

Reply to commentaries Heather Goad and Lydia White

We would like to thank our colleagues for their thoughtful and thought-provoking responses to our paper outlining the Prosodic Transfer Hypothesis (PTH). Many of the commentaries offer useful extensions of the PTH as well as raising more general issues. We see the commentaries as falling into two main thematic groupings. The first grouping addresses empirical issues, including some cases of disagreement with certain aspects of our analyses (**Dehé, Grijzenhout, Herschensohn & Gess, Leal & Renaud, Trenkic**), as well as suggestions for how to further extend the range of coverage of the PTH to other levels of structure or other populations (**Bruhn de Garavito, Grijzenhout, Muntendam**). The second grouping addresses more conceptual issues, including the design of the language faculty (**Nasukawa**), the nature of the input required to restructure a prosodic representation (**Archibald, Carroll, Matthews**), the implications of variability (**Cabrelli, Hawkins, Schiller**), the scope of the PTH (**Archibald, Özçelik**), including the complementarity of the PTH with other theories of morphological acquisition (**Hawkins, Leal & Renaud**), and how theories of prosodic representation interface with theories of processing (**Carroll, Schiller**). Of course, the division between empirical and conceptual issues is not rigid and many of the responses offer insights that fall into both groupings.

As far as empirical issues are concerned, a number of commentaries address what might be deemed technical matters. While accepting, in principle, our underlying assumptions about the nature of prosodic representations (but see **Nasukawa** for a different view), they query some of the specific representations that we have proposed, either for the L1 or for the interlanguage grammar (**Dehé** and **Grijzenhout** for determiners, **Leal & Renaud** for Spanish plurals, **Herschensohn & Gess** for clitics). For example, **Dehé** questions the structure we have proposed for articles in Icelandic, presenting data to show that these are affixal clitics rather than free clitics at the right edge; she points out that, in consequence, we cannot use English and Icelandic to test the third type of minimal adaptation we have proposed, namely when L1 structures are licensed at new edges (as per (18c) in our paper). However, **Dehé** goes beyond showing that the English/Icelandic pairing cannot be used to test (18c): she offers other pairings, including Icelandic and Turkish, since the Turkish article is, like the Icelandic article, an affixal clitic but at the left edge. In other words, an Icelandic/Turkish pairing would be an appropriate means to test the third type of minimal adaptation. This seems to us to be a fruitful way of developing the theory: proposing alternative representations that can nevertheless be used to test for prosodic transfer.

Bruhn de Garavito offers another kind of extension. Rather than proposing different prosodic representations, she discusses an additional situation where the PTH may provide an explanation. We have presented the PTH as accounting for several well-known puzzles in the literature (e.g., low suppliance of functional morphology, better performance on regulars than irregulars, both by L2 learners of English). **Bruhn de Garavito** discusses an additional puzzle, the well-known difficulties that L2 learners of Spanish have with clitic climbing, and shows how the PTH might account for them. Again, we welcome such extensions to the situations covered by the PTH, particularly when they involve L2s other than English, as is the case here.

Yet other extensions are proposed in commentaries that identify additional learner groups about which the PTH might have something to say, different levels of structure that might be implicated and different learning situations. **Muntendam**, for example, raises several of these issues, pointing out that the PTH up to now has focused on unidirectional transfer from L1 to L2.

She suggests that the PTH might be extended to other learner groups (simultaneous bilinguals) and to L2 influence on the L1, leading presumably to attrition in the prosodic domain.

Turning to the more conceptual side of things, we have offered the PTH as a theory that can account for variability in L2 performance. We focus specifically on prosodically conditioned variation, that is, on situations where the same functional element is pronounced appropriately or omitted or stressed, depending on prosodic similarities or differences between the L1 and L2, as well as prosodic differences within the L2, such as stem shape. Several commentators have highlighted other kinds of variation that the PTH does not account for. **Cabrelli** addresses the need to consider individual differences, which may be attributable to differences in the ability to use linguistic cues in processing and, hence, to develop the relevant prosodic structure. **Schiller** similarly suggests that explanations for variation must consider processing constraints alongside representation. **Hawkins** notes that when L2ers appear to have acquired the relevant L2 prosodic structure (by means of minimal adaptation, etc.), they nevertheless fail to supply the relevant morphology consistently. He provides specific examples of how the PTH could be complemented by other theories such as the Missing Surface Inflection Hypothesis (Prévost & White, 2000) or the Representational Deficit Hypothesis (Hawkins, 2000) to account for this kind of variance. **Leal and Renaud** suggest a different kind of complementarity, showing how combining the PTH and the Feature Reassembly Hypothesis (Lardiere, 2009) could lead to predictions about acquisition difficulty. We have, of course, always maintained that the PTH is complementary to other theories of morphological acquisition, so it is encouraging to see such suggestions as to how the PTH might interface with other accounts.

Beyond functional morphology, **Muntendam** and **Özçelik** suggest that the PTH might be relevant for explaining aspects of L2 acquisition that are not related to the interface between morphosyntax and prosody. Muntendam points to the importance of addressing higher levels, such as sentential prosody, an area which we have begun to address in our more recent work on how properties like syntactic ambiguity (Goad, Guzzo & White, submitted) or pronoun interpretation (Goad et al., 2018) can be affected by prosodic factors (for the former, see also Dekydtspotter et al., 2008). **Özçelik** suggests that the PTH can be extended to lower prosodic structure. As he points out, L1 constraints on, for example, foot structure, could even impact how learners produce inflected forms in the L2.

Unlike **Matthews**, who welcomes our expansion of the PTH as potentially affecting receptive language as well as production, **Archibald** and **Özçelik** argue that, in moving beyond production, the scope of the PTH may have become too broad. **Özçelik**, in particular, cautions that it may be impossible to distinguish between comprehension problems that have a prosodic explanation as opposed to a syntactic one. Teasing apart prosody from syntax in comprehension is precisely what Lieberman (2013) set out to determine, with some success in demonstrating prosodic (rather than syntactic) transfer as far as inflectional morphology is concerned. Allowing for the possibility that the PTH affects comprehension, something that we ourselves initially resisted, does not mean that comprehension will be affected in every case. Sometimes, the syntactic analysis that the learner arrives at will override any potential problems of prosodic (mis)representation.

Several commentators raise the question of developmental trajectories, that is, changes in prosodic representation over the course of L2 acquisition. Indeed, **Archibald** suggests that the PTH has the potential to be a transition theory, as opposed to a property theory which has largely been our assumption up until now. We have mostly looked at learners at a particular point in time (not necessarily the endstate, contrary to the assumption of certain commentators) and we

have made cross-sectional comparisons of learners at different proficiency levels. **Cabrelli** advocates for the use of longitudinal data as well (see also **Carroll**), while **Herschensohn and Gess** point to the importance of electrophysiological data in illuminating developmental stages.

Related to the issue of development are questions concerning the nature of the input, particularly what kind of input would motivate changes in prosodic representation. **Matthews** argues that the kinds of production problems that we have addressed in the PTH arise from failures to parse the L2 input, with prosodic transfer from the L1 affecting the learner's intake. **Archibald** notes the need to consider how robust or frequent the evidence in the input is, since differences along these dimensions might explain why lower proficiency learners are successful in acquiring certain L2 representations but not others, in other words, why prosodic transfer is more persistent in some cases than in others. Similarly, **Carroll** argues for the need for research demonstrating when new representations are or are not learnable from the L2 input to which learners are exposed. We agree with the need to more closely examine the structures we propose in light of the nature of the input required to bring about changes. Indeed, we hypothesize that some types of input, namely 'teacher talk' and the characteristic prosody it involves, may hinder the establishment of target-like representations in the functional domain (e.g., articles may be produced as stressed in the classroom input to which learners are exposed).

In the context of development, we note as well that at least one commentator (**Grijzenhout**) interprets the PTH as a claim about L2 acquisition in adulthood. This is not surprising, given that all of our experimental studies have involved adult learners. We are, though, not at all committed to the idea of prosodic transfer as some kind of age effect. Indeed, we suspect that such transfer would show up in the grammars of simultaneous bilinguals (see **Muntendam**) or child L2 acquirers as well. It is an open question as to whether there is, in fact, prosodic transfer in child grammars, whether children are better at minimal adaptation than adults, or better at completely abandoning inappropriate L1 representations; these issues remain to be tested. Indeed, monolingual children display asymmetries in suppliance of functional morphology similar to some of the patterns we have discussed for L2 adults, suggesting that it takes some time to establish target-appropriate representations regardless of transfer (see, e.g., **Grijzenhout & Penke (2008)** for inflection in German and **Demuth & Tremblay (2008)** for articles in French).

Finally, we turn to the issue of falsifiability, raised by **Hawkins** and **Trenkic**. That is, in the studies conducted so far, L1s and L2s have been chosen that differ in terms of the prosodic representations under investigation (nominal and verbal morphology, articles); we have argued that prosodic transfer arises in such circumstances and can often be overcome by means of minimal adaptation. However, some of the non-target productions that we have attributed to prosodic transfer are also found in speakers whose L1s share the relevant prosodic structure with the L2. Therefore, to show that it is truly prosodic differences that are at play, it is necessary to include additional groups whose L2s have an L1-like prosodic structure, as **Trenkic (2007)** did. We do not agree with her analysis and point out that, in the case of articles, the PTH is not only concerned with article omission but with a range of other behaviours including inappropriate stressing of articles and substitution of other (stressed) determiners for articles (see **Goad & White (2009)** for a rebuttal of **Trenkic's** position). Nevertheless, we fully concur with the need to include comparisons with L1s that share the prosodic structures of the L2, in order to strengthen (or not) the claim that prosodic transfer is implicated in L2 morphological acquisition.

In conclusion, the PTH is couched in terms of a particular (and recognized) theory of prosodic representation (principally **Selkirk, 1996**), as we have outlined in our paper. Within this

framework, alternative analyses are available for the same morphosyntactic element. The claims of the PTH are analysis specific – changing one analysis will change the claims made concerning one L1/L2 pairing without invalidating the theory as a whole. As many of the commentaries have shown, there are several new directions in which the theory can be pursued, involving different structures, different language combinations, different types of learners and different stages of development. We are confident that this special issue will engender more work at the interface between morphosyntax and prosody, an understudied area in L2 acquisition.

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