

Investigating the role of attention in second language grammar learning: An eye-tracking study

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One widely held assumption within second language (L2) acquisition research is that attention to specific forms in L2 input allows for development of those forms (Robinson, 2003; Schmidt, 1990; Schmidt, 1995; Tomlin & Villa, 1994). However, the majority of evidence supporting this claim, specifically with regard to morphosyntax, derives from studies without concurrent measures of attention (e.g., Gass, Svetics, & Lemelin, 2003) or from studies with think-aloud protocols (e.g., Leow, 1998), which may be subject to underreporting and reactivity (Mackey, 2006). Critically, to reliably assess attentional allocation and its relationship to L2 morphosyntactic development, a valid, concurrent measure of attention should be employed

The present study takes such an approach by utilizing both theory and methodology from cognitive psychology in its research design and interpretation of results. The study is theoretically informed by an account of attention that distinguishes between *external* and *internal* attentional mechanisms (Chun, Golomb, & Turk-Browne, 2011), which tightly align with L2 instructional interventions that have been designed to manipulate attention. More specifically, *input enhancement* (Sharwood Smith, 1991; Sharwood Smith, 1993) allows for examination of external manipulations of attention on L2 development whereas *structured input practice* (VanPatten & Cadierno, 1993; VanPatten, 2002), allows for examination of internal manipulations of attention. Regarding methodology, the present study utilizes participant eye-movements as a measure of attention as they interact with these instructional interventions.

Three groups of novice learners of Spanish learned a novel target structure: direct object pronouns—e.g., *lo* in *lo besa Maria* ('Maria kisses him')—which represents the theme in the sentence. All participants were exposed to this form through a picture-sentence matching activity in which a sentence was presented followed by two images, one of which depicted the sentence's meaning. After completing 30 items with no attentional manipulation, which served as a baseline measure, participants completed an additional 30 items under one of two attentional conditions (external/internal) or under a control condition with no attentional manipulation. The *external attentional condition* consisted of the presentation of the target form in a different color than the rest of the sentence, as in input enhancement (see Figure 1). The *internal attentional condition* consisted of an initial presentation of two images which differed only in the theme, followed by the sentence containing the target form, which encoded the relevant linguistic information, as in structured input practice (see Figure 2). Finally, L2 development was assessed with immediate and delayed interpretation tasks (12-14 days after the immediate post-test). Additionally, measures of learner motivation and working memory were taken in order to assess the relationships between these variables, attentional allocation and learning gains.

Preliminary results suggest that both the external and internal attentional conditions led to increased attention to the target form as compared to baseline, however they appear to differ qualitatively from one another. Learning was evidenced in the internal group only, as evidenced on the immediate and delayed post-test suggesting that the learning effects were durable. Furthermore, the relationships between attention, learning and other individual difference factors (e.g., motivation and working memory) will also be explored through correlation analyses. Full results of the study (data collection ongoing) are expected to show how externally and internally directed attention contribute to L2 morphosyntactic development, which should have implications both for L2 and cognitive psychology theory as well as for understanding the effectiveness of particular instructional interventions (Sharwood Smith, 1991; Sharwood Smith, 1993; VanPatten & Cadierno, 1993; VanPatten, 2002).

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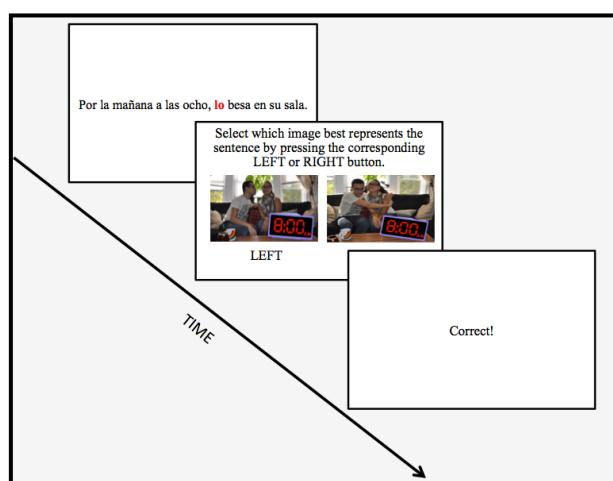


Figure 1. Sample trial from the external attention condition.

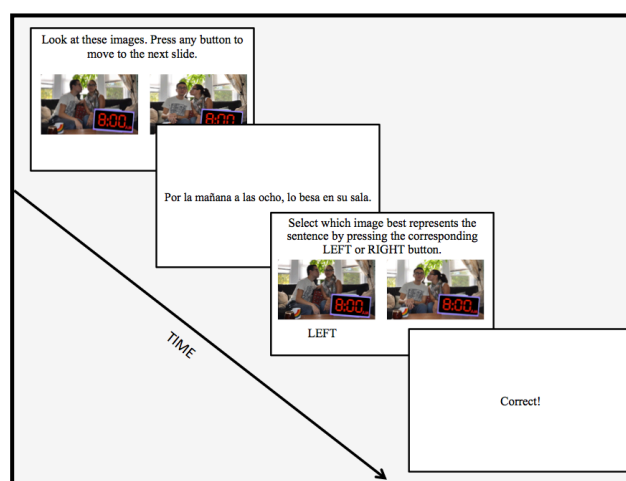


Figure 2. Sample trial from the internal attention condition.