



HAL
open science

Prediction versus coupling: testing two different accounts of inter-speaker coordination

Leonardo Lancia, Thierry Chaminade, Noël Nguyen, Laurent Prevot

► To cite this version:

Leonardo Lancia, Thierry Chaminade, Noël Nguyen, Laurent Prevot. Prediction versus coupling: testing two different accounts of inter-speaker coordination. Proceedings of the 7th Joint Action Meeting, Jul 2017, London, United Kingdom. pp.91. hal-01568369

HAL Id: hal-01568369

<https://hal.science/hal-01568369>

Submitted on 30 Jul 2017

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Prediction versus coupling: testing two different accounts of inter-speaker coordination

C

Leonardo Lancia¹, Thierry Chaminade², Noël Nguyen³, and Laurent Prévot³

¹Laboratoire de Phonétique et Phonologie (Paris, France), ²Institut de Neurosciences de la Timone (Marseille, France), ³Laboratoire Parole et Langage (Aix-en-Provence, France)

Accounts of inter-speaker coordination based on internal predictive models propose that spontaneous imitation of the partner's speech is due to the need to predict his/her behaviour in the immediate future. These accounts predict a tendency toward imitation each time speakers engage in a conversation. According to accounts based on the notion of dynamical coupling, coordination does not require prediction of the partner's behaviour and imitation is observed only if it directly favours the specific coordinative pattern produced by the interlocutors. To compare the two accounts, we asked 10 Italian speakers to repeat the utterance /topkop/ simultaneously with an artificial agent (AA) designed to repeat that same utterance while coordinating its behaviour with that of a human speaker (HS). In line with accounts based on prediction, we found that HS imitates the intonation of the AA regardless of whether AA is parameterized to cooperate with the HS (by producing its syllables simultaneously with those of the HS) or to compete with the HS (by producing its syllables in-between those of the HS). This occurs even if, as observed in the competitive interactions studied, imitative behaviour does not favour the production of the coordinative pattern targeted by the HS.