2008) and involves the ability to reflect on and manipulate linguistic elements (Baker, 2006; Bono, 2011; Jessner, 2008; Tunmer & Herriman, 1984). Studies show that MLK, measured by tasks like correcting grammatical errors, correlates with success in L2 learning (Alderson et al., 1997; Elder & Manwaring, 2004; Elder et al., 1999; Roehr, 2006). Roehr (2008) suggests that MLK in L2 learning is linked to proficiency in the native language, enhancing additional language acquisition efficiency.

The role of MLK in L3 acquisition has mixed findings. Some studies indicate MLK in L1 facilitates crosslinguistic influence (Falk et al., 2015), while others find no such effect (Angelovska, 2018; Foryś-Nogala et al., 2023; Vanhove, 2019). Variations in MLK measurement methods contribute to these differences. Thomas (1988) found that English-Spanish bilinguals outperformed monolinguals in learning French as L3, highlighting the importance of formal L2 instruction. Bono (2011) and Otwinowska-Kasztelanic (2011) suggest that multilingualism enhances MLA in L1. Vygotsky (1986) argues that explicit L1 knowledge develops through literacy and is further enhanced by foreign language acquisition. Assessing L1 MLK could provide insights into its role in foreign language success.

Recent studies indicate that L2 can have a stronger effect on L3 than on L1 (Bardel & Falk, 2007; Bohnacker, 2006; Falk & Bardel, 2011; Leung, 2005; Rothman & Cabrelli Amaro, 2010). The L2 status factor, defined by Hammarberg (2001), suggests learners suppress L1 as non-foreign and rely on L2 to approach L3. De Angelis (2005) describes this as an "association of foreignness," where non-native languages are cognitively linked, excluding L1. This model posits that in L3 acquisition, knowledge from L2 transfers more prominently than from L1 (Bardel & Falk, 2012; Falk & Bardel, 2010), irrespective of target-like word order (Bardel & Falk, 2007). L2 and L3, being formally learned, share cognitive and situational similarities distinct from L1 acquisition, such as the age of onset, learning outcomes, strategies, and MLK.

In light of these arguments, more research is needed to systematically investigate how explicit MLK or L2 proficiency equips multilingual learners to discern linguistic nuances across their languages, providing an advantage over monolinguals who may lack such knowledge in their L1.

### 2.2. The Acquisition of Spanish Subjunctive Mood

The acquisition of the subjunctive mood in Spanish has long been considered a challenging aspect of language learning. Within the generative framework model, there is a concept that knowledge from different domains (i.e., interfaces) interacts, occurring at both internal and external levels. Scholars such as Sorace (2004, 2005, 2011), Sorace and Filiaci (2006), Tsimpli and Sorace (2006), and Sorace and Serratrice (2009) argue that internal interfaces, like the syntax-semantics interface, pose fewer challenges than external interfaces, such as the syntax-discourse/pragmatics interface. Consequently, coordinating syntactic knowledge with other domain knowledge may emerge later or prove more challenging for language learners, leading to optionality. The challenge posed by the Spanish subjunctive for traditional learners of Spanish as a foreign language, particularly native English speakers, has been extensively documented (Collentine, 2003; Terrell, Baycroft, & Perrone, 1987). Various factors influence the acquisition of the subjunctive mood among L2 and L3/Ln learners. Collentine (2010) observed that English-speaking learners often struggle with correct subjunctive usage due to insufficient syntactic understanding. Similarly, Bruhn de Garavito (1997) noted lower proficiency among learners in sentences requiring obligatory coreference, attributing these challenges to L1 transfer effects. Mastery of verbal inflection and progression to the syntactic

stage are necessary for accurate mood application; however, the timing of reaching this stage for L2 Spanish learners remains unclear.

Collentine (2003) investigated the correlation between syntactic and morphological behaviours among advanced Spanish learners, noting differences in their discourse decoding compared to native speakers. Borgonovo and Prévost (2003) studied whether highly proficient Francophone Spanish learners could achieve native-like judgment in sentences with polarity subjunctive, concluding that very advanced proficiency enables learners to overcome transfer effects and acquire the subjunctive mood effectively. Many studies have focused on mood selection in Spanish relative clauses, particularly involving the present subjunctive, in both L1 (e.g., Pérez-Leroux, 1998) and L2 acquisition (Collentine, 1995; Gudmestad, 2006; Borgonovo, Bruhn de Garavito, & Prévost, 2008, 2015). Some research has also noted variation in subjunctive usage among native speakers (e.g., Borgonovo et al., 2015; Geeslin & Gudmestad, 2010; Gudmestad, 2008, 2012, 2013).

The subjunctive mood is widely used in relative clauses in both Hindi and Spanish, exhibiting striking similarities about non-specific referents and expressions of doubt. In contrast, English typically employs the indicative mood in these contexts. This study explores the present subjunctive mood in relative clauses, which is expressed similarly in L1 Hindi (example (2)) and L3 Spanish (example (1)), but differently in L2 English (example (3)). For instance, in Spanish (the L3, example (1)), the subjunctive mood is evident in the verb form 'viva', while in Hindi (the L1, example (2)), 'रहता हो' ('rahtā ho') is used. In contrast, English (the L2, example (3)) employs the indicative mood in the relative clause.

1- Necesito un electricista que viva en Alemania. (Spanish)
I need an electrician who lives in Germany.
"I need an electrician who lives in Germany".

2- मुझे एक ऐसे बिजलीवाले की जरूरत है जो जर्मनी मैं रहता हो I (Hindi)
I an electrician need who Germany live.
"I need an electrician who lives in Germany".

3- I need an electrician who lives in Germany. (English)

Based on the shared features between Spanish and Hindi concerning the subjunctive mood, this study provides an exceptional chance to explore whether advanced MLK in L1 Hindi assists in using the subjunctive mood in relative clauses within our study's framework. Moreover, given the typological dissimilarities between Spanish and Hindi, it is challenging for learners to leverage their understanding of subjunctive mood in their L1 unless they are consciously aware of how it operates, hindering their acquisition in the L3 context.

## 3. Research Question & Hypothesis

In our study, we aim to determine whether participants are aware of their explicit MLK in their L1 Hindi and whether they can leverage this knowledge to correctly judge the use of the subjunctive mood in both Hindi and Spanish within relative clauses. Given the structural similarities regarding the subjunctive mood in both Hindi and Spanish, we want to explore whether participants can take advantage of these similarities while learning the subjunctive mood in Spanish as a foreign language in the Indian context.

Therefore, we propose the following questions and hypotheses:

**RQ1**: Can participants effectively utilize their explicit MLK in L1 Hindi to employ the subjunctive mood within L3 Spanish relative clauses?

- Individuals exhibiting elevated explicit MLK in L1 Hindi are expected to outperform those with lower MLK levels in the context of L3 Spanish relative clauses.

**RQ2**: Does the limitation of a subjunctive mood in L2 English negatively affect the acquisition of the present subjunctive mood in Spanish relative clauses?

- According to the L2 status factor model, individuals with advanced proficiency in L2 English and less MLK are unlikely to show competence in using the subjunctive mood in L3, regardless of their explicit MLK levels.

## 4. Data Collection & Coding

### 4.1. Procedure

The data collection process began following approval from Jawaharlal Nehru University (JNU), the host institution. Class instructors responsible for Spanish core language modules, which encompass Spanish grammar classes, and the coordinator overseeing language students in the B.A. program, were approached to disseminate an email or make a lecture announcement at the onset of each session, inviting students to take part in the study. Subsequently, the researcher visited the host institution to brief participants on the research's nature before they proceeded to complete the surveys. Participants were assured that their participation in the study would not impact their academic performance, and they were informed that they could decline to participate at any time without consequence. Upon receiving ethical approval, access to the online data collection portal was granted, specifically through https://www.onlinesurveys.ac.uk/. Participants were required to provide consent by reviewing the consent form on the portal and clicking continue if they agreed to participate. Participants who opted not to participate were allowed to leave, as the designated time slot was exclusively dedicated to this study and not utilized for any other teaching activities, regardless of their participation decision.

Furthermore, participants in the study completed a series of assessments via the online survey portal, including a language background questionnaire, proficiency tests in Spanish and English, and an untimed contextualized written acceptability judgment task. The language background questionnaire gathered demographic information such as gender, age, details about additional languages spoken in the family, frequency of language use, age of language acquisition, language dominance, self-reported language proficiency ratings, and motivation for learning Spanish. To qualify for participation, individuals had to identify Hindi as their L1 and English as their L2. Consequently, individuals whose L1, or dominant language differed were excluded from the study. The online survey portal facilitated the administration of surveys and tests, ensuring a streamlined data collection process.

### 4.2. Participants

For this pilot study, we selected 22 participants enrolled in the third-year B.A. in Spanish program at JNU. Inclusion criteria required participants to have Hindi as their L1, English as their L2, and Spanish as their L3. Students who did not meet these language criteria were excluded from the study during data collection.

Table 1 below outlines the linguistic profiles of participants who were excluded from the study. This criterion ultimately constrained our sample size, as locating and recruiting participants with the precise linguistic background we required proved challenging. Our primary focus was

on native Hindi speakers due to the linguistic similarities shared between Hindi and L3 Spanish, aiming to investigate the role of MLK in L3 acquisition.

**Table 1. Profile of Excluded Participants in the Study**

| Other languages speakers(n=19) | Dominant language |
|---|---|
| Telugu (n=3) | Telugu |
| Odiya(n=1) | Odiya & English |
| Marwadi(n=2) | Marwari & Hindi |
| Bengali(n=2) | Bengali & English |
| Assamese(n=1) | Assamese & English |
| Nepali(n=1) | Nepali & Hindi |
| Marathi(n=1) | English & Sanskrit |
| Kumauni(n=1) | Kumauni & Hindi |
| Bhojpuri(n=2) | Bhojpuri & Hindi |
| Marwari(n=2) | Marwari & Hindi |
| Malyalam(n=1) | Malyalam & English |
| Khortha(n=1) | Khortha & Hindi |
| Avadhi(n=1) | Avadhi & Hindi |

### 4.3. English proficiency

We employed LexTALE (Lemhöfer & Broersma, 2012), an untimed lexical decision task that typically takes about 5 minutes to complete. Participants were required to determine the validity of 60 forms, consisting of 40 words and 20 non-words, by classifying them as either English words or non-words. While LexTALE primarily focuses on vocabulary assessment, it has demonstrated reliability in measuring general English proficiency, particularly at advanced levels (Lemhöfer & Broersma, 2012).

### 4.4. Explicit MLK test

To assess the participants' explicit MLK in Hindi as their L1, a test adapted from Maite Correa (2008) was used. A similar test was developed in Hindi to measure both explicit and implicit knowledge of the language among the participants. Various parts of speech categories in Hindi, such as nouns, adjectives, verbs, etc., were selected. The participants were then asked to identify these categories within each sentence. This task consisted of a total of 9 items. In the examples **(8)** and **(9)** below, the participants were asked to identify the infinitive and verb forms in the sentence.

**(8)**

| मुझे हिंदी बोलना और पढ़ना मुश्किल लगता है।<br>I find.1SG NEG. Hindi OBJ. speak.PRES.V and read.PRES.V dificult..<br>'I don't find speaking and reading Hindi difficult. |
|---|
| Please type/copy in the box which word(s) is/are the INFINITIVE. |

**(9)**

| उसने मुझे ऐसा करते हुए देखा।<br>He.3SG. me.OBJ. saw.PAST doing this.OBJ<br>'He saw me doing this' |
|---|
| Please type/copy in the box which word(s) is/are the VERB. |

### 4.5. Acceptability judgment task (AJT)

An AJT was conducted in Spanish, where participants read a brief context, and rated sentences based on their acceptability using a 4-point Likert scale. The task aimed to assess the acceptability of sentences containing the subjunctive mood in Spanish. Participants provided ratings for each sentence, indicating their perceived acceptability on the 4-point Likert scale. As illustrated in Table 2 below:

**Table 2. Description of Conditions**

| | **INDICATIVE (favored)** | **SUBJUNCTIVE (favored)** |
|---|---|---|
| Variable use | Condition 1: With specific referents in restrictive relative clauses | Condition 2: With non-specific referents in restrictive relative clauses |
| Obligatory use | Condition 3: factual (or no doubt) | Condition 4: dubitative |

This study comprised four conditions that combined the preferred mood with the variable versus obligatory use of the subjunctive. Restrictive relative clauses were chosen for variable use, while the contrast between factual and dubitative clauses was selected for obligatory use. In each condition, six items were generated. Each item presented a context designed to influence interpretation (e.g., towards a specific or non-specific referent), and participants were asked to evaluate two potential responses to that context. One response featured the indicative verb form, while the other featured the subjunctive verb form. Participants rated these responses on a 4-point Likert scale (1=completely acceptable; 2=acceptable; 3=unacceptable; 4=completely unacceptable), with an additional "I don't know" option. These response options were presented to participants in a randomized order.

**1-Context:** Mary no está muy contenta con su vida y un día decide mudarse a Alemania porque su madre vive ahí. Se lo cuenta a su mejor amiga Paula y ella le responde:

'Mary is not happy with her life and one day she decided to move to Germany because her mother lives there. She shares this news to her best friend Paula, and she says:'

| | | | | |
|---|---|---|---|---|
| **(A) Estoy segura de que tu madre comparte el piso contigo.**<br>I am.1SG.sure.ADJ.about that your mother.3SG shares PRES.IND. the flat.OBJ with you.<br>**'**I'm sure your mother shares a flat with you' | | | | |
| 1=Totalmente inaceptable | 2=Inaceptable; | 3 = Aceptable; | 4=Totalmente aceptable | No sé |
| **(B) Estoy segura de que tu madre comparta el piso contigo**<br>I am.1SG. sure. ADJ. about that your mother.3SG shares PRES.SUBJ. the flat.OBJ with you.<br>'I'm sure your mother shares a flat with you' | | | | |
| 1=Totalmente inaceptable | 2=Inaceptable; | 3 = Aceptable; | 4= Totalmente aceptable | No sé |

## 5. Data Analysis

We utilized cumulative link mixed-effects models with a probit link function in R (R Core Team, 2017) to analyse the ordinal ratings (1 for totally unacceptable to 4 for totally acceptable) of response sentences. The ordinal package (Christensen, 2019) provided the CLMM function, accommodating the ordinal nature of Likert scale ratings and allowing for the inclusion of random factors. Flexible thresholds were set between Likert values to capture potential differences in perceived distance. For model selection, we employed the buildmer package (Voeten, 2020), which identifies the maximally converging model and conducts backward stepwise elimination based on log-likelihood ratio changes from nested model comparisons.

Our analysis included fixed effects for four conditions: specific-referent (SR), non-specific referent (NSR), factual (Fact), and dubitative (Doubt), each with two levels: subjunctive (SUB) and indicative (IND), as well as MLK, English proficiency, and all interactions. Additionally, random intercepts for participants and items were incorporated.

## 6. Results

As previously mentioned, the aim of this study was to investigate how learners from India recognize and consciously leverage the cross-linguistic similarities and differences related to the present subjunctive mood in relative clauses in L3 Spanish. The first subsection presents the overall descriptive statistics from the Spanish AJT analysis, highlighting the average ratings for the four experimental conditions. Following the AJT analysis in Spanish, the subsequent subsections examine the independent variables—MLK and English proficiency—to understand the overall proficiency levels and MLK among our participants. After presenting the descriptive test results for each variable, we will discuss the regression mixed effects model used to determine the effects of MLK and English proficiency on our dependent variable.

### 6.1. Spanish AJT analysis

In this section, we begin with an overview of the descriptive statistics for Spanish across the four experimental conditions: specific referent, non-specific referent, factual, and dubitative. The results are presented as the mean rating of responses for each of the four points on the Likert scale (1 = 'totally unacceptable' to 4 = 'totally acceptable'). The Spanish AJT consisted

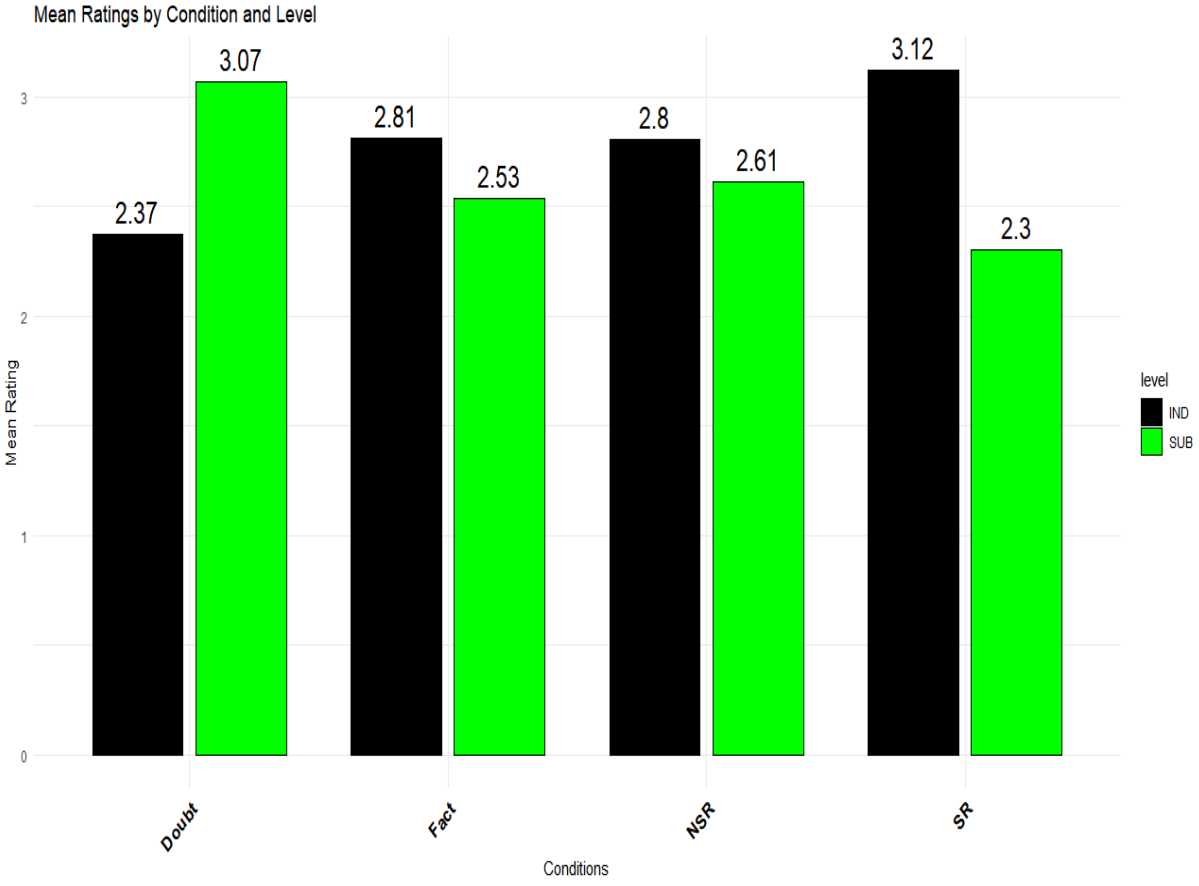
of 48 items designed to examine participants' ratings of the present indicative versus subjunctive in Spanish, evenly divided into two categories: 24 items favouring the indicative mood (IND) and 24 items favouring the subjunctive mood (SUB). To evaluate the overall performance of participants, we calculated the combined ratings across all four conditions for both the indicative and subjunctive moods.

Table 3 and figure 1 below provide a clear illustration of the mean ratings for each condition across both levels.

**Table 3. Acceptability Judgement Task Scores**

| Condition | Level | Mean Rating |
|---|---|---|
| SR | IND | 3.12 |
| SR | SUB | 2.30 |
| NSR | IND | 2.80 |
| NSR | SUB | 2.61 |
| Fact | IND | 2.81 |
| Fact | SUB | 2.53 |
| Doubt | IND | 2.37 |
| Doubt | SUB | 3.07 |

**Figure 1. Graphical Representation of AJT Mean Ratings**




## 6.2. MLK and English proficiency

The descriptive analysis further focused on our two independent variables—English proficiency and MLK score—and their impact on Spanish AJT scores. We examined how variations in English proficiency and MLK influenced participants' performance on the Spanish AJT. The English Lextale test, which measures proficiency, has a maximum score of 40 points, while the MLK score, which measures awareness of one's own language, reached a maximum of 6.11. Notably, both variables exhibited outliers in the dataset.

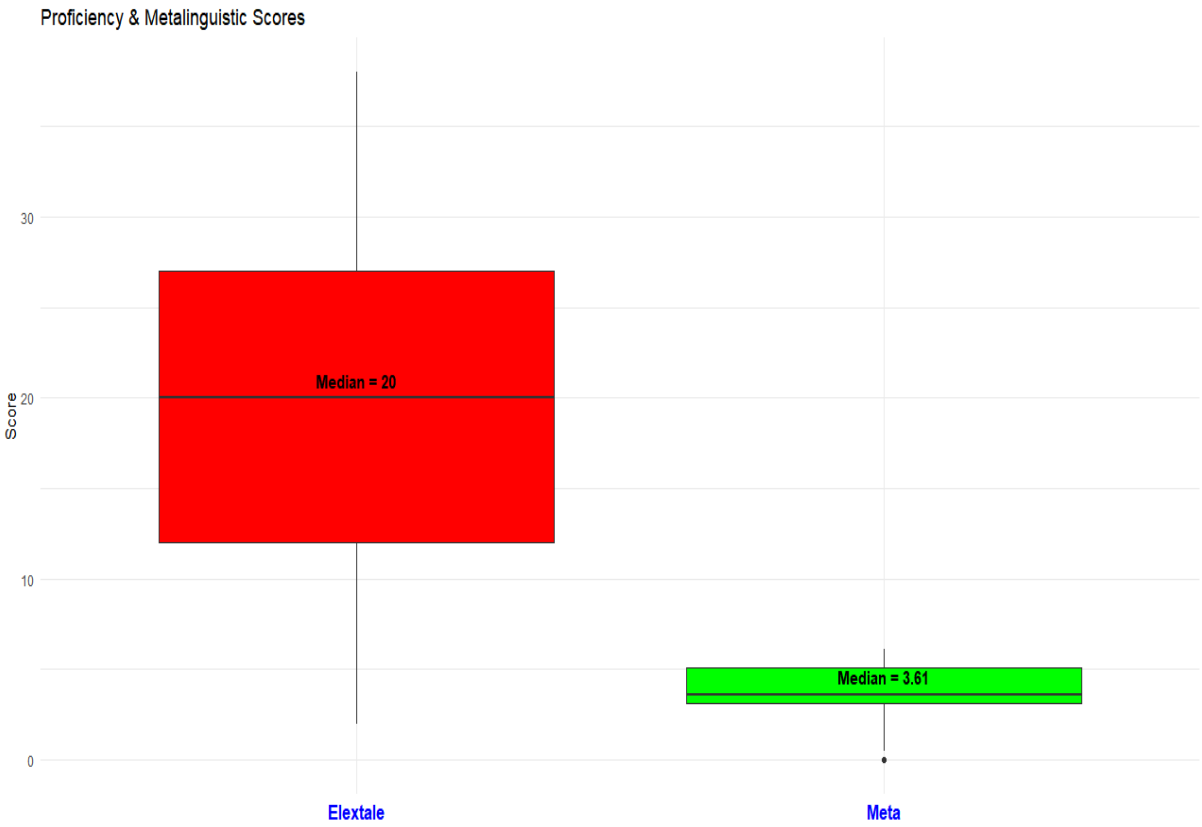
Additionally, the scores revealed non-normal distributions for both the variables among our participants. Consequently, we opted to use the median as a measure of central tendency to better understand the typical scores in these variables. This is illustrated below in Table 3.

**Table 4. Results on L1 Metalinguistic Test**

| Variable | Median | Standard Deviation | Max. |
|---|---|---|---|
| L1 Metalinguistic test | 3.61 | 1.809085 | 5.61 |
| L2 proficiency score | 20.00 | 9.072309 | 32 |

The same information can be visualized in Figure 2 below on the complete scale, illustrating the distribution of metalinguistic and L2 proficiency across the scale. The boxplots indicate the median for both MLK and L2 proficiency.

**Figure 2 Metalinguistic & English proficiency score distribution**




## 6.3. Mixed-effect model results

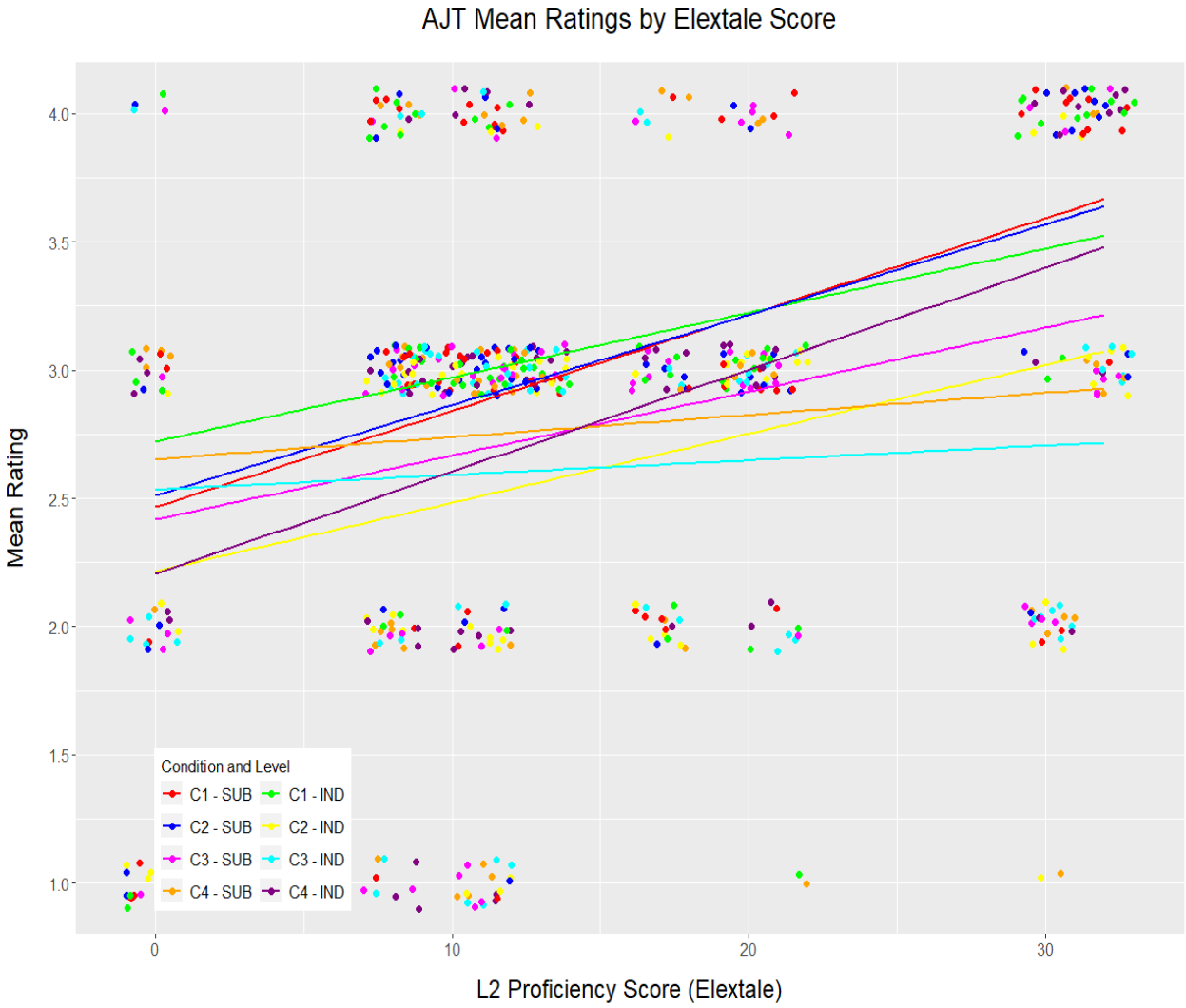
Lastly, after the descriptive analysis of our dependent and independent variables, we conducted a statistical analysis of our ordinal Likert scale data to thoroughly investigate and address the research questions posed in our study. The mixed-effects model enabled us to determine whether our independent variables, MLK and L2 proficiency, had any effect on our dependent variable. Specifically, we used a cumulative link mixed model (CLMM) within RStudio to explore the influence of MLK on judgment accuracy in L3. This model provided insights into the potential effects of these variables on the AJT responses of our participants.

This investigation encompassed four conditions (SR, NSR, Fact, and Doubt), incorporating random intercepts for both participants and items, as well as participant-by-condition interactions. Utilizing the ordinal library (Christensen, 2019) in RStudio, our analysis revealed that MLK (refer to Appendix A) did not yield statistical significance ($\beta = 0.15605$, SE = 0.11337, $z = 1.376$, $p = 0.1687$), suggesting it had no notable effect on the dependent variable. To examine whether participants with high MLK scores showed consistent differences across MLK levels, we recalibrated MLK scores based on quartiles. Furthermore, we conducted pairwise comparisons to determine if performance varied across different quartiles. The analysis revealed that participants with low explicit MLK scores (Q1: $\beta = -0.1018$, SE = 0.410, $z = -0.248$, $p = 1.0000$) and high MLK scores did not significantly differentiate in mood choice between the NSR and Doubt conditions (Q3: $\beta = -0.0443$, SE = 0.475, $z = -0.093$, $p = 1.0000$). Similarly, in the Fact and SR conditions, both low MLK (Q1: $\beta = -0.0897$, SE = 0.415, $z = -0.216$, $p = 1.0000$) and high MLK scores (Q4: $\beta = -0.6836$, SE = 0.482, $z = -1.418$, $p = 0.7923$) exhibited the same pattern.

**Figure 3: Performance on the AJT Based on MLK**


Conversely, our analysis revealed that English proficiency (refer to Appendix B) was statistically significant (β = 0.062072, SE = 0.023447, z = -2.647, p = 0.00811) and showed notable two-way and one-way interactions with conditions such as Fact and NSR. To examine whether these differences held across proficiency levels, we recalibrated proficiency scores based on quartiles (Q1: 25th percentile on the lower end, Q3: 75th percentile on the upper end). The first quartile revealed that participants with low proficiency were more likely to rate DOUBT with SUB (Q1: β = 0.23450, SE = 0.09508, z = 2.466, p = 0.0136) and were also likely to rate SR higher with SUB (Q1: β = -0.22690, SE = 0.09916, z = -2.288, p = 0.0221). Additionally, they rated SR higher with SUB (Q1: β = -0.19344, SE = 0.09784, z = -1.977, p = 0.0480). On the contrary, no significant interactions were found based on the third quartile. Furthermore, we conducted pairwise comparisons to determine if participants showed any significant patterns in choosing SUB and IND across our experimental conditions. Our pairwise comparison revealed that participants with high proficiency in the fourth quartile (Q4: β = 1.896, SE = 0.604, z = 3.138, p = 0.0363) rated SR higher with IND and NSR with SUB.

**Figure 4. Performance on the AJT Based on English Proficiency**




## 7. Discussion

Our study aimed to explore whether participants have awareness of their explicit MLK in L1 Hindi and if they can effectively apply this understanding to evaluate the use of SUB in Spanish within relative clauses. Using the AJT in L3 Spanish for analysis, we addressed our research questions. RQ1 ("Can participants effectively utilize their explicit MLK in L1 Hindi to employ the subjunctive mood within L3 Spanish relative clauses?") served as our starting point to examine the distributions across our four experimental conditions: SR, NSR, Fact, and Doubt. Our analysis of the AJT results revealed distinct preferences among participants in the different experimental conditions. Specifically, a preference for the IND over the SUB was observed in certain contexts. Average ratings indicate that participants favored the IND over the SUB mood in the SR condition (with average ratings of 3 and 2.79, respectively). Similarly, in the NSR condition, the IND received higher ratings compared to the SUB (with average ratings of 3 and 2.6, respectively). In the factual contexts, participants showed a preference for the IND (with average ratings of 3 and 2.7), while in the dubitative condition, the SUB received a slightly higher rating than the IND (with average ratings of 2.8 and 2.6, respectively).

These findings suggest that while participants did show some awareness and usage of the subjunctive mood in L3 Spanish relative clauses, their explicit MLK in L1 Hindi did not significantly impact their performance. Thus, our initial hypothesis predicting better performance among those with higher MLK scores was not supported by the findings, as no significant effects were observed. This indicates that participants were not conscious of the similarities between L1 and L2 and were unable to leverage them for accuracy in the SUB in L3 relative clauses.

Regarding our RQ2 ("Does the absence of a subjunctive mood in L2 English negatively affect the acquisition of the present subjunctive mood in Spanish relative clauses?"), proficiency in English, despite the lack of a productive SUB, significantly influenced participants' performance. Higher proficiency was correlated with greater accuracy in selecting the subjunctive mood in relative clauses. These findings suggest that proficiency had a more pronounced positive effect on overall performance than the negative impact stemming from the absence of the SUB in English in relation to relative clauses.

Overall, the study's findings indicate that while explicit MLK in L1 Hindi did not significantly influence the use of the SUB in L3 Spanish, proficiency in L2 English played a crucial role. This highlights the importance of L2 proficiency over explicit metalinguistic knowledge in the acquisition of an L3, suggesting that language learners might benefit more from improving their overall proficiency in L2 rather than focusing solely on MLK.

Furthermore, a high level of MLK did not always correspond directly with high proficiency. While those with low proficiency did not demonstrate significant effects, pairwise comparisons revealed superior performance among those with higher proficiency. These findings align with prior research indicating positive transfer from L2 (Williams and Hammarberg, 1998; Bardel and Falk, 2012). Additionally, the reliance on L2 rather than L1, despite high MLK scores, may be attributed to the foreign language context of our learners, each having varied L2 learning experiences, with many starting their L2 acquisition later in life.

## 8. Limitations

Given the nature of our pilot study, several limitations must be acknowledged. The limited number of participants restricts the generalizability of our findings, and a larger sample size in future research could provide more robust and reliable data. A larger sample would also allow for a more nuanced analysis of the variables in question. Additionally, a more diverse participant pool from different institutions could help determine whether these findings are consistent across various learner profiles.

A significant limitation of this study is the exclusion of the language of instruction as a variable, which likely affected our results. Including a control group where L1 was used as the language of instruction, in contrast to L2, would likely have generated different outcomes. The overdependence on L2 may have made it difficult for participants to tap into their implicit or explicit knowledge of L1 to gauge and compare similarities among all three languages.

Since English is predominantly used in higher education in India, its role as the medium of instruction may have led learners to rely more on English than Hindi, potentially overlooking Hindi's influence on L3 Spanish acquisition. This reliance on English could have affected the learners' approach to the SUB in Spanish, given the structural similarities between English and Spanish. Future research should consider including the language of instruction as a variable to better understand its impact on L3 learning.

Moreover, while Spanish and English share more similarities than Hindi and Spanish, some structural parallels exist between Hindi and Spanish. These similarities may have influenced the learners' performance and should be explored further in future studies. Given the sociolinguistic complexities in India, it is crucial to collect data from various institutions across different regions to understand the broader applicability of MLK and the L2 status factor in L3 acquisition.

## 9. Conclusion

The present paper aimed to uncover AJT ratings across our four experimental conditions, where contexts related to factual and specific referents favored the indicative mood, while dubitative and non-specific referents favored the SUB. Our findings indicated that second-year Indian learners showed accuracy in using the subjunctive mood in relative clauses. However, our first hypothesis regarding explicit MLK was not confirmed by the study, whereas the second hypothesis related to the L2 status factor was confirmed. Overall, the findings strongly support the role of L2 influence in learning an L3. It is worth noting that English serves as the language of instruction for teaching Spanish, which may have influenced learners to rely more on English than Hindi, potentially overlooking similarities between L1 and L3 regarding the SUB.

These findings have practical implications for language teaching in India's multilingual context. Specifically, educators should focus on effectively integrating L1 into L3 instruction, considering its strong influence. Teachers could develop strategies that explicitly connect the grammatical structures of Hindi and Spanish, especially in contexts where the SUB is used. Additionally, to prevent the underutilization of L1, instructors might design activities that highlight similarities between English, Hindi, and Spanish, helping students leverage their entire linguistic repertoire.

Moreover, language instructors should also emphasize developing MLK in L1, especially when there are structural similarities among all the languages involved in the learning process. This allows students to leverage their linguistic repertoire while learning an additional language. Additionally, considering the sociolinguistic complexities and varied language experiences of learners, it is beneficial to create a learning environment that recognizes and incorporates these diverse backgrounds.

Despite the study's limitations, it has provided valuable insights into the role of L2 influence on L3 learning. This pilot study aligns with previous research highlighting the facilitative role of L2 in learning an L3. Nevertheless, further research is essential. Future studies should incorporate additional variables and explore diverse sociolinguistic contexts to comprehensively understand MLK and the L2 status effect among Indian students. Such research will not only deepen our understanding but also inform more effective and contextually appropriate language teaching practices.

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# Appendix A

**Table 5: Summary of CLMM with MLK**

| **Fixed Effects** | **β** | **SE** | **z** | **P** |
|---|---|---|---|---|
| Meta | 0.15605 | 0.11337 | 1.376 | 0.1687 |
| combined_columnC1_SR_SUB | -0.24706 | 0.34155 | -0.723 | 0.4695 |
| combined_columnC2_NSR_IND | -0.09615 | 0.34338 | -0.280 | 0.7795 |
| combined_columnC2_NSR_SUB | -0.55105 | 0.34129 | -1.615 | 0.1064 |
| combined_columnC3_Fact_IND | -0.17962 | 0.34720 | -0.517 | 0.6049 |
| combined_columnC3_Fact_SUB | -0.49664 | 0.34652 | -1.433 | 0.1518 |
| combined_columnC4_Dubt_IND | -0.71837 | 0.34349 | -2.091 | 0.0365 * |
| combined_columnC4_Dubt_SUB | -0.49928 | 0.34457 | -1.449 | 0.1473 |
| Meta:combined_columnC1_SR_SUB | -0.03922 | 0.10760 | -0.364 | 0.7155 |
| Meta:combined_columnC2_NSR_IND | 0.07631 | 0.10988 | 0.694 | 0.4874 |
| Meta:combined_columnC2_NSR_SUB | -0.03948 | 0.10695 | -0.369 | 0.7120 |
| Meta:combined_columnC3_Fact_IND | 0.05416 | 0.10900 | 0.497 | 0.6193 |
| Meta:combined_columnC3_Fact_SUB | 0.02995 | 0.10787 | 0.278 | 0.7813 |
| Meta:combined_columnC4_Dubt_IND | 0.02727 | 0.10696 | 0.255 | 0.7988 |
| Meta:combined_columnC4_Dubt_SUB | 0.05001 | 0.10824 | 0.462 | 0.6441 |

**Random Effects**

| | **Variance** | **Std** |
|---|---|---|
| **Item** | **0.007995** | **0.08942** |
| **Participant** | **0.267410** | **0.51712** |

## Appendix B

**Table 6: Summary of CLMM with MLK**

| **Fixed Effects** | **β** | **SE** | **z** | **P** |
|---|---|---|---|---|
| Elextale | 0.062072 | 0.023447 | 2.647 | 0.00811 ** |
| combined_columnC1_SR_SUB | 0.082351 | 0.379363 | 0.217 | 0.82815 |
| combined_columnC2_NSR_IND | 0.362169 | 0.384874 | 0.941 | 0.34670 |
| combined_columnC2_NSR_SUB | 0.205340 | 0.375121 | 0.547 | 0.58410 |
| combined_columnC3_Fact_IND | 0.051117 | 0.380841 | 0.134 | 0.89323 |
| combined_columnC3_Fact_SUB | 0.321585 | 0.377362 | 0.852 | 0.39411 |
| combined_columnC4_Dubt_IND | -0.260622 | 0.382495 | -0.681 | 0.49564 |
| combined_columnC4_Dubt_SUB | -0.347404 | 0.384107 | -0.904 | 0.36576 |
| Elextale:combined_columnC1_SR_SUB | -0.029913 | 0.021729 | -1.377 | 0.16862 |
| Elextale:combined_columnC2_NSR_IND | -0.017803 | 0.022641 | -0.786 | 0.43170 |
| Elextale:combined_columnC2_NSR_SUB | -0.058387 | 0.021601 | -2.703 | 0.00687 * |
| Elextale:combined_columnC3_Fact_IND | -0.005116 | 0.022467 | -0.228 | 0.81986 |
| Elextale:combined_columnC3_Fact_SUB | -0.050539 | 0.021859 | -2.312 | 0.02078 * |
| Elextale:combined_columnC4_Dubt_IND | -0.026871 | 0.021906 | -1.227 | 0.21997 |
| Elextale:combined_columnC4_Dubt_SUB | -0.001530 | 0.022414 | -0.068 | 0.94559 |

**Random Effects**

| | **Variance** | **Std** |
|---|---|---|
| **Item** | **0.01449** | **0.1204** |
| **Participant** | **0.28210** | **0.5311** |