

Peer Commentaries

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The keynote article by Bordag, Gor, and Opitz (2021) comes at a time when psycholinguistics research on L1 and L2 has reached some sort of a plateau. Now, there are serious concerns with respect to the individual differences’ angle to the research, cultural and contextual variations in cognition and mental systems. In this backdrop, the ONTOGENESIS MODEL (OM) attempts to explain the development of L2 lexical representations, without making it sound like a model of bilingualism. Although it looks promising, I have a few remarks on the concepts assumed in the paper.

A central point of the authors is that L2 representations in most speakers are FUZZY. Fuzziness indicates some sort of incompleteness that is pervasive across dimensions when it comes to L2 words. Various linguistic and extra linguistic attributes are weak in L2 learners for various reasons. The authors’ interpretation of the existing data from various domains is effective in motivating their proposal but I did not find the explanations on the robustness of the fuzziness adequate. I agree with the general line of thinking but the narrative does not make it clear if fuzziness is a hypothesis or an observation. It is certainly true that L2 representations are weak due to many factors. But, this is not always so for many domains (Clahsen & Felser, 2006). There are cases where L2 representations are quite strong and native like, depending on various socio-cultural and historical factors in such speakers. Further, many L2 learners achieve native like fluency in the second language when the two languages have no cognates and belong to different families all together. Therefore, we can not be so sure that fuzziness as a concept is universal and therefore making it the central theme of a corrective model might be premature. Further, the many instances of confusions that native speakers display with L2 representations throughout their lives could be limited to the specific language pairs that have been referred to in the article – Japanese–English bilinguals and not be applicable to all types of bilinguals.

The authors accept that their model is based on mostly perceptual and not production data. The reason why such data has not been considered is because production research is low in quantity. Therefore, we cannot be sure what is ‘fuzziness’ in its developmental, psycholinguistic and cognitive sense when one intends to produce a word. Is it related to the lack of conceptual flexibility of the second language or are there constraints that are more cognitive? Further, individual differences in language production should play a role in minimizing the fuzziness, if any. Therefore, while perception data is a good place to start, it is not enough when the aim is to have a ‘holistic model’ that accounts for the abilities and deformities of L2 representations in L2 users. Data from production matters, since many L2 users are judged as deficient based on production. They tend to substitute words or use forms of words that look alien to native speakers. The authors don’t discuss why these arise even if at times the L2 user gets the correct training. What is biologically or cognitively so constraining that it never ever reaches the “optimum” as the authors envisage? This point is not a criticism but is relevant if researchers studying language production want to apply the OM model for their data. The conclusion sections of the paper also appear ambitious when the authors see their model being adopted in many scenarios including patients who have problems in L2 but I think the model itself is limited at this point in time.

Interestingly, the authors show some reluctance in their model being called a ‘bilingual’ word processing model – although, at many instances they don’t hesitate in citing and explaining well known bilingualism models such as the BIA+ (Dijkstra & Van Heuven, 2002) or the RHM (Kroll & Stewart, 1994). I failed to understand the conceptual source of this reluctance. When the narrative is about the development and representation of L2 words, and given that our ideal speaker also has L1, bilingualism inevitably plays a role. It is to be understood as the dynamic give and take between these two languages over a life span in different circumstances. Therefore, its predictions should be looked at from the point of view of L2 acquisition in response to L1, which is the case most often. This should explain why speakers of certain language pairs i.e., Hindi–English at sufficient level of proficiency, immersion and acculturation don’t display significant fuzziness in L2 (e.g., L2 proficient bilinguals made fewer errors and were faster naming in L2 compared to L1 in Bhatia, Prasad, Sake & Mishra, 2017) whereas it’s evident in Japanese speakers of English. This is just an example, but I am sure many such instances can be found if we look at bilingualism around the world.

Finally, the model is weak on the cognitive front. The authors don’t discuss brain data or include neurolinguistic findings in their model. This could be because of space limitations or

maybe the authors wish to include them in future. At a sufficiently abstract level, fuzziness in representation is not linguistic, even if we are talking about linguistic inputs. Its representational confusion is more general. So, which cognitive systems during development and later maturation contribute to fuzziness? Since the authors strongly claim that L2 fuzziness is pervasive and does not go away, it must explain what causes it. This then becomes a question of general cognitive systems (such as attention, memory, awareness) that have been well documented to be key factors in language learning (Robinson, 1995; Schmidt, 1995). The cognition question also automatically brings multimodality i.e., language–vision–attention interaction (Mishra, 2015). This is because many findings in the last decade in bilingual language processing have come from such studies, which have used eye tracking where one sees dynamic interaction between attention, semantic representation, memory and visual perception (Shook & Marian, 2013). Therefore, without understanding the underlying general cognitive mechanisms we will not know in what type of learners L2 reaches the optimum level or when and why some patients lose L2 knowledge immediately. The emphasis on networks, connections between domains, phonology to orthography transfer is all fine: but longitudinal evolution of fuzziness can not be understood without reference to cognition. I hope the authors will include such points in later revisions.

The model brings some new into the discourse and offers a computational perspective, which is noteworthy. However, I did not find anywhere strong empirical predictions of the model. What would one expect to find in experiments, given that there

is rampant fuzziness in L2 representations? Nevertheless, I think it's a useful contribution at this point in time when there is collective effort to build models that are linguistically grounded, but also make sense psychologically and offer brain-based predictions.

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