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Book Review

The Routledge Handbook of Second Language Acquisition and Speaking, 1st Edition. T. M. Derwing, M. J. Munro & R. I. Thomson (2022). Routledge.

Kate Hammer

University College London, United Kingdom

This handbook, edited by Derwing, Munro, and Thomson, is part of the Routledge Handbooks in Second Language Acquisition (SLA) series, and is devoted to speaking in a second language (L2). The series offers a comprehensive coverage of selected sub-disciplines in Applied Linguistics (AL) by bringing together fundamental theories, core issues, and new directions. The present volume comprises 31 chapters and is divided into five parts, namely (1) Theoretical Foundations and Processes Underlying Speaking, (2) Research Issues, (3) Core Topics, (4) Teaching Speaking, and (5) Emerging Issues. The present review collates information from throughout the volume and is divided into eight sections, namely: (1) Theoretical foundations underlying speaking, (2) Research on SLA and speaking, (3) Core topics in SLA and speaking, (4) Teaching speaking, (5) Emerging issues in SLA and speaking, (6) Recommendations for practice, (7) Future directions, and (8) Conclusions.

1. Theoretical foundations underlying speaking

The Speaking Model by Levelt (1989) and the psycholinguistic processes underlying oral production in L2 are given considerable attention at the start of the volume (Chapters 1 and 2). Levelt's model, comprising the conceptualiser,

Corresponding author

Kate Hammer
Email: k.hammer@ucl.ac.uk

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formulator, and articulator, is said to identify the autonomous speech processing components and map out the intricate mechanisms underlying speech production. This includes preverbal macro- and micro-planning, the transfer of preverbal output from conceptualiser to formulator and articulator, the matching of lexical concepts with lexical items, and the generation of motor-plans to produce syllables and assemble syllables into running speech, all monitored by internal and external production-feedback loops (Chapter 1). The production system is described as beginning with the intention to communicate, followed by the preverbal conceptualisation of the message, the selection of lexical concepts, and the linearisation of events. Preverbal plans proceed further to stages of lexical, grammatical, and phonological encoding, creating a phonological score (syllabified and prosodified words) in internal speech. The phonological score proceeds further to stages of phonetic encoding, creating an articulatory score (phonetic plan) which culminates in the articulation of the message in overt speech. Articulation can start before the entire message is conceptualised, which flags up the indispensability of cognitive resources (working memory and attention) for storing and manipulating information at all stages of the speech production process (Chapter 2). Levelt's model is also said to explain tip-of-the-tongue phenomena as occurring due to asynchronous activation of constituent building blocks of lexical items, lemmas and lexemes, resulting in speakers knowing some characteristics of the desired words, such as number of syllables, but being unable to deliver them during speech acts. It all demonstrates that speech is based lexically, as opposed to syntactically, and that syllables are building blocks of speech (Chapter 1). It is noted, however, that while Levelt's model is recognised as the most elaborate speech production model, it does not account for speech production in bilinguals and the phenomena of code-switching and cross-linguistic influence. Therefore, bilingual speech production models (de Bot, 1992; Poulisse & Bongaerts, 1994; Kormos, 2006) are further presented, key differences between them outlined, and relevant concepts, including language dominance, the inhibition of the non-target language, the spreading activation of lexical items, and language switching costs, addressed (Chapter 1). The development of L2 speaking is further elaborated on from the perspective of Complex Dynamic Systems Theory (CDST; Chapter 3). L2 speech is portrayed as highly complex, occurring organically at high velocity, relying on multiple language sub-systems (such as phonology and vocabulary) working in synergies with larger structures of cognition. Development is perceived as a dynamic, non-linear process in which seemingly small differences at one point in time may lead to large differences over time. With roots in mathematics, as in the study of fractals and expanding symmetries, the 'Dynamic Turn' in AL redirected the focus of analysis to the process of development, as opposed to its product, investigating

patterns of change, variability, destabilisation, and stabilisation over time (cf. de Bot, Lowie, & Verspoor, 2007; Chapter 3). Language aptitude and individual differences (ID) in L2 speech learning form another key theoretical paradigm underlying speaking (Chapter 5). Modern Language Aptitude Test (MLAT) aptitude components are explained, including (1) *phonemic coding ability*: sound retention, recognition, and retrieval; (2) *grammatical sensitivity*: the identification of grammatical relationships; (3) *inductive language learning skills*: syntactic and morphological pattern recognition; and (4) *associative memory*: establishing memory links between L1 and L2 vocabulary items. Other aptitude tests are referred to also, including LLAMA-E: focused on phonetic coding ability, LLAMA-D: focused on sound sequency recognition, and the High-Level Language Aptitude Battery (Hi-LAB): focused on predicting very high levels of proficiency. Sources of ID are described thoroughly, including (1) *experiential*: input quantity and quality, L2 exposure; (2) *sociopsychological*: motivation, personality, attitude to phonetic accuracy; (3) *cognitive*: working memory, especially phonological short-term memory; (4) *cognitive*: attention, especially the ability to prioritise key elements in the auditory input, and attention-shifting skills; (5) *cognitive*: inhibitory control, especially the ability to control linguistic interference e.g. inhibit L1 while speaking L2; and (6) *auditory processing*: especially domain-general e.g. precision in processing of sound, pitch discrimination acuity, and auditory-motor integration. Individual differences are referred to as predictors of ultimate attainment in L2 speech (Chapter 5). Language-anxiety (LA) levels are also said to vary between individuals. In the context of speaking L2, LA is portrayed as a bi-dimensional construct comprising worry and emotionality, which can fluctuate over time, and which affects all stages of information processing (speech perception, production, and understanding; Chapter 6). Due to links between L2 pronunciation and identity, speaking is said to generate higher anxiety levels compared to writing. Debilitating effects of anxiety on oral performance are described, including (1) the incorrect perception of speech (sounds, prosody, words), which impedes intake; (2) the retrieval of wrong mental categories in long-term memory due to the incorrect perception of speech (the central processing stage is affected, leading to the possible misinterpretation of the message); and (3) the compromised quality and fluency of speech production (retrieval of lexical items, grammatical structures, pronunciation). The concept of Pronunciation Anxiety (PA) is introduced and defined as encompassing (1) a fear of negative evaluation by others; (2) unfavourable self-evaluation against others; (3) unfavourable self-image as L2 speaker; and (4) impactful attitudes towards L2 pronunciation. PA was shown to have strong links with motivation and willingness to communicate in L2 (WTC). Measurements of anxiety include the Foreign Language Classroom Anxiety Scale (FLCAS; Horowitz et

al., 1986; Chapter 6). From the point of view of sociocultural perspectives, L2 speech is viewed as means of reaching communicative understanding between interlocutors, conveying information, collaborating, socialising, marking identities, and negotiating power relations by means of both linguistic features (lexical choice, prosody) and interactional features (turn-taking, questioning) of speech (Chapter 4). Traditional research contexts include heritage language schools, study-abroad settings, university programmes and, most recently, virtual communications environments (Zoom, Microsoft Teams). Covid-19 and migration to virtual communications environments opened new lines of enquiry as standard discourse features such as turn-taking and back-channelling became controlled in online spaces (mute button), while new layers of communication became possible (heart, thumbs up). Similarly, mask-wearing in public spaces compromised speech quality and challenged speech comprehensibility, while simultaneously obscuring non-verbal forms of expression (smiling; Chapter 4).

2. Research issues in SLA and speaking

Different speaking research methodologies and dichotomies are presented in this volume, including quantitative vs. qualitative research, intervention vs. observation, and cross-sectional vs. longitudinal approaches (Chapter 7). Selection of data collection and analysis techniques is said to be guided by research questions and the type of data that is required, such as patterns of acquisition across multiple learners, or developmental trajectories of individual learners. Some studies might require learners to perform specific speech tasks over time, others might employ listeners to provide scalar ratings of speech samples, or studies might require the creation of introspective diaries reporting on speech development of a single subject. Different data-elicitation techniques are presented according to levels of control, from high (reading aloud, repetition, picture naming), to medium (film descriptions, role plays, interviews), to low (self-recordings), and their strengths and weaknesses are discussed. Data-analysis approaches are also discussed, including transcription, expert coding, and acoustic measures. Praat, an open-source speech analysis software, is mentioned in the context of more detailed acoustic analyses. The authors also stress the importance of accuracy in speech analyses, including careful administration of rating protocols, ensuring the correctness of scales and labels, checking raters' eligibility and reliability, and ensuring controlled listening conditions (Chapter 7). Other contemporary research focuses on teaching methodologies aimed at improving prosody, such as high-variability phonetic training (HVPT) which exposes learners to L2 speech produced by multiple speakers while offering corrective feedback (Chapter 14). Moreover,

other lines of research explore cognitive and affective aspects of L2 fluency development, including short-term memory and personality. Methodologies aimed at fluency development are referred to, including Automatization in Communicative Contexts of Essential Speech Segments (Chapter 13). Spoken corpora are also covered as part of the volume. Spoken corpora provide researchers with data-sets composed of speech samples, some of which contain trajectories of speech development of L2 learners over time, and can thus be used in SLA research (Chapter 8). A number of spoken corpora are described, including (1) LANGSNAP: speech elicited from university students who spent a year abroad; (2) LINDSEI: speech elicited by interviewing university-level learners of L2 English; (3) CCOT: speech elicited from Intensive English programme university students during their achievement tests at Northern Arizona University; and (4) LeaP: a phonological corpus created as part of a project investigating potential links between the acquisition of prosodic features and proficiency, instruction, motivation, and musicality. Phonological corpora are said to be particularly attractive in researching speech development over time, including prosody and fluency. Digital methods used for creating corpora are also elaborated on, with a comprehensive section on Praat and its functionality in terms of the segmentation and annotation of speech (TextGrid files; Chapter 8). Another core research issue in SLA and speaking is that of testing speaking. Assessment of L2 speech is reported to have progressed from an individualistic approach to an interactional one, moving language testing methodologies from sound/word identification tasks towards performance assessment (conversations, interviews; Chapter 9). Research on speaking assessment focuses on the extent to which independent aspects of the speaking performance (task type, test-taker ID, interlocutor) impact performance quality, the understanding of which is crucial for test standardisation and validity. Models of speaking performance are discussed, and various computer-mediated tests are referred to, including APTIS, Duolingo, PTE Academic, and Versant English. The communicative language ability model is said to be the most well-known model of language assessment, upon which numerous communicative testing frameworks are based, including the Common European Framework of Reference for Languages (CEFR; Chapter 9).

3. Core topics in SLA and speaking

A core topic in SLA and speaking is that of *speech intelligibility*, defined as "the extent to which a speaker's message is actually understood by a listener" (Munro & Derwing, 1995a, p.76; Chapter 11). Intelligibility encompasses understanding at word, message, and interpretation levels, and differs from *accentedness*, which denotes the extent of foreign accent perceived in L2

speech. Both segmental and suprasegmental features are said to impact intelligibility. Mispronounced vowels (especially in connected speech), mispronounced consonants (especially in stressed syllables) and unexpected stress patterns may result in listeners perceiving different words to those intended (*bed-bad, passion-patience, duck-dog, pen-Ben; UPset-absent, norMALly-no money, seCONdary-country, wriTTEN-retain*). Cross-cultural differences in intonation are also said to lead to misunderstandings and potential misinterpretations of attempted politeness for rudeness, and vice-versa. Measurements of intelligibility are said to include word identifications, transcriptions of full-word-count, transcriptions of content-word-count, and repetitions. It is concluded that intelligibility should be the key principle of language teaching, and that it can be taught both reactively (through ad-hoc correction) and proactively (through planned instruction of known problematic features; Chapter 11). A similarly leading topic is that of *speech comprehensibility*, defined as the extent to which listeners perceive L2 speech to be easy or difficult to understand (Munro & Derwing, 1995a; Chapter 12). Measured on a continuum, comprehensibility is said to comprise pronunciation (individual segments, prosody) and lexicogrammar (vocabulary richness, grammatical complexity). Over a half of the variance in comprehensibility is said to be explained by fluency (speech rate, pausing) and prosody (intonation, stress, rhythm). Study-abroad and L2 exposure might not automatically lead to comprehensibility gains, but focused teaching can significantly improve comprehensibility in L2 learners, even those already entrenched in their speech patterns, leading to the conclusion that comprehensibility can be taught and learnt, and that gains in this area increase learners' motivation and boost positive attitudes towards their learning (Chapter 12). The critical topic of the role of *prosody* in SLA is also addressed in the volume (Chapter 14). Prosody is said to considerably impact accentedness, comprehensibility, and intelligibility. It denotes speech features including pitch (height of a tone), intonation (movement of pitch; also called tune, contour, or melody), rhythm (regular occurrence of units), stress (perceived prominence of syllables), loudness (volume), and tone (timbre). L2 speech is more comprehensible when primary stress is placed correctly as it can affect lexical meaning (*CONtract* vs. *conTRACT*). Primary stress can also affect lexical retrieval where the pool of activated words share the initial element but vary in primary stress (*OCTopus*, *OcTOBer*, *oCCUR*). Durational patterns are said to influence the perception of speech. Appropriate rhythm and alternation between strong and weak syllables are crucial in identifying the beginning of words, especially in speakers of syllable-timed languages who learn stress-timed languages like English (Chapter 14). Another core topic is that of *fluency*, which is said to encompass three aspects: (1) cognitive, (2) utterance, and (3) perceived fluency (Chapter 13). Speech features

which serve as fluency predictors are said to include speech rate, articulation rate, pruned syllables (per second), mean length of run, phonation time ratio, mean length of silent pauses, number of silent pauses (per minute), number of filled pauses (per minute), and number of repetitions. Activities designed to improve fluency are said to revolve around the principles of (1) the multiple repetition of speech segments, (2) the presence of a genuine information gap, and (3) the production of formulaic passages which can be used in real-world communication. The 4/3/2 technique, which requires learners to speak on the same topic three times with different interlocutors for the duration of 4, 3, and 2 minutes, respectively, is also mentioned in this context, and said to lead to fluency gains and automatization of linguistic knowledge (Chapter 13). A related topic is that of grammar for speaking. Grammatical behaviour of words is referred to as *lexicogrammar*. Grammatical rules applied consistently in writing are said to be violated occasionally in speaking due to the cognitive demands of speech (Chapter 15). It is noted that a vast proportion of online written communications tend to reflect that phenomenon, and that online chats often resemble spoken language. Grammatical accuracy is a key criterion in high-stakes English tests such as the International English Language Testing System (IELTS) and Test of English as a Foreign Language (TOEFL). Some research into grammar for speaking examines what does or does not constitute an error/slip in L2 speech production (especially as compared to L1 speech production). Research methodologies in the area of grammar for speaking are said to include perception and judgement studies, as well as descriptive corpus analyses, using, for example, the British National Corpus (BNC) or Corpus of Contemporary American English (COCA; Chapter 15). Finally, pragmatics in speaking is elaborated on, for speech delivery is said to be a vital component of impression management for L2 speakers, both in their professional and personal lives (Chapter 17). Pragmatic violations may result in L2 speech being perceived as monotonic or frenetic, and L2 speakers as artificial or abrupt. Research in this area investigates how the manner of speaking influences listeners' perceptions of what is being communicated (illocutionary force vs. perlocutionary effect). Descriptions of a number of relevant studies are presented, including ones investigating speech acts and speech rate, intonation patterns in agreements and disagreements, and perceptions of apologies (sincere vs. ostensible). Other frequently researched topics are said to include turn-taking, topic-initiation, and back-channelling, while more systematic research is invited into speech prosody, rate, and chunking. The importance of pragmatics is highlighted, and an integration of pragmatics, discourse, and speaking into L2 teaching pedagogy is recommended. Conversations and role-plays, in particular, are seen as useful pedagogical tools in this area (Chapter 17).

4. Teaching speaking

Pronunciation teaching and learning is a core topic in SLA, and an overview of pronunciation teaching approaches is provided, beginning with the Audiolingual Method (1950s-1960s), followed by Suggestopedia, Total Physical Response, The Silent Way, Community Counselling Learning (1970s), through to the more naturalistic Communicative Approach (1980s; Chapter 10). Pronunciation research is characterised as comprising naturalistic and interventionist approaches, with the former focusing on organic speech development over time (measured at different points), and the latter focusing on the effects of instruction on pronunciation gains (local or global, concerning either individual segments or suprasegmental features, respectively). Considerable individual variation in levels of L2 attainment is said to exist among learners, regardless of their L1 profiles. Sources of pronunciation difficulties are elaborated on and said to include perceptual abilities, exposure to particular speaking models, and fossilisation early in the learning process. The goals of pronunciation instruction (PI) are said to lie in improving intelligibility, as opposed to achieving nativelikeness. It is noted, however, that language assessment tends to view pronunciation as incremental (CEFR), but that this is shifting towards intelligibility in some areas (TOEFL; Chapter 10). Another key component in teaching speaking is teaching vocabulary. An overview of methods is provided, including the Audiolingual Method (creating good language habits via drills), Comprehensible Input Hypothesis (n+1), and Task-Based Language Teaching (TBLT) which uses problem-solving tasks to prompt learners to produce language required in real-life situations (Chapter 19). The Output Hypothesis is also referred to (Swain, 1985). Vocabulary teaching effectiveness across different methodologies is considered, as is the use of other techniques such as creating mnemonics (L2-word meaning linked to L1-word sound via image). Research into vocabulary teaching is discussed, namely, how many thousands of words and word-families are required to be taught and learnt in L2 (corpus-based research; BNC/COCA). A distinction is made between productive and receptive vocabulary size. Lexical deficits impede communication, while lexical richness is said to be linked to better comprehensibility, fewer pauses, and a faster tempo of speech. Of importance are high-frequency words and multi-word chunks, including conversational chunks, collocations, and idioms (and their pragmatic uses). Dividing words into sound units and reciting rhymes are among other techniques mentioned in the context of teaching spoken vocabulary (Chapter 19). Formulaic sequences (FS), referred to as building blocks of language, are a central feature in Communicative Language Teaching (CLT) and are of significant interest in teaching speaking (Chapter 20). FS comprise phrasal verbs (*back up*), lexical

bundles (*as far as I know*), collocations (*take a shower*), idioms (*raining cats and dogs*), proverbs (*actions speak louder than words*) and other prefabricated patterns. Using FS is said to grant a processing advantage in speech production (it saves attentional resources) and to help attain communicative competence (cf. Canale and Swain, 1980). FS are included in CEFR proficiency descriptors, and the competent use of lexical chunks has a positive effect on perceived speaking proficiency. FS are said to support L2 fluency, as they are linked to fewer pauses and hesitations during speaking (pauses do not tend to occur in the middle of FS). Current research into FS is referred to and said to typically involve n-gram analyses (Chapter 20). Conversational interaction is also described in the volume as having a high pedagogical potential, for it is central in providing learners with opportunities to improve their L2 as part of the process of negotiation for meaning (Chapter 16). The theoretical foundations of the concept are referred to, including the Interaction Hypothesis (Long, 1981), Comprehensible Input Hypothesis (Krashen, 1982), and Noticing Hypothesis (Schmidt, 1990). Interaction studies revolve around key concepts including input, output, negotiation for meaning, corrective feedback (CF), modified output, uptake, and noticing, all of which are thoroughly described. The negotiation for meaning process draws learners' attention to specific features of the linguistic code (input) which presents a window of opportunity for interlanguage to be refined during interactions. Negotiation for meaning typically takes form of clarification requests (*What do you mean?*), confirmation checks (*Do you mean XYZ?*), or comprehension checks (*Do you understand?*). The role of CF, working memory (WM), and language aptitude are thoroughly addressed in the context of interaction studies. Learners with high WM are said to notice more CF than low WM-learners, which may impact their achievement. Similarly, learners with strong language aptitude profiles are likely to benefit from both naturalistic and instructed exposure to L2 to a higher degree, compared to others (Chapter 16). Another way to promote the teaching of speaking described in the volume is oral language development in immersion and dual language classrooms (ImDL; Chapter 23). A description of content-and-language-integrated-learning (CLIL) is provided, including its emergence, features, development, and specifics of one-way and two-way immersion programmes. The importance and promotion of *oracy* in the context of ImDL is addressed, with oracy being characterised as entailing linguistic accuracy, syntactic complexity, and a rich academic vocabulary. Development of oracy is said to occur through scaffolded oral interactions lead by teachers who ask effective questions and provide strategic feedback, which help learners engage with both content and language at higher levels of cognition (Chapter 23). Further, L2 speaking strategies, that is, a branch of communication strategies aimed at improving communication effectiveness,

are also reported as key aspects of speaking, and the teaching of speaking (Chapter 18). Two major types of speaking strategies are presented, namely (1) *problem-oriented:* code-switching, clarification requests, paraphrasing, circumlocution, using all-purpose words, and (2) *interaction-oriented:* letting it pass, using L1 to build solidarity, communicating warmth through voice quality, using terms of endearment. It is reported that raters who assess L2 speech during language testing tend to assign higher speaking scores to those L2 speakers who use more speaking strategies, which highlights their importance in L2 pedagogy (Chapter 18). Finally, curriculum issues in teaching L2 speaking are also of significant interest in this volume (Chapter 22). Several sets of challenges encountered by teachers are addressed including educational, sociocultural, behavioural, and affective issues. Variables such as unfavourable classroom environments, students' diligence to complete L2 speaking tasks, and teachers' self-perceived (and actual) L2 speaking proficiency levels (sometimes B1) are explored. Teaching speaking is also discussed from the point of view of speaking of English as a Lingua Franca (ELF; Chapter 24). The volume reviews the controversies surrounding Lingua Franca Core (Jenkins 2000). Proposals of ELF integration into mainstream English Language Teaching (ELT) are outlined, and their challenges addressed, especially in the areas of pronunciation model selection, and L2 speaking assessment. As far as curricula are concerned, the meaningful, successful implementation of teaching approaches such as CLT and TBLT is shown to be highly problematic in vast numbers of L2 classroom environments. This reveals stark contrasts between SLA theory and practice, which the volume comments on (Chapter 22).

5. Emerging issues in SLA and speaking

One of the leading issues in this area is the relationship between L2 speech perception and production (Chapter 26). The question of the alignment between the two skills is addressed, including the observation that 'often one can hear how the other speaks but they cannot imitate their accent.' Psycholinguistics is said to view speech perception and production as two separate systems, the former as non-linear and the latter as linear. The question of whether L2 speech learning relies on the same mechanisms that underlie L1 acquisition is explored. Current research methods used to investigate speech perception and production are discussed, including listening tasks (measuring perception) and human judging vs acoustic analyses (measuring production). The effectiveness of L2 speech training is elaborated on and it is concluded that L2 speech improvement requires intervention to progress more quickly (Chapter 26). Another relationship explored in the volume is that between gestures and speaking in L2 learning (Chapter 27). Speaking is described

as frequently multimodal in nature, for speech acts often involve the use of hands, arms, heads, and eyebrows. Types of gestures accompanying speech are discussed, including the representational, rhythmic, pragmatic, and interactive, with the focus being placed primarily on co-speech gestures. The frequency and quality of gestures during speaking in L2 are said to serve as an index of L2 proficiency. The notion of cross-linguistic influence in the context of L2 speaking and gesturing is addressed; as speakers switch from L1 to L2 in speech, they may produce gestures typical for only one of the languages, despite using the linguistic code of the other language. This is said to link with the Thinking for Speaking Hypothesis (Slobin, 1996) and may result in the phenomenon referred to as a *manual foreign accent* (Chapter 27). L2 speakers, and their accents, are also discussed in the volume from the point of view of the relationship between speech-language pathologists (SLP) and L2 speakers (Chapter 28). SLP are concerned with the prevention, assessment, diagnosis, and treatment of communication disorders, including speech-sound disorders (SSD). In the context of L2 speakers, SLP may provide services in the areas of assessment of language disorders, and foreign accent modification (FAM). As a foreign accent is a non-pathological linguistic difference (in other words, it is not a disorder), sections of the volume explore the eligibility of SLP (as medical professionals) to provide FAM services to L2 speakers. SLP focus on the anatomical and physiological aspects of speech production, and make assessments of the oral-motor functionality of speech muscles and airflow (via acoustic analyses of segmentals). L2 research, on the other hand, focuses on both segmental and suprasegmental features of speech, and views intelligibility as the actual understanding of speech, which, apart from acoustics, encompasses language use in its form (phonology, morphology, syntax), content (semantics) and function (pragmatics; Chapter 28). The topic of language and communication disorders (LCD) is also touched upon in the volume in reference to child L2 speakers (Chapter 29). A vast body of research into LCD is summarised, with core areas including (1) cognitive consequences of simultaneous bilingualism, (2) error analysis in child L2 speakers (developmental vs L1 transfer errors), (3) L1/L2 proficiency levels, and (4) timelines associated with reaching native-like L2 proficiency in child L2 speakers. The question of cognitive capacity for dual-language development in children with LCD is thoroughly addressed (Chapter 29). Another key emerging issue in SLA and speaking is that of speaking in the context of workplace communications (Chapter 25). Professional communication in the speaker's L2 is a day-to-day reality for a multitude of employees worldwide. So much so, in fact, that sometimes this pattern can co-exist with L1 attrition (Chapter 31). L1 attrition is said to affect monolingual-like fluency (resulting in slower, less smooth production, and a heavy use of compensation strategies), and accentedness

(acoustic characteristics and suprasegmental features of speech shift away from L1 norms). It is reported that L1 monolingual natives may classify L1 attriters as non-native (or question them as possibly non-native) due to decreased fluency, detected accentedness, differences in parsing patterns, and linguistic complexity (e.g. relative clause attachment; Chapter 31). Workplace communication in L2 encompasses team-working, relationship-building, exercising leadership, and navigating intricate complexities of modern organisations of an increasingly multicultural and multilingual nature. L2 speaking skills in this context are said to require strong pragmalinguistic and metalinguistic competence, as well as style-shifting abilities and emotional intelligence. The volume addresses individual issues surrounding workplace communications and outlines current research in this field, including studies within SLA and corpus linguistics (especially business English corpora). The development of L2 speaking skills in the context of workplace communications is discussed at length, and the complexities of such *workplace language* acquisition are outlined comprehensively. Finally, the area of workplace language training programmes for employees is addressed, and issues of its design and evaluation covered (Chapter 25). A unique group of professionals who require specialist training are interpreters, and training interpreters is given a separate section in this volume (Chapter 30). Interpreting is characterised by its immediacy and finality, and it requires a considerable mental and verbal dexterity, as it relies on the one-time presentation of input. Interpreting pedagogy is said to place particular emphasis on the segmentation of input; anticipation and inferencing; restructuring and paraphrasing; the use of prosodic and non-verbal features; the memorising of input and monitoring of output; the production and repairing of errors; and self-motivation. Some of the core components of interpreting are discussed, and are said to include (1) *linguistic features of spoken language:* lexicon, morphosyntax, phonology, prosody; (2) *presentation features:* phonation, rhetoric, pragmatics, discourse-management; (3) *interactional features:* act sequence, instrumentalities, norms, genres; (4) *interlingual transfer:* comprehension, retention, conversion, re-production; (5) *role-based features:* impartiality, accuracy, ethical considerations, workplace protocols; and (6) intercultural communication (Chapter 30). Finally, one of the very rapidly emerging topics is technology for speaking development (Chapter 21). A characterisation of the field of computer-assisted language learning (CALL) is provided, and an overview of the development of relevant software packages is presented, including automatic speech recognition (ASR) and text-to-speech synthesizers (TTS), the latter famously employed in the Global Positioning System (GPS) and voice assistants such as Siri (Apple) and Alexa (Amazon). As a collaborative event, speaking is said to be the most challenging language skill to teach via technology due to it requiring quality, targeted,

often personalised, specialist corrective feedback. While computer-mediated communications (CMC) certainly promote interaction, ASR applications are reported to underperform in the area of providing corrective feedback on pronunciation errors when compared to humans. This, in turn, is concluded to leave their pedagogical uses in the area of L2 speaking development open to debate, further research, and innovation (Chapter 21).

6. Recommendations for practice

Teacher training programmes are encouraged to incorporate instruction on how to teach pronunciation and how to successfully assess learners in terms of comprehensibility, intelligibility, speech rate, and application of primary stress (Chapter 10). Teachers are encouraged to incorporate prosody-based teaching in their practice (such as teaching of contrastive stress) and to promote the development of innovative teaching methods, including actions, motions, tapping, clapping, and physical beat gestures, for inaccuracies in the production of salient prosodic features such as stress, rhythm, and intonation have a profound effect of speech intelligibility (Chapter 14). Language course providers are encouraged to incorporate PI into the core curriculum of all standard language learning programmes, and to move away from perceiving pronunciation as optional, or as a candidate for a purely stand-alone course of study (Chapter 10). Teachers are encouraged to help learners develop automaticity by eliciting retrieval of known lexical items, FS, and lexicogrammatical constructions by means of strategic prompts, specially designed activities (such as 4/3/2) and worksheets (such as ones containing target vocabulary and disappearing text), which also promote the development of fluency (Chapters 15, 19, 20). Practitioners involved in materials design are encouraged to integrate the teaching of speaking with pragmatics, pronunciation, and discourse intonation, by including, for example, examples of different intonation patterns (polite, impolite, sarcastic) and explaining their perlocutionary effects (Chapter 17). Furthermore, the entire classroom discourse could, for example, be structured in a way that makes spoken interaction the core source of learning, via scaffolding (Chapter 23). Teachers are encouraged to view PI not only in terms of production (articulation) but also perception, and to recognise the benefits of both oral and aural practice. Increased interest in speech perception, and its potential links with production, is strongly recommended (Chapter 26). Practitioners are also encouraged to consider incorporating interventions from traditional psychology into their practice, such as social skills training, exposure therapy, and relaxation techniques. Additionally, it is recommended that teachers attempt to raise the intrinsic motivation of students, increase flow, and help learners develop their emotional intelligence

(Chapter 6). Language testing professionals, on the other hand, are encouraged to consider appraising different components of speaking performance proportionally to the level of the learner, with lower levels being appraised more on aspects such as grammatical accuracy, and higher levels being appraised on additional, more advanced oracy skills, such as speech composition and delivery (Chapter 9).

7. Future directions

On the whole, there is a unanimous call for longitudinal research, for which data is collected from individual learners at various points (more than three data points) over longer periods of time (Chapters 2, 3, 7, 14). Future research into language development in the domain of speaking is encouraged to involve strategic preparation in terms of both theory and timeframes. In other words, *we must know what we are looking for*. Study results are encouraged to be discussed in relation to the research methodologies used in those studies, avoiding possible overgeneralisations into other domains. Data sharing within SLA is encouraged to move the discipline forward, by enabling a larger pool of researchers to benefit from the availability of empirically validated, reliable methods, tasks, and protocols (Chapters 7, 8). Calls are made to investigate ID dynamically and longitudinally, and to cross-reference the findings with different types of pedagogical interventions, in order to establish which types of instruction are best suited to different learner types (Chapter 5). Furthermore, there is a call to integrate ID into models of bilingual speech production, and to examine the role of individual factors involved in language activation (Chapter 1). Calls are made for future research to take a truly learner-centric approach (Chapter 15). Invitations ae also made to explore how L2 prosody can be improved (Chapter 14), which speaking strategies are particularly important to teach and why (Chapter 18), which methods are truly effective in teaching spoken vocabulary (Chapter 19), and which pedagogical interventions are particularly effective in promoting the use of FS in speech (Chapter 20). Calls are made to investigate timeframes within which a certain skill is acquired and becomes stable, with a possible inclusion of CDST analysis of interaction over time (Chapter 3). There is a need for more longitudinal and phonological corpora (Chapter 8). Calls are also made to research teacher anxiety in the domain of PI, investigate its possible links with learner anxiety, and explore potential dynamics between the two (Chapter 6). Also actively called for is practical research into robust development programmes for teachers, aimed at improving their PI skills, and transforming their teaching practices to foster L2 speaking development in their learners (Chapter 23). The design of effective PI techniques and diagnostic tools to assess learners' needs

is called for, especially in the current climate, which is marked by a perceivable scarcity of adequate pronunciation courses (Chapter 10). Calls are made to investigate the effects of training on not only segmentals in isolated words, but also suprasegmentals (Chapter 26). This line of enquiry could consider the fact that speakers are known to converge their speech to resemble that of their interlocutors, which seems to be a stable imitative mechanism present over the course of the lifespan (an ability into which the shadowing technique might be tapping), so a potential line of research could examine whether this ability might be used to improve long-term phonological representations (Chapter 26). The fundamental questions in the domain of L2 speaking development are said to include (1) the components of L2 speaking, (2) how those components relate to L2 learners' impressions of L2 speech, (3) how L2 speaking relates to L2 communicative competence, and (4) how L2 learners become competent L2 speakers (Chapter 7). These fundamental questions are encouraged to be addressed longitudinally, to enable a closer understanding of the long-range dynamics of L2 speaking, including the non-linear development over time, individual developmental trajectories, and differences.

8. Conclusions

This volume represents a vast reservoir of knowledge in the area of SLA and speaking. Individual chapter contributions are authored by some of the leading figures in the field, which makes this publication particularly attractive to academics, researchers, practitioners, teachers, and students. Each chapter presents a comprehensive overview of the selected topic area, and most chapters in the volume share an identical core structure, including (1) Introduction/Definitions, (2) Historical Perspectives, (3) Critical Issues and Topics, (4) Current Contributions and Research, (5) Main Research Methods, (6) Recommendations for Practice, (7) Future Directions, (8) Further Reading, and (9) References. This chapter structure, present throughout the volume, allows for enhanced navigation and makes it easier for readers with diverging interests to locate content of interest more quickly. Some chapters are stronger than others in terms of their overall impact, but all chapters bring in noteworthy insights. The volume includes a rich selection of references and further readings, which should be particularly useful to postgraduate and research students. Some topics presented in the volume can be also found covered extensively in other publications, including the other volumes in the Routledge Handbooks in Second Language Acquisition (SLA) series. This volume, or its future editions, would benefit from being expanded by topics relating to developments in Artificial Intelligence (AI), particularly the notion of Large Language Models (LLM), and their treatment and processing of speech.

Inclusion of this type of content would push this publication even further on the scale of attractiveness and impact. Saying that, however, the present volume offers a lot of highly valuable material to readers. Sections devoted to recommendations for practice and future directions offer a wealth of current, useful, pragmatic suggestions and pointers which, once followed, should take the discipline of SLA and speaking to new, exciting heights. Overall, this is an excellent publication, highly recommended to everyone passionate about SLA, speaking, and L2 speech development.

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