INTERACTIVE ALIGNMENT: IMPLICATIONS FOR THE TEACHING AND LEARNING OF SECOND LANGUAGE PRONUNCIATION

Pavel Trofimovich, Concordia University

Interactive alignment refers to a phenomenon characterized by interlocutors adopting and re-using each other's language patterns in the course of authentic interaction. According to the interactive alignment model, originally proposed by Pickering and Garrod (2004), this linguistic coordination in dialogue occurs at the level of the lexicon, grammar, and pronunciation and represents one way in which interlocutors achieve understanding in dialogue. The goal of this paper is to extend this model to second language (L2) pronunciation and to discuss its possible implications for L2 pronunciation teaching. Previous research suggests that repetition of language patterns at different linguistic levels is indeed a commonplace feature of communication among native speakers and can be observed and elicited in L2 learners. Therefore, pronunciation researchers and teachers might find interactive alignment as a useful framework to explain some of the complexities of L2 pronunciation development both from cognitive and sociocultural perspectives, as well as to develop or refine pedagogical activities for use in L2 pronunciation classrooms.

INTRODUCTION

The field of second language (L2) acquisition has seen increased interest in pronunciation research and its application to the teaching of pronunciation. Clearly, pronunciation can no longer be characterized as suffering from "the 'Cinderella syndrome'—kept behind doors and out of sight" (Celce-Murcia, Brinton & Goodwin, 1996, p. 323). A search in the *Linguistics and Language Behavior Abstracts* database for a period between 1996 and 2010, for example, yields 1,102 citations of studies investigating different aspects of L2 pronunciation, a nearly 40% increase from the number of studies (791) published on similar and related topics in the preceding 15-year period. At first glance, this sizeable body of knowledge does not compare favorably (at least in terms of quantity) with scientific output in other areas of L2 teaching and learning. For instance, the same database returns nearly three times the number of studies (2,787) published between 1996 and 2010 with a focus on L2 vocabulary. Nevertheless, the field of L2 pronunciation appears to be past its growing pains, with at least two regular international conferences (the one featured in this volume as well as the International Symposium on the Acquisition of Second Language Speech), numerous book-length volumes focusing on current theoretical thinking and pedagogical practices (e.g., Bohn & Munro, 2007; Hansen Edwards & Zampini, 2008; Reed & Levis, forthcoming; Levis & Munro, 2013), and thousands of active researchers and practitioners around the globe.

Another sign that the field L2 pronunciation has gained considerable ground comes from the number of theoretical proposals that researchers have advanced over the years to explain various aspects of L2 pronunciation. According to Thomas Kuhn, an influential American philosopher of science, this exemplifies what he termed normal science—a "puzzle-solving activity… a highly cumulative enterprise, eminently successful in its aim, [which is] the steady extension of the scope and precision of scientific knowledge" (1970, p. 52). Indeed, there is no shortage of interesting theoretical proposals designed to account for various aspects of L2 pronunciation

(e.g., Best & Tyler, 2007; Darcy et al., 2012; Eckman, 1991; Escudero & Boersma, 2004; Flege, 1995; 2007; Major, 2002; Trofimovich, Gatbonton & Segalowitz, 2007). However, what becomes apparent, especially to those involved in the practical task of language teaching, is that many of these proposals, while scientifically sound and engaging, often have little to contribute to L2 pedagogy. Fraser (2004) aptly captured this sentiment in her criticism of similar theoretical views:

> This is of course a valid scientific analysis, but is of limited direct use in the practical task of helping learners alter their pronunciation, since we are dealing here, not with phonological systems in collision, but with people learning a cognitive skill (p. 279).

While the utility of theories cannot (and should not) be judged solely based on their contributions to practice (see Teshakkori & Teddli, 2003), one goal of theory building in L2 pronunciation should be the establishment of "best practice", or the idea that research should ultimately inform (at least to a certain degree) L2 pronunciation teaching. This is because pronunciation is not simply a fascinating object of inquiry. Rather, pronunciation permeates all spheres of human life, lying at the core of oral language expression and embodying the way in which the speaker and the hearer work together to produce and understand each other's utterances. The goal of this paper is therefore to contribute to the overall objective of bridging the gap between research and practice by outlining a "teaching-friendly" view of L2 pronunciation learning and discussing its pedagogical applications. This view is an extension of the interactive alignment model to L2 pronunciation learning and teaching.

INTERACTIVE ALIGNMENT

Interactive alignment, as a theoretical view, originated in the field of cognitive psychology and was first articulated by Pickering and Garrod (2004). Underlying this view is the idea that dialogue is the most natural mode of human communication, and that the goal of interaction is for interlocutors to arrive at a common situation model. In other words, interlocutors need to establish "common ground", which includes (but is not limited to) information about people, time, actions, and their causes and consequences.

An interesting question here is how precisely interlocutors achieve such common ground in the course of an interaction. Pickering and Garrod proposed that at least one way of doing so is related to how interlocutors use language in the course of interaction. More specifically, interlocutors achieve understanding by aligning or coordinating their language at various levels: lexical, syntactic, and phonological. And this alignment becomes evident during conversation when interlocutors adopt and repeatedly use each other's language patterns. For example, native speakers engaged in communication tasks tend to re-use each other's lexical content and phrasal structure across turns as they work to construct a common understanding as part of interaction (e.g., Garrod & Anderson, 1987). This, Pickering and Garrod argued, illustrates convergence in language use which promotes successful communication.

Since then, researchers have shown that native-speaking interlocutors constantly demonstrate linguistic alignment or coordination in spoken interaction. Interlocutors re-use not only each other's words (Brennan & Clark, 1996; Garrod & Anderson, 1987) and grammatical structures (Branigan, Pickering & Cleland, 2000; Branigan, Pickering, Pearson & McLean, 2010) but also converge on common phonetic realizations of words (Clarke & Garrett, 2004; Pardo, 2006) and on common accent and speech rate (Giles, Coupland & Coupland, 1991). This re-use of language

patterns across interlocutors, indicative of alignment at various linguistic levels, has come to be seen as a powerful repetition-driven mechanism which supports successful interaction.

INTERACTIVE ALIGNMENT IN PRONUNCIATION

To date, the interactive alignment view has been successfully applied to describe different aspects of interaction between native speakers (Garrod & Pickering, 2009) and has been extended to bilingual code-switching (Kootstra, van Hell & Dijkstra, 2010). Can interactive alignment also be used to explain how learners acquire and use L2 pronunciation?

Alignment in native speaker interaction

There is now a considerable body of evidence that native-speaking interlocutors converge on common speech patterns in the course of interaction. This idea is far from being novel. In fact, what is referred to here as linguistic alignment at the level of pronunciation has been studied for decades within sociolinguistics as part of accommodation theory (Giles, 1973; Giles et al., 1991; Shepard, Giles & Le Poire, 2001). Briefly, accommodation theory is a framework for a study of linguistic and nonlinguistic behavior, in the context of social interaction, as a function of interlocutor beliefs, attitudes, and sociocultural conditions. Over 20 years ago, for example, Giles et al. (1991) listed several speech characteristics on which interlocutors appear to converge during laboratory-controlled and spontaneous interactions. These characteristics included utterance length, speech rate, information density, volume, pausing frequencies and lengths, as well as response latency. Accommodation theory explains such linguistic convergence as a sign of interlocutors' (often subconscious) desire for mutual social integration and identification and their need for mutual social approval.

More recently, working within the cognitive processing perspective, researchers have demonstrated tight links between interlocutors' speech output (production) and speech input (perception) in conversation. Pardo (2006), for instance, has shown that interlocutors converge on common phonetic realizations of words and that such convergence occurs rapidly (early on in the conversation) and persists for at least one week after the initial conversation. In another study, Kim, Horton and Bradlow (2011) have found that native-speaking interlocutors sharing the same dialect are more likely to converge on common phonetic and prosodic speech patterns than interlocutors with distinct dialects, suggesting that convergence is facilitated when interlocutors share a common linguistic background (see also Babel, 2010, 2012; Nielsen, 2011; Pardo, Jay & Krauss, 2010). Phonetic convergence can occur even for speech that is only seen. For example, listeners show similar degrees of phonetic convergence for words that they heard and for words that they lipread from a silent video recording of a speaker (Miller, Sanchez & Rosenblum, 2010). Taken together, these findings point to the existence of a rapid and likely automatic process of phonetic alignment in native-speaking interlocutors. This process appears to reflect a human perceptual system which adapts readily in response to recent experience (Samuel & Kralijc, 2009).

Alignment in L2 speakers

When it comes to L2 learners interacting with other learners or with native speakers, it is far less obvious whether and under what circumstances learners demonstrate interactive alignment in pronunciation. It appears, though, that phonetic convergence depends on several related variables, including the native language background of interlocutors and their familiarity with each other's way of speaking (Costa, Pickering & Sorace, 2008). For example, compared to two

native speaker interlocutors, a native speaker and an L2 learner in conversation show reduced phonetic convergence (Kim et al., 2010). Dialogue partners with a common language background are also those who demonstrate more successful interactions than linguistically mismatched interlocutors, as judged through the quality of information exchanged and task completion times (Van Engen et al., 2010). Thus, whether or not L2 learners align with their interlocutors seems to depend on learners' familiarity with their interlocutors' language background, such that a shared language background is associated with more phonetic alignment.

There is also some preliminary evidence that the extent to which L2 learners align with their interlocutors might be related to the degree of accent in learner speech. For instance, compared to learners with either strong or weak accents, only moderately-accented learners appear to show phonetic convergence with a native-speaking interlocutor (Kim et al., 2010). Assuming that accent ratings capture some aspects of L2 speaking proficiency, phonetic convergence may depend on learners' mastery of the L2 phonetic system and their perception of the interlocutor's communicative needs. In other words, learners whose accent is very non-nativelike may not have the linguistic means to align with their interlocutor, while learners with very nativelike accents may not perceive the need to align because communication is not compromised.

Further evidence for interactive alignment in pronunciation comes from two recent classroom-based studies with university-level L2 learners of English (Trofimovich, McDonough & Neumann, 2013; Foote, Trofimovich & McDonough, submitted). These researchers examined the effectiveness of communicative activities providing learners with L2 models (fully-formed, targetlike utterances) at two linguistic levels: grammar (passives) and pronunciation (word stress in multisyllabic words). According to the interactive alignment view (Pickering & Garrod, 2004), the degree of alignment—defined as learners' ability to re-use the provided model structures in completion of novel, self-generated utterances—should be enhanced when learners are repeatedly exposed to models with integrated patterns of grammar and pronunciation rather than simply models of grammar or of pronunciation. This is precisely what was observed. Only integrated models (word stress combined with the passive) were successful at eliciting alignment, or repetition of grammatical structure and stress (Trofimovich et al., 2013). In addition, communicative activities of this kind were effective at providing learners with opportunities for practice. Each learner generated, on average, 46 multisyllabic words as part of four brief communicative activities, and heard a similar number of words spoken by his or her interlocutor (Foote et al., submitted). Thus, alignment can be elicited through collaborative, communicative tasks which have potential for providing sustained practice of target pronunciation patterns.

IMPLICATIONS FOR PRONUNCIATION LEARNING AND TEACHING

If repetition of language patterns at different linguistic levels is indeed a commonplace feature of communication among native speakers and can be observed and elicited in L2 learners, then what can interactive alignment, as a theoretical view, offer to L2 pronunciation teaching? The answer to this question likely depends on a clear understanding of what underlies phonetic alignment in dialogue. In their original model, Pickering and Garrod (2004) proposed priming as the main mechanism of alignment in dialogue. Priming is essentially an implicit, unconscious repetition phenomenon. It refers to speakers re-using language patterns experienced in recent discourse (McDonough & Trofimovich, 2008). There is strong support for repetition and priming as implicit phenomena in the fields of social and cognitive psychology, both for native speakers and L2 learners. In social psychology, for instance, mimicry (i.e., verbal, facial, emotional, and

behavioural repetition) has been long regarded as an automatic and implicit phenomenon of social behavior (Chartrand & Dalton, 2008). And in the field of cognitive psychology, the unconscious repetition of language patterns experienced in recent discourse (shown as priming effects) is considered an automatic and implicit language learning mechanism (Ferreira & Bock, 2006; McDonough & Trofimovich, 2008). Thus, the involvement of implicit learning in linguistic alignment is established. What needs to be clarified, though, is how more explicit and overt ways of language learning and use relate to alignment and how such explicit ways of learning (e.g., category formation, inferencing) may be harnessed to promote linguistic alignment.

Although it may be premature to suggest definitive applications of the interactive alignment view to L2 pronunciation teaching, at least until we better understand the implicit and explicit mechanisms underlying repetition in dialogue, several possibilities nevertheless come to mind. First, L2 learners will likely benefit from awareness-raising activities that will sensitize them to the fact that successful interaction often involves a lot of repetition. Learners might also benefit from listening activities featuring authentic spoken interaction, in order to become aware of pronunciation patterns (both segmental and especially suprasegmental) often repeated between interlocutors. Learners may then become more sensitive to how repetition can be used to construct successful interactions (Bremer & Simonot, 1996; Watterson, 2008). Second, if we adopt the alignment view, then pronunciation activities specifically targeting linguistic alignment hold some promise in pronunciation teaching. This includes collaborative classroom-based activities designed to elicit alignment, activities featuring corrective feedback and especially recasts as repeated models of targetlike language patterns, as well as activities built around high-frequency, functional, formulaic language (e.g., Foote et al., submitted; Gatbonton & Segalowitz, 2005; Saito & Lyster, 2012; Trofimovich & Gatbonton, 2006; Trofimovich et al., 2013).

Third, if we assume that alignment is enhanced when learners encounter patterns of language that match in many ways—for example, in terms of grammar and pronunciation—we can also hypothesize that alignment should also be enhanced for patterns of language experienced simultaneously across several modalities, sensory channels, and presentation media. And there is some very interesting evidence emerging about the effectiveness of multimodal, multisensory techniques applied to the teaching of L2 pronunciation (e.g., Hardison, 2010; Levis & Pickering, 2004; Sueyoshi & Hardison, 2005). Last but not least, the alignment view implies that different kinds of imitation activities—such as silent mouthing (Davis & Rinvolucri, 1990), mirroring, echoing, shadowing (Celce-Murcia et al., 2010), as well as dramatic imitation techniques that involve imitating not only speech, but also gestures, facial expressions, and affect (Hardison & Sonchaeng, 2005)—may be particularly useful in helping L2 learners align to a model.

CONCLUSION

In his introduction to a 2005 special issue of *TESOL Quarterly* devoted to pronunciation, Levis wrote about changing contexts and shifting paradigms in L2 pronunciation research. He emphasized the crucial role of intelligibility, rather than nativeness, as a goal of pronunciation teaching, highlighted both the speaker and the hearer as being essential to communication, and underscored the important role of identity and by extension, of wider sociocultural context, in L2 interaction. Interactive alignment—as a theoretical framework applied to the teaching and learning of L2 pronunciation—has the potential to contribute to the changing paradigms and shifting contexts defined this way. First, the alignment view firmly places intelligibility as central to communicative success (Derwing & Munro, 2009; Levis, 2005). If interlocutors' goal

is to achieve understanding, then intelligibility problems can be viewed as failure to align at the level of phonetic/prosodic perception and production. Interactive alignment thus becomes one means for interlocutors to resolve and avoid communication breakdowns, particularly when intelligibility compromises smooth and efficient communication. Second, the alignment view firmly establishes pronunciation within communicative approaches to language learning and teaching (Celce-Murcia et al., 2010), with a dual focus on both the speaker and the hearer as active participants in communication. Finally, the alignment view does not exclude social and contextual influences on learning. For example, in the course of interaction, interlocutors might align not only in terms of language but also in terms of gestures, facial expressions, eye gaze, and body movement (Atkinson, Churchill, Nishino & Okada, 2007; Churchill, Nishino, Okada & Atkinson, 2010). In fact, alignment can be viewed even more broadly—in the context of an individual's interaction with his or her environment (Atkinson, 2011). It is possible to imagine, then, that interlocutors can also align (or fail to do so) at the level of social factors, such as attitudes, beliefs and identity, and that these could influence the nature of interaction and the quality of language produced (Lindemann, 2002). From this vantage point, the interactive alignment view emerges as a useful framework for researchers to explain some of the complexities of L2 pronunciation development both from cognitive and sociocultural perspectives, and for teachers to develop or refine activities for use in L2 pronunciation classrooms.

ACKNOWLEDGEMENTS

ABOUT THE AUTHOR

Pavel Trofimovich (PhD 2003, University of Illinois at Urbana-Champaign) is an Associate Professor of Applied Linguistics in the Department of Education at Concordia University in Montreal. He conducts research on the acquisition of second language pronunciation, speech perception/production, phonological processing, and the role of cognitive and social variables in second language learning. He has co-authored two books with Kim McDonough on the use of cognitive psycholinguistic research methods in second language research—*Insights from psycholinguistics: Applying priming research to L2 learning and teaching* (2011, John Benjamins) and *Using priming methods in second language research* (2008, Routledge). He has received funding from SSHRC, FQRSC, and the British Council (UK) and has published numerous peer-reviewed articles and book chapters. He currently serves as the director of the graduate program in Applied Linguistics at Concordia, an associate editor of *Language Learning*, and an editorial board member of *Language Learning and Technology.*

REFERENCES

Atkinson, D. (2011). A sociocognitive approach to second language acquisition: How mind, body, and world work together in learning additional languages. In D. Atkinson (Ed.), *Alternative approaches to second language acquisition* (pp. 143-166). New York: Routledge.

Atkinson, D., Churchill, E., Nishino, T., & Okada, H. (2007). Alignment and interaction in a sociocognitive approach to second language acquisition. *Modern Language Journal*, *91*, 169-188.

Babel, M. (2010). Dialect convergence and divergence in New Zealand English. *Language in Society*, *39*, 437- 456.

Babel, M. (2012). Evidence for phonetic and social selectivity in spontaneous phonetic imitation. *Journal of Phonetics*, *40*, 177-189.

Best, C. T., & Tyler, M. D. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. In O.-S. Bohn & M. J. Munro (Eds.), *Language experience in second language speech learning* (pp. 13-34). Amsterdam: John Benjamins.

Bohn, O.-S., & Munro, M. J. (Eds.) (2007). *Language experience in second language speech learning: In honor of James Emil Flege.* Amsterdam: John Benjamins.

Branigan, H. P., Pickering, M. J., & Cleland, A. A. (2000). Syntactic co-ordination in dialogue. *Cognition*, *75*, B13-25.

Branigan, H. P., Pickering, M. J., Pearson, J., & McLean, J. F. (2010). Linguistic alignment between people and computers. *Journal of Pragmatics*, *42*, 2355-2368.

Bremer, K., & Simonot, M. (1996). Joint negotiation of understanding: Procedures for managing problems of understanding. In K. Bremer, C. Roberts, M. Vasseur, M. Simonot, & P. Broeder (Eds.), *Achieving understanding: Discourse in intercultural encounters* (pp. 181-206). London: Longman.

Brennan, S. E., & Clark, H. H. (1996). Conceptual pacts and lexical choice in conversation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *22*, 1482-1493.

Celce-Murcia, M., Brinton, D. M., & Goodwin, J.M. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages.* New York: Cambridge University Press.

Celce-Murcia, M., Brinton, D. M., & Goodwin, J.M. (2010). *Teaching pronunciation: A course book and reference guide.* New York: Cambridge University Press.

Chartrand , T. L., & Dalton, A. (2008). Mimicry: Its ubiquity, importance, and functionality. In E. Morsella, J. Bargh, & P. Gollwitzer (Eds.), *Oxford handbook of human action* (pp. 458-483). Oxford: Oxford University Press.

Churchill, E., Nishino, T., Okada, H., & Atkinson, D. (2010). Simbiotic gesture and the sociocognitive visibility of grammar. *Modern Language Journal*, *94*, 234-253.

Clarke, C. M., & Garrett, M. F. (2004). Rapid adaptation to foreign-accented English. *Journal of the Acoustical Society of America*, 116, 3647-3658.

Costa, A., Pickering, M. J., & Sorace, A. (2008). Alignment in second language dialogue. *Language and Cognitive Processes*, *23*, 528-556.

Darcy, I., Dekydtspotter, L., Sprouse, R., Glover, J., Kaden, C., McGuire, M., & Scott, J. (2012). Direct mapping of acoustics to phonology: On the lexical encoding of front round vowels in L1 English-L2 French acquisition. *Second Language Research*, *28*, 5-40.

Davis, P., & Rinvolucri, M. (1990). *The confidence book: Building trust in the language classroom*. Essex: Longman.

Derwing, T. M., & Munro, M. J. (2009). Putting accent in its place: Rethinking obstacles to communication. *Language Teaching*, *42*, 476-490.

Eckman, F. R. (1991). The structural conformity hypothesis and the acquisition of consonant clusters in the interlanguage of ESL learners. *Studies in Second Language Acquisition*, *13*, 23-41.

Escudero, P., & Boersma, P. (2004). Bridging the gap between L2 speech perception research and phonological theory. *Studies in Second Language Acquisition*, *26*, 551-585.

Ferreira, V. S., & Bock, K. (2006). The functions of structural priming. *Language and Cognitive Processes*, *21*, 1011-1029.

Flege, J. E. (1995). Second-language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 229-273). Timonium, MD: York Press.

Flege, J. E. (2007). Language contact in bilingualism: Phonetic system interactions. In J. Cole & J. Hualde (Eds.), *Laboratory Phonology 9* (pp. 353-380). Berlin: Mouton de Gruyter.

Foote, J. A., Trofimovich, P., & McDonough, K. (submitted). Interactive alignment during collaborative tasks and the production of AWL word stress patterns.

Fraser, H. (2004). Constraining abstractness: Phonological representation in the light of color terms. *Cognitive Linguistics*, *15*, 239-288.

Garrod, S., & Anderson, A. (1987). Saying what you mean in dialogue: A study in conceptual and semantic co-ordination. *Cognition*, *27*, 181-218.

Garrod, S., & Pickering, M. J. (2009). Joint action, interactive alignment, and dialog. *Topics in Cognitive Science*, *1*, 292-304.

Gatbonton, E., & Segalowitz, N. (2005). Rethinking communicative language teaching: A focus on access to fluency. *Canadian Modern Language Review*, *61*, 325-353.

Giles, H., Coupland, N., & Coupland, J. (1991). Accommodation theory: Communication, context, and consequence. In H. Giles, J. Coupland, & N. Coupland (Eds.), *Contexts of accommodation: Developments in applied sociolinguistics* (pp. 1-68). Cambridge: Cambridge University Press.

Giles. H. (1973). Accent mobility: A model and some data. *Anthropological Linguistics*, *15,* 87-105.

Hansen Edwards, J. G., & Zampini, M. L. (Eds.) (2008). *Phonology and second language acquisition.* Amsterdam: John Benjamins.

Hardison, D. M. (2010). Visual and auditory input in second-language speech processing [Research Timeline]. *Language Teaching*, *43*, 84-95.

Hardison, D. M., & Sonchaeng, C. (2005). Theatre voice training and technology in teaching oral skills : Integrating the components of a speech event. *System*, *33*, 593-608.

Kim, M., Horton, W. S., & Bradlow, A. R. (2010). Phonetic convergence in spontaneous conversations as a function of interlocutor language distance. *Laboratory Phonology*, *2*, 125-156.

Kootstra, G. J., van Hell, J. G., & Dijkstra, T. (2010). Syntactic alignment and shared word order in code-switched sentence production: Evidence from bilingual monologue and dialogue. *Journal of Memory and Language, 63,* 210-231.

Kuhn, T. S. (1970). *The structure of scientific revolutions*. Cihcago: The University of Chicago Press.

Levis, J. M. (2005). Changing contexts and shifting paradigms in pronunciation teaching. *TESOL Quarterly*, *39*, 369-377.

Levis, J., & Munro, M. (2013). Phonetics and phonology: Overview. In C. A. Chapelle (Ed.), *The encyclopedia of applied linguistics* (pp. 1-5). Oxford: Wiley-Blackwell.

Levis, J., & Pickering, L. (2004). Teaching intonation in discourse using speech visualization technology. *System, 32,* 505-524.

Lindemann, S. (2002). Listening with an attitude: A model of native-speaker comprehension of non-native speakers in the United States. *Language in Society, 31*, 419-441.

Major, R. C. (2002). The phonology of the L2 user. In. V. Cook (Ed.), *Portraits of the L2 user* (pp. 67-92). Clevedon: Multilingual Matters.

McDonough, K., & Trofimovich, P. (2008). *Using priming methods in second language research*. New York: Routledge.

Miller, R. M., Sanchez, K., & Rosenblum, L. D. (2010). Alignment to visual speech information. *Attention, Perception, and Psychophysics*, *72*, 1614-1625.

Nielsen, K. (2011). Specificity and abstractness of VOT imitation. *Journal of Phonetics*, *39*, 132-142.

Pardo, J. S. (2006). On phonetic convergence during conversational interaction. *Journal of the Acoustical Society of America*, *119*, 2382-2393.

Pardo, J. S., Jay, I. C., & Krauss, R. M. (2010). Conversational role influences speech imitation. *Attention, Perception, and Psychophysics, 72*, 2254-2264.

Pickering, M. J., & Garrod, S. (2004). Toward a mechanistic psychology of dialogue. *Behavioral and Brain Sciences*, *27*, 169-226.

Reed, M., & Levis, J. (Eds.). (forthcoming). *The handbook of English pronunciation*. London: Wiley-Blackwell.

Saito, K., & Lyster, R. (2012). Investigating the pedagogical potential of recasts for L2 vowel acquisition. *TESOL Quarterly*, *46*, 387-398.

Samuel, A. G., & Kraljic, T. (2009). Perceptual learning for speech. *Attention, Perception, Psychophysics*, *71*, 1207-1218.

Shepard, C. A., Giles, H., & Le Poire, B. A. (2001). Communication accommodation theory. In W. P. Robinson & H. Giles (Eds.), *The new handbook of language and social psychology* (pp. 33-56). New York: Wiley.

Sueyoshi, A., & Hardison, D. M. (2005). The role of gestures and facial cues in second language listening comprehension. *Language Learning*, *55*, 661-699.

Teshakkori, A., & Teddli, C. (Eds.) (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.

Trofimovich, P., & Gatbonton, E. (2006). Repetition and focus on form in L2 Spanish word processing: Implications for pronunciation instruction. *Modern Language Journal*, *90*, 519-535.

Trofimovich, P., Gatbonton, E., & Segalowitz, N. (2007). A dynamic look at L2 phonological learning: Seeking psycholinguistic explanations for implicational phenomena. *Studies in Second Language Acquisition*, *29*, 407-448.

Trofimovich, P., McDonough, K., & Neumann, H. (2013). Using collaborative tasks to elicit auditory and structural priming. *TESOL Quarterly*, *47*, 177-186.

Van Engen, K. J., Baese-Berk, M., Baker, R. E., Kim, M., & Bradlow, A. R. (2010). The Wildcat Corpus of native‐ and foreign‐accented English: Communicative efficiency across conversational dyads with varying language alignment profiles. *Language & Speech*, *53*, 510-540.

Watterson, M. (2008). Repair of non-understanding in English in international communication. *World Englishes*, *27*, 378-406.