# Introduction

In the main article, our central concern was to compare the heritage speaker group to the baseline group. However, baseline speakers are often first-generation immigrants with varying proficiency in the majority language, and their L1 can undergo attrition or influence from the majority language. To test this possibility, we also compared the results of our baseline speakers to those of monolingual Mexican Spanish speakers reported previously (Hoot & Leal, 2020, 2022; Leal & Hoot, 2022). Space limits prevented us from including the full details of this comparison in the main article, so we report them in this supplementary file.

For a full description of the monolingual group, we refer readers to our previous publications. In brief, though, it was composed of 42 monolingual speakers of Mexican Spanish recruited in Merida, Yucatán. Their mean age was 21.5 years (range 18-39). All had completed secondary school (and most had at least some university).

The data analysis procedures used for the results reported here were the same as those in the main article.

# Forced-choice Task Results

## Subject Focus

Here we ask: Do the word orders chosen to realize subject focus by the baseline bilinguals differ from those chosen by the monolinguals?

We observe similar overall percentages in Figure S2-1, and a binomial logistic regression reveals no group differences (Table S2-1).

Figure S2-1. Word order chosen by group, subject focus (baseline vs. monolingual)

Table S2-. Binomial logistic regression, subject focus (baseline vs. monolingual)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | **Coefficient** | **SE** | **95% CI** | **Odds Ratio**  | **95% CI of Odds Ratio** | ***F*** | ***p*** |
| Group | -0.301 | 0.240 | -0.780 – 0.178 | 0.740 | 0.458 – 1.195 | 1.571 | .214 |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept | 0.401 |  | 0.176 |
| By-Item Intercept | 0.138 |  | 0.102 |

## Object/PP Focus

Here we ask: Do the word orders chosen to realize object/PP focus by the baseline bilinguals differ from those chosen by the monolinguals?

We observe similar overall percentages in Figure S2-2, and a multinomial logistic regression reveals a significant effect by focus type but no group differences (Table S2-1).

Figure S2-2. Word order chosen by focus context and group, Object/PP focus (baseline vs. monolingual)

Table S2-. Multinomial logistic regression, object/PP focus (baseline vs. monolingual)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | ***F*** | ***p*** |  |  |  |  |
| Group | 0.113 | .893 |  |  |  |  |
| Type | 26.604 | <.000 |  |  |  |  |
| Group\*Type | 0.104 | .901 |  |  |  |  |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept (VOPP vs. VPPO) | 0.908 | 0.276 |
| By-Participant Intercept (VOPP vs. FF) | 0.821 | 0.265 |

We conducted the same follow-up binomial tests that we report for the baseline and heritage speakers in the main paper and find precisely the same pattern of results: the probability of choosing VOPP does not change between the two conditions, but the probability of choosing VPPO and Fronting does. At each stage, we observe no effects by group nor interactions between group and focus type. Overall, the baseline speakers pattern exactly like the monolinguals in this regard.

# Self-paced Reading Task Results

## Subject/Object Focus

Here we ask: Do the baseline bilinguals differ from the monolinguals in their processing of VOS/VSO under subject/object focus?

Graphs of the monolingual logRTs are published in Hoot and Leal (2020, 2022). Here we report only the results of the statistical comparison.

In the critical region (Table S2-3), we observe an interaction between focus context and word order for both groups but no group differences. For the post-critical region (Table S2-4), we likewise observe no group differences.

Table S2-. Linear mixed-effects model, subject/object focus, critical region

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | **Coefficient** | **SE** | **95% CI** | ***F*** | ***p*** |
| Focus | 0.028 | 0.048 | -0.069 – 0.125 | 0.343 | 0.562 |
| Order | 0.031 | 0.047 | -0.063 – 0.125 | 0.442 | 0.508 |
| Focus\*Order | -0.232 | 0.099 | -0.433 – -0.031 | 5.498 | 0.025 |
| Group | -0.119 | 0.079 | -0.277 – 0.038 | 2.285 | 0.136 |
| Focus\*Group | -0.035 | 0.093 | -0.217 – 0.147 | 0.140 | 0.708 |
| Order\*Group | 0.060 | 0.094 | -0.128 – 0.248 | 0.409 | 0.525 |
| Focus\*Order\*Group | 0.039 | 0.186 | -0.325 – 0.403 | 0.045 | 0.832 |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept | 0.059 | 0.016 |
| By-Participant Slope over Order | 0.004 | 0.023 |
| By-Item Intercept | 0.016 | 0.008 |
| By-Item Slope over Focus | 0.004 | 0.017 |
| By-Item Slope over Focus\*Order  | 0.037 | 0.076 |

Table S2-. Linear mixed-effects model, subject/object focus, post-critical region

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | **Coefficient** | **SE** | **95% CI** | ***F*** | ***p*** |
| Focus | 0.034 | 0.019 | -0.002 – 0.071 | 3.396 | 0.066 |
| Order | -0.036 | 0.021 | -0.079 – 0.007 | 2.946 | 0.097 |
| Focus\*Order | -0.079 | 0.040 | -0.160 – 0.003 | 3.948 | 0.058 |
| Group | -0.043 | 0.032 | -0.108 – 0.021 | 1.790 | 0.186 |
| Focus\*Group | 0.006 | 0.037 | -0.066 – 0.079 | 0.030 | 0.862 |
| Order\*Group | -0.043 | 0.039 | -0.120 – 0.034 | 1.221 | 0.273 |
| Focus\*Order\*Group | 0.127 | 0.077 | -0.026 – 0.280 | 2.752 | 0.102 |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept | 0.010 | 0.003 |
| By-Participant Slope over Order | 0.002 | 0.004 |
| By-Participant Slope over Focus\*Order | 0.005 | 0.015 |
| By-Item Intercept | 0.002 | 0.001 |
| By-Item Slope over Focus | 0.002 | 0.003 |
| By-Item Slope over Focus\*Order  | 0.004 | 0.011 |

## Object/PP Focus

Here we ask: Do the baseline bilinguals differ from the monolinguals in their processing of VOPP/VPPO under object/PP focus?

Graphs of the monolingual logRTs are published in Hoot and Leal (2020, 2022).. Here we report only the results of the statistical comparison.

In the critical region (Table S2-5), we observe an effect by word order but no group differences. For the post-critical region (Table S2-6), we likewise observe no group differences.

Table S2-. Linear mixed-effects model, object/PP focus, critical region

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | **Coefficient**  | **SE** | **95% CI** | ***F*** | ***p*** |
| Focus | -0.048 | 0.040 | -0.127 – 0.031 | 1.426 | 0.233 |
| Order | -0.174 | 0.040 | -0.253 – -0.095 | 18.754 | 0.000 |
| Focus\*Order | 0.038 | 0.084 | -0.130 – 0.206 | 0.205 | 0.652 |
| Group | -0.004 | 0.078 | -0.159 – 0.151 | 0.003 | 0.959 |
| Focus\*Group | 0.095 | 0.081 | -0.063 – 0.253 | 1.390 | 0.239 |
| Order\*Group | 0.001 | 0.081 | -0.156 – 0.159 | 0.000 | 0.985 |
| Focus\*Order\*Group | 0.201 | 0.168 | -0.135 – 0.536 | 1.426 | 0.237 |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept | 0.064 | 0.016 |
| By-Participant Slope over Focus\*Order | 0.032 | 0.074 |
| By-Item Intercept  | 0.020 | 0.008 |

Table S2-. Linear mixed-effects model, subject/object focus, post-critical region

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fixed Effect** | **Coefficient**  | **SE** | **95% CI** | ***F*** | ***p*** |
| Focus | -0.028 | 0.016 | -0.059 – 0.003 | 3.190 | 0.074 |
| Order | -0.015 | 0.020 | -0.054 – 0.025 | 0.557 | 0.458 |
| Focus\*Order | -0.025 | 0.032 | -0.087 – 0.037 | 0.609 | 0.435 |
| Group | -0.007 | 0.027 | -0.060 – 0.046 | 0.068 | 0.795 |
| Focus\*Group | -0.011 | 0.032 | -0.073 – 0.052 | 0.110 | 0.740 |
| Order\*Group | 0.055 | 0.039 | -0.024 – 0.133 | 1.933 | 0.169 |
| Focus\*Order\*Group | -0.058 | 0.063 | -0.183 – 0.066 | 0.850 | 0.357 |
| **Random Effects** | **Variance** | **SE** |
| By-Participant Intercept | 0.007 | 0.002 |
| By-Participant Slope over Order | 0.008 | 0.004 |
| By-Item Intercept | 0.002 | 0.001 |

# Conclusion

In all the tests we conducted, the baseline bilinguals patterned exactly like the monolingual group, leading us to conclude that the baseline bilinguals have not undergone attrition for this linguistic feature. This allows us to establish that any apparent divergence by the heritage speakers is likely the result of heritage language acquisition rather than ‘intergenerational attrition’ (although, in the end, we find no such divergence).

# References

Hoot, B., & Leal, T. (2020). Processing subject focus across two Spanish varieties. *Probus*, *32*(1), 93–127. https://doi.org/10.1515/probus-2019-0004

Hoot, B., & Leal, T. (2022). Crosslinguistic influence from Catalan and Yucatec Maya on judgments and processing of Spanish focus. *Linguistic Approaches to Bilingualism*, *Online Ahead of Print*. https://doi.org/10.1075/lab.21020.hoo

Leal, T., & Hoot, B. (2022). L2 representation and processing of Spanish focus. *Language Acquisition*, *29*(4), 410–440. https://doi.org/10.1080/10489223.2022.2049599