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### Introduction

#### Homage to honorary Professor Martin J. Ball

Having the exceptional opportunity to compile a special issue in *Clinical Linguistics and Phonetics* (CL&P), we wish to pay homage to Martin John Ball, DLitt, PhD and Honorary Professor of Linguistics at Bangor University (archetypal titles of his many other academic accolades and honours) for his outstanding contributions to linguistics and academics. Martin Ball has clandestinely, though aptly, been characterized in the linguists' circle as a 'whizz'. In truth, much like a modern day Academus, Honorary Professor M. J. Ball is venerated in this special issue as a defender of the scholarly spirit in both principle and practice.

Missing out on the opportunity to acquire his native language, Welsh, in infancy, Martin J. Ball not only mastered oral and scholastic fluency in it later, via the more strenuous process of learning by (self)instruction, but he also went on to turn a general passion for language(s) into his scholarly forte. Going from "Teach Yourself Welsh" to Professor of Clinical Linguistics' – in his own words (*Linguist List* featured linguist, Spring 2014), the current co-editor of CL&P has promptly moved, in linear succession, up the professorship ladder, teaching, undertaking and supervising research, while holding academic positions in several institutions across four different continents (Africa, Australia, Europe, North America), genially collaborating with peers, and becoming distinguished and acclaimed for his research and other academic vocations on an international level.

With over 30 years' experience, Honorary Professor Martin J. Ball has instituted a flourishing niche of *learned endeavours* by giving his own, as well as other authors' (more, less or unknown) research a *voice in print*. Attempting to sum kudos, up to the time of this publication, he has authored 12 monographs and (co-)edited 26 volumes in diverse publishing houses, seen the publication of 51 book chapters and 101 peer-reviewed journal articles. His publications and main interests cover general and clinical phonetics (especially developments in transcription and instrumentation); models of phonology (especially as applied to disordered speech); speech disorders in children and adults; sociolinguistics; Celtic linguistics; minority languages, and bilingualism. Some of his works in progress include: the DELAD, a digital archive of disordered speech; extending the LARSP project for languages other than English; as well as a new edition of *Phonetics for Speech Pathology*, and the six-volume *Encyclopedia of Communication Disorders* with Sage Publishers.

Martin Ball established *The International Clinical Phonetics and Linguistics Association Conference* that was inaugurated in 1991 in Cardiff, Wales (this year in its 17th convening) and has given over 200 presentations in internationally established conferences, several of which are key-note talks. Professor Ball has been the founder and ongoing editor of CL&P (Taylor & Francis) since 1986 and of the *Journal of Interactional Research in Communication Disorders* (Equinox) from 2009 to 2016, as well as chief editor of the *Journal of Celtic Linguistics* (UWP) from 1990 to 1994, co-editor of *Belfast Working Papers in Linguistics* 13, guest-editor of 'Wh-

questions in SLI' in *Advances in Speech-Language Pathology* (2006) and of 'Phonological Theories' in the *Asia-Pacific Journal of Speech, Language and Hearing* (2008).

Furthermore, he has served on many journal advisory boards, like the *Journal of Celtic Language Learning*, the *International Journal of Speech Language Pathology*, the *Welsh Journal of Education*, 2001–2009 and the *International Journal of Language and Communication Disorders*, etc.

He is currently the co-editor of three book series, namely *Communication Disorders Across Languages* (with Multilingual Matters), *Studies in Phonetics and Phonology* (with Equinox) and *Language and Speech Disorders* (with Psychology Press).

Concluding this small encomium, more than a speaker of *Welsh* ('welsh' from Proto-Germanic *walhaz* 'foreigner, stranger, Celtic speaker', also found in *walloon* and *vlach* elsewhere in Europe), a *Cymry* ['kəm.rɪ] 'fellow-countryman, comrade', and a *whizz* of academics, Honorary Professor Martin J. Ball is a man with an outlook for the general good and is, above all, a *dyn gweledigaethol* 'visionary'.

### **Overview of the special issue**

In this special issue, we gather together six articles which broadly deal with *phonetic and phonological aspects* of *speech disorders* in children (pre-school and school-aged) and adults (adolescents and adults) across various languages. What follows is an outline of the main themes underscored in this special issue and a brief introduction to the contributed papers.

By *phonetic and phonological aspects*, we refer to the articulatory, physical and physiological properties of speech sounds and to the pattern of distinctive sound contrasts in a given language. Two of the articles in the collection are concerned with co-articulatory dynamics and, thus, are *phonetic* in nature (articles 3 and 6). Three of them include measures such as percent consonants correct, inventory of phonological processes and a fine analysis of consonant cluster production, and, thus, are *phonological* in nature (articles 1, 4 and 5). Finally, one article deals with speech (lip) reading which is not an act of speech production per se but may be influenced by phonological structures in a similar way to production, and, thus, broadly groups with studies which are dealing with the phonological aspects of speech disorders (article 2).

A *speech disorder* (SD) is a communication impairment in which speech sound production is disrupted. It includes voice, speech sound and dysfluency difficulties. A speech disorder may be found in both children and adults. In the case of stuttering, it sometimes begins in childhood and continues into adulthood. A speech disorder does not affect a person's general capacity to understand others or to formulate semantically or syntactically correct phrases during communication - a factor that differentiates it from a *language disorder*. However, *speech disorders* may exist concurrently with *language disorders* and be highly interconnected (e.g., phonology-lexical relations in article 4). The speech disorders represented in this collection are speech sound disorders (SSD) and stuttering.

Two of the articles deal with hearing impaired individuals, who may manifest with speech sound disorders, reduced speech intelligibility and voicing disorders. In the current collection, the focus is on their articulatory patterns (as measured in vowel-to-vowel co-articulation) and on their speech reading abilities (articles 2 and 6). One of the articles is concerned with participants who stutter and here, the attention is also given to their co-articulatory patterns (article 3). The remaining three articles deal with speech sound disorders, although in all three articles, some of the participants are normally developing as well. Because an understanding of

speech disorder relies on a clear understanding of the norms from which it deviates, studies that explore normative speech behaviour are inherently related to the study of disorders. It is not surprising, then, that investigations on disordered speech include by default comparisons of diverging groups and respective control groups. This is especially true in child developmental speech (articles 1, 4 and 5) and in bi/multilingual contexts (article 5) where disentangling normative development from delay/disorder is still under way. Ultimately, the goal of research on typical and atypical speech has practical relevance for reliable screening (article 1) and intervention.

One of the strengths of this collection is the diversity of languages tested which includes Italian, French, Greek, Chinese, English and multiple languages as in article 1 which cites examples from monolingual and bilingual children speaking many different languages, and article 5 which includes bilingual English-speaking children who also speak Afrikaans and isiXhosa. Another strength of the collection is that all six articles have bearing on important current research themes in *clinical linguistics and phonetics* such as instrumental and theoretical approaches to gestural coordination (articles 3 and 6), the effect of hearing status on speech reading ability (article 2), the relationship between lexical and phonological development in late talkers (article 4), the development of phonological measures for identifying children with speech sound disorders (article 1), and speech sound development of children in multilingual contexts (article 5).

The six articles of this special issue, in alphabetical order of first authors' names, are briefly presented next.

#### **Article 1**

##### **A measure for cluster proximity (MCP) in child speech**

Elena Babatsouli<sup>1</sup>, Dimitrios Sotiropoulos<sup>2</sup>

<sup>1</sup>*Institute of Monolingual and Bilingual Speech*, <sup>2</sup>*Technical University of Crete*

This paper proposes a measure for the proximity of clusters in child speech that enhances the accuracy of previous measures used in the literature. The aim is for the measure to be used in establishing quantitative norms for the development of clusters in child speech cross-linguistically in order to guide assessment and intervention of children's speech sound disorders.

#### **Article 2**

##### **The effect of hearing status on speechreading performance of Chinese adolescents**

Liang Chen<sup>1</sup>, Jianghua Lei<sup>2</sup>, Huina Gong<sup>2</sup>

<sup>1</sup>*University of Georgia*, <sup>2</sup>*Central China Normal University*

This paper documents evidence of the effect of hearing status on the speechreading skills of Chinese speakers with and without hearing impairment, complementing previous studies primarily in English and other Western languages. The results of the study show that speechreading skills in the Chinese adolescent speakers are influenced by hearing status, the characteristics of sounds to be identified, as well as the measures used.

#### **Article 3**

##### **The relationship between phonological and lexical development in French-speaking children**

Margaret Kehoe<sup>1</sup>, Tamara Patrucco-Nanchen<sup>1</sup>, Margaret Friend<sup>2</sup>, Pascal Zesiger<sup>1</sup>

<sup>1</sup>*University of Geneva*, <sup>2</sup>*San Diego State University*

This paper examines the relationship between lexical and phonological variables (phonetic complexity, phonological production and neighbourhood density on vocabulary size) in late and precocious talkers of French at age 2;5. The findings are consistent with previous studies

showing that phonological variables influence vocabulary size and lexical acquisition, and support the fact that poor production skills are a limiting factor in the development of a lexicon.

#### **Article 4**

##### **An ultrasound investigation on the speech motor skills of stuttering Italian children**

Giovanna Lenoci, Irene Ricci

*Scuola Normale Superiore*

This paper evaluates the speech motor skills of a cohort of stuttering Italian school-aged children using ultrasound tongue imaging (UTI) data during a phrase repetition task. The stuttering group shows different articulatory patterns to those of the control non-stuttering group. The outcomes of the study: (i) suggest less maturity in the speech motor control system of stuttering children, (ii) contribute towards identifying the diagnostic markers of the disorder at its onset and (iii) enhance our understanding of lingual dynamics during speech production.

#### **Article 5**

##### **South African English speech development: Preliminary data from typically developing pre-school children in Cape Town**

Michelle Pascoe, Olebeng Mahura, Jane Le Roux

*University of Cape Town*

This paper investigates the acquisition of English by 308 children aged 3;0–5;11 in the under-represented multilingual context of South Africa. Specifically, the paper describes (a) normative phonological data; (b) the prevalence of children with speech disorders in the sample and (c) the diagnostic category of participants with speech disorders making reference to Dodd's (2005) framework. The study provides information on typical and atypical speech acquisition in South African children in the context of multilingualism.

#### **Article 6**

##### **Coarticulatory dynamics in Greek disyllables produced by young adults with and without hearing loss**

Anna Sfakianaki<sup>1</sup>, Katerina Nicolaidis<sup>1</sup>, Areti Okalidou<sup>2</sup>, George Vlahavas<sup>1</sup>

<sup>1</sup>*Aristotle University of Thessaloniki*, <sup>2</sup>*University of Macedonia*

This paper investigates vowel-to-vowel coarticulation in Greek speakers with profound hearing impairment. Comparisons with controls show similar F1, F2 coarticulation patterns but significant differences in the degree of coarticulatory effects depending on consonantal context and coarticulatory direction. Results are discussed in light of speech production theories and the Degree of Articulatory Constraint (DAC) model of articulatory constraints (Recasens & Espinosa, 2009), underscoring the importance of cross-linguistic research on coarticulatory variability.

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