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Computational Explorations in Asynchronous Language Development

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Abstract: Although many developmental processes that involve perceiving and producing a certain phenomenon are characterized by correct perception before correct production, this does not hold as general law. A prime example can be found in language development, as young children are able to distinguish between different forms in production, but not in perception. For example, children of 4;7 years of age are able to correct differentiate between himself and him when talking about a picture describing either an agent hitting himself, or hitting another agent. However, they are not able to select which picture correctly describes the penguin hits himself or the penguin hits him (Van Rij, Hendriks, Spenader, & Van Rijn, 2009). By constructing computational models of the involved processes and conducting experiments based on the models predictions we have shown that this asynchrony could be due to too limited processing resources.