

The acquisition of English relative clauses by L1 Arabic and Korean speakers

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Abstract

This study examined the interaction of language transfer and language processing on the second language acquisition of English relative clauses (RCs) by native speakers of Arabic and Korean at intermediate- and advanced-level English proficiency. Experimental participants completed self-paced reading and sentence judgment tasks on-line. Results show that L1 transfer has a powerful impact on intermediate-level learners; however, transfer effects fade at advanced levels, when L2 RC processing constraints are more influential. Taken together, the results of the sentence judgment task and the reading time results indicate that L1 influence and language processing interact in the L2 acquisition of English RCs, and that the mystery of L1 transfer may be solved by analysing its interaction with other SLA factors.

Keywords: language processing, language transfer

Introduction

Some SLA studies of RC acquisition have argued that L2 learners tend to accept and produce resumptive pronouns (RPs) in the L2 if RPs are acceptable in the L1 (Gass, 1979). Thus, they claim that transfer effects result when L2 learners judge stimuli such as the following:

- 1(a). The relatives_i [who_i we visited ______i last night] enjoyed the evening.
(gapped condition)
- 1(b). *The relatives_i [who_i we visited **them**_i last night] enjoyed the evening.
(resumptive condition)

The RC in sentence 1(a) is described as a “gapped” RC because the parser must link the filler, *who*, with the gap after *visited*. In 1(b), *them* is the resumptive pronoun.

Other SLA studies (e.g., Tezel 1998) have argued that L2 learners’ acceptance and production of RPs in RCs in the L2 is an effect of language processing. As the distance between the filler and the gap increases, the parser is strained because it must hold the filler in short term memory while it searches for the gap. The parser must also use surrounding RC context to infer the gap location; however, in RCs with RPs, the difficulty involved in searching for an

empty category is removed as the empty category is overtly expressed. Therefore, RCs with RPs are easier to process.

I argue that both L1 transfer and language processing constraints affect the second language acquisition of RCs, and designed an experiment to tease them apart.

Methodology

Twenty-one L1 speakers of Arabic, 50 L1 Korean speakers, and 16 L1 English speakers participated in the study. The L1 Arabic and Korean participants were subdivided into intermediate- and advanced-level L2 English proficiency groups based on their scores on the grammar and reading sections of the Michigan Test of English Language Proficiency.

Experimental items consisted of English subject (SRC), direct object (DORC), and oblique RCs (ORC), counterbalanced in gapped and resumptive conditions as in sentences 1(a) and 1(b). Participants reviewed a total of 48 experimental items and 56 fillers. All experimental items were presented online and were randomized by the E-Prime application. Participants read sentences presented in cumulative fashion at their own pace. Each key press revealed a word of an item and would remain on the computer screen until all words in the sentence appeared with subsequent key presses. After all words were read, the sentence disappeared from the screen, and then participants were prompted to rate items on a 4 point scale in which 1=certainly correct, 2=possibly correct, 3=possibly incorrect, and 4=certainly incorrect.

Predictions

1. L1 influence should cause the L1 Arabic speakers to accept English RCs with RPs more frequently than L1 Korean speakers at equivalent proficiency levels because RPs are acceptable in Arabic direct object and oblique RCs, whereas Korean bans RPs in these RC types.
2. The non-native speakers should accept items in the RP condition more frequently than native speakers because RPs can facilitate RC processing.
3. The non-native speakers should take longer than the native speakers to read the experimental items.
4. The native speakers of Arabic should read RPs more quickly than the native speakers of Korean and English. Native speakers of Arabic will find RPs in English RCs quite normal because they are acceptable in Arabic, whereas L1 Korean and English speakers will pause in surprise on encountering them because they rarely appear in Korean and English RCs.

Results

Transfer effects were evident in comparisons within L1 groups of RCs in the gapped and resumptive conditions. The Arabic speakers preferred gapped SRCs to SRCs with RPs, as they do in Arabic ($t=-7.62$, $p<.0001$). All of the L1 Arabic speakers at the intermediate level spoke Saudi Arabian Arabic, a dialect that allows RPs and gaps in DORCs. They may have transferred their L1 grammar to their judgments of DORCs in the gapped and resumptive conditions; as predicted, the Arabic speakers' average ratings of DORCs in the gapped and RP conditions was close to 2 on the rating scale ("possibly correct") and there was no statistically significant difference between them ($t=-.33$, $p=1.00$). The Arabic-speaking participants were expected to prefer English ORCs with RPs to gapped ORCs because gapped ORCs are banned in Arabic, a prediction that was confirmed ($t=4.01$, $p=.035$).

Most of the sentence judgments made by the intermediate-level Korean speakers are in line with L1 transfer hypotheses as well. Korean RCs license gaps and ban RPs in all the RC types used in this study, a distribution that seems to have influenced the participants' judgments of the SRCs and DORCs, but not the ORCs. The Korean participants clearly preferred gapped SRCs to SRCs with RPs ($t=-7.71$, $p<.0001$) and preferred gapped DORCs to DORCs with RPs ($t=-5.20$, $p=.0002$), but seemed to perceive gapped ORCs and ORCs with RPs as equally unacceptable ($t=.85$, $p=1.00$), perhaps because the complexity of these RCs caused excessive strain on the parser.

For advanced-level non-native speakers, the sentence judgment task shows only one possible transfer effect. The Arabic speakers' ratings of gapped and resumptive ORCs did not contrast significantly ($t=-3.21$, $p=.37$), perhaps because some of them may have transferred their L1 preference for RPs in ORCs just enough to ensure that there was no significant difference. The L1 Korean speakers, on the other hand, preferred gapped ORCs to ORCs in the RP condition at statistically significant levels ($t=-12.24$, $p<.0001$), a result consistent with the distribution of gaps and RPs in Korean ORCs.

The sentence judgment task also showed that the non-native speakers at both English proficiency levels accepted RPs in DORCs and ORCs more frequently than the native speakers of English at statistically significant levels, a result indicating that RPs alleviate the strain placed on the parser during sentence processing.

The reading time results provide evidence of language transfer. The L1 Korean speakers took longer to read experimental items with RPs as compared with gapped items (Korean intermediate comparison: $t=6.73$, $p<.0001$; Korean advanced comparison: $t=7.89$, $p<.0001$). When this comparison was run on Arabic speakers' reading times, however, no statistically significant differences emerged, consistent with experimental predictions (Arabic intermediate comparison ($t=-3.08$, $p=.08$; Arabic advanced comparison: $t=-3.15$, $p=.0532$). The Korean speakers, perceiving RPs as odd or unexpected constituents due to

L1 influence, slowed down to read them, whereas the Arabic speakers did not decrease their reading speed to the same degree because RPs are common in their L1.

Reading time data of individual words demonstrate that non-native speakers may process RCs more slowly than native speakers, but not in a manner that is qualitatively different. For example, all participants read the verb and the remaining words in the RC predicate more slowly than any individual words preceding them, a result of the extra time required by the parser to assign theta roles on encountering the verb and to find the gap afterwards. The L2 learners, however, needed more time to read individual words in the RC predicate than native speakers, and therefore may have expended comparatively more effort to assign theta roles and find gaps. Therefore, it seems that L2 learners can perform the same RC processing operations as native speakers (i.e. theta role assignment, finding gaps), but with less speed and efficiency. This finding contradicts Marinis et al. (2005), who claim that L2 learners cannot develop complex RC representations with fillers and gaps.

Discussion

Filipović and Hawkins (2013) claim that L1 transfer is likely to occur when it enhances L2 processing, and when it will not cause communicative disruptions. These claims are supported by the experimental results, which indicate that RPs facilitate RC processing, a phenomenon that may have also increased the likelihood of L1 transfer in the case of the L1 Arabic speakers. Additionally, RPs in English RCs do not lead to breakdowns in communication, as demonstrated by the occasions when native speakers of English accept and produce them. In summary, contrary to Tezel (1998), transfer and processing interact in the SLA of RCs. SLA may therefore benefit from an approach that integrates phenomena such as transfer and processing, and that views SLA theories as complementary descriptions of a complex reality rather than as clashing viewpoints, an integrative paradigm Filipović and Hawkins (2013) describe as Complex Adaptive Systems Theory (CASP).

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