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Obituary for Zoltán Dörnyei (1960–2022): A bibliometric mapping of his publications

Abstract

This study aims to analyse the scientific outputs of Zoltán Dörnyei (1960–2022) using metadata extracted from his 84 publications indexed in the Scopus database. It describes and visually represents his network of collaboration in terms of institutions and countries, along with revealing the scope and topical foci of his research by identifying and elaborating on the main themes of his research interests, including (1) individual differences in SLA, (2) research methodology, (3) theology and biblical interpretation, and (4) multilingualism. This study can help language teachers, practitioners, and researchers better understand the abundance and quality of Dörnyei's research outputs throughout his academic career.

Keywords: Zoltán Dörnyei; Bibliometric analysis; L2 motivation; Science mapping; VOSviewer

1. Introduction

This manuscript is devoted to mourning the recent, untimely loss of Hungarian-born British Professor Zoltán Dörnyei (1960–2022) and acknowledging his immense impact on applied linguistics. Along with his inestimable contributions to L2 motivation research, he was engaged in other research areas, including (1) communicative competence and communication strategies, (2) research methodology, and (3) theology and biblical interpretation. Although the authors of this paper did not have the opportunity to meet Professor Zoltán Dörnyei personally, they have been enormously influenced by his writings – especially those concerning L2 motivation– and his generous support in responding promptly and graciously to their e-mail enquiries and sharing his publications with them.

Zoltán began as an English language teacher in the early 1980s at the International School Budapest in Hungry, following a communicative approach to language teaching. He defended his

PhD thesis in Psycholinguistics, entitled *Psycholinguistic Factors in Foreign Language Learning*, at the Department of Psychology, Eötvös Loránd University in Hungary in 1988. In 1998, Zoltán and his family left Hungary and settled in the UK, working first at Thames Valley University, London, before joining the School of English at the University of Nottingham in 2000. Zoltán went on to earn a Doctor of Science (DSc) in Linguistics from the Hungarian Academy of Sciences in 2003. A DSc is a higher doctorate given to individuals who have made significant and continuous contributions to scientific knowledge that exceed the requirements of a PhD.

Zoltán was also considered a theologian and writer on the Christian life. In addition to his incalculable contributions to the study of second language acquisition (SLA), he obtained his second PhD in Theology at Durham University, UK in 2017 with a thesis entitled *Progressive Creation and the Struggles of Humankind in the Bible*. Zoltán was promoted to Professor of Psycholinguistics at the University of Nottingham in 2004. He earned several notable awards, including the Henry Osborn Award of Cornerstone University, the Modern Language Association's annual Kenneth W. Mildenberger Prize, the TESOL Award for Distinguished Research, the Ben Warren International House Trust Prize, the ILTA Best Paper Award, and the Duke of Edinburgh English Language Book Award (Al-Hoorie & Hiver, 2022).

Zoltán published many books, along with his river of articles, chapters and questionnaires. Therefore, this paper aims to provide a comprehensive view of Zoltán's academic research since the beginning of his academic career from a bibliometric perspective. Bibliometric reviews enable the measuring, tracking, and analysing of a researcher's scholarly output or the output of a specific field systematically and objectively to identify the main thematic areas and collaborative networks and reveal the scientific roots of those studies (Karakus et al., 2021).

2. The present study

2.1 Study aims

Compared to the time-consuming nature of systematic reviews and content analysis, bibliometric studies provide a more extensive view of the development, trends and current status of a corpus

and can process a more significant amount of scientific outputs published over a more extended period while requiring a reduced amount of time and resources (Hajar & Karakus, 2022). This study can therefore help language teachers, practitioners, and researchers better understand the abundance and quality of Zoltán's research outputs throughout his academic career. It examines his network of collaboration in terms of institutions and countries, along with revealing the scope and topical foci of his research by identifying and elaborating on the main themes of his research interests.

2.2 Materials and methods

This study employs the metadata extracted from the Scopus database and adopts a bibliometric approach to analyse Zoltán's scientific output. The Web of Science (WoS) and Scopus are the most frequently used databases in bibliometric analyses, but Scopus has more extensive coverage of scientific journals (Mongeon & Paul-Hus, 2016). Therefore, the current study analyses the author's 84 publications published at prestigious venues indexed in Scopus.

The Scopus database is considered a trustworthy bibliometric data source for large-scale analyses because it is a wide-reaching curated abstract and citation database with expansive coverage of books, peer-reviewed journals, and proceedings, and it ensures that scientific outputs are indexed through accurate evaluation, selection, and quality assurance processes by an independent board (Baas et al., 2020). However, the Scopus database has the same limitations as the WoS in terms of the underrepresentation of publications in the fields of the arts, humanities and social sciences, in languages other than English, and that have originated in countries other than the UK, USA, and European countries (Mongeon & Paul-Hus, 2016). Nevertheless, the researchers believe that Scopus provides better insights into Zoltán's highest-quality research outputs.

2.3 Search strategy

Two versions of the author's name were entered in the author name search field: *Dörnyei*, *Zoltán* and *Dornyei*, *Zoltan*. The search was conducted in the first week of March 2023 with an initial yield of 208 results. Each publication was scrutinised, so that only the ones belonging to Zoltán were included in the analysis, and the researchers found 86 items belonging to him. Four editorial forewords and one letter were excluded from this corpus because they would not provide

any academic insight into the analyses. Therefore, the final corpus included 84 items: 37 articles, 16 books, 24 book chapters, five reviews, and two conference papers. The co-authors, type of the study, methodologies, scientific venues and foci of Zoltan's 84 publications are presented in Table 1 (see Appendix A).

In terms of subject areas, most of Zoltán's publications are indexed in *Social Sciences* (78 items), followed by *Arts and Humanities* (68 items) with 12 publications indexed in *Psychology* and one in *Neuroscience*. Zoltán's first book, *Words on Your Own*, was published in 1986 (Dörnyei et al., 1986), a self-study vocabulary-building book inspired by his early English language teaching experience. However, the first of Zoltán's publications to appear in Scopus was dated 1991, and the distribution of his publications according to the year of publication was sporadic. The number of Zoltán's publications that appeared in Scopus for each year is displayed in Table 2.

Years – Number of	Years – Number of publications
publications	
1991 – 1	2009 - 7
1992 - 2	2010 - 1
1994 - 5	2012 - 1
1995 – 1	2013 - 7
1997 – 2	2014 - 11
1998 – 5	2015 - 4
2000 - 2	2016 - 3
2002 - 2	2017 - 4
2003 - 1	2018 - 1
2004 - 2	2019-1
2005 - 4	2020 - 1
2006 - 4	2021 - 2
2007 - 1	2022 - 4
2008 - 3	2023 - 1

Table 2. Zoltán's number of publications per year

2.4 Data analysis procedures

A bibliometric approach was used to analyse and visualise Zoltán's publications. In the current study, VOSviewer software was deployed to analyse and visualise bibliographic data (Eck, Waltman, & Glänzel, 2017), and Zoltán's network of collaboration was extracted through the co-authorship network analysis. The bibliographic coupling of countries reveals the author's collaboration network regarding countries of origin. The bibliographic coupling of sources (journals and books) shows the scientific venues and the scope of Zoltán's work. Finally, the co-occurrence of author keywords uncovers the main topical foci of Zoltán's research throughout his academic career. The network visualisation of each cluster is presented to emphasise the content of each topical focus.

3. Results and discussion

3.1 Zoltán's Network of Collaboration

Network visualisation of the co-authorship network (Figure 1) presents the most prominent researchers in Zoltán's network of co-authors. Of the 52 authors, 20 met the threshold of having a minimum of two co-authored publications with Zoltán. At the centre of the collaboration link, Zoltán has 84 publications, 12396 citations, and a total link strength of 58. Zoltán's most prominent collaborators are shown in Table 3, with their publication numbers (co-authored with Zoltán), citations, and total link strengths. According to the results, Henry, A. and Csizér, K. have the highest number of co-authored publications (eight each) with Zoltán. Henry, A. has the highest total link strength (15), and Csizér, K. has the highest citation count (1570) among all Zoltán's co-authors.

As shown in Table 3, most of Zoltán's co-authored publications were with scholars affiliated with universities in Hungary, where he came from, and in the UK, especially the University of Nottingham, because he had been affiliated with this university since 2000. In addition, Zoltán had important publications with Ema Ushioda at the University of Warwick in the UK. Ushioda (2022) indicated that her professional links with Zoltán began through Dick (Richard) Schmidt, who

invited her to contribute to a book he was co-editing with Zoltán (Dörnyei & Schmidt, 2001). Zoltán also co-authored several publications with authors in Canada, mainly because he earned a scholarship at Carlton University in Ottawa (Canada) in 1990. During his stay in Canada, he met other prominent scholars in L2 motivation, including Richard Clément, Kim Noels, and Peter MacIntyre.

Collaborators	Affiliation	Number of	Citations	Total link
		publications		strengths
Henry, A.	University West, Sweden	8	260	15
Muir, C.	University of Nottingham, UK	4	143	9
Csizér, K.	Eötvös University, Hungary	8	1570	8
Ushioda, E.	University of Warwick, UK	7	792	7
Adolphs, S.	University of Nottingham, UK	2	61	6
Kristjansson,	Trinity Western University,	3	27	6
C.	Canada			
MacIntyre,	Cape Breton University, Canada	3	104	6
P.D.				
Wong, M.S.	Azusa Pacific University, USA	3	27	6
Schmitt, N.	University of Nottingham, UK	2	394	5
Durow, V.	University of Nottingham, UK	2	87	4
Ibrahim, Z.	University of Nottingham, UK	2	100	4
Chan, L.	University of Nottingham, UK	2	268	3
Clement, R.	University of Ottawa, Canada	2	1195	3
Noels, K.A.	University of Alberta, Canada	2	1195	3
Tseng, W.T.	National Taiwan Normal	2	390	3
	University, Taiwan			

Table 3. Zoltán's most prominent collaborators

Bardovi-	Indiana University, USA	2	281	2
Harlig, K.				
Kormos, J.	Eötvös University, Hungary	2	296	2
Ryan, S.	Waseda University, Japan	2	817	2
Thurrell, S.	Eötvös University, Hungary	2	83	2

The different colours in Figure 1 represent different clusters in which those groups of authors came together. The scholars who have more co-authored publications with each other are grouped within the same cluster. Although Zoltán's name appears in the greenish cluster together with Csizér, K. and Ryan, S. because of his frequent collaborations with these two researchers, all the other authors are included in this analysis because of their co-authorship links with Zoltán. In Figure 1, only four prominent co-authors had single links with Zoltán and are not included in any cluster: Bardovi-Harlig, K.; Kormos, J.; Thurrell, S.; and Ushioda, E. All the other prominent co-authors took part in a cluster comprised of two, three or four co-authors.



Figure 1. Network visualisation of co-authorship network Note: Authors bearing the same colour are in the same cluster.

3.2 Collaboration network regarding the countries of origin

The bibliographic coupling of countries (Figure 2) reveals Zoltán's collaboration network, including all his publications and co-authors, showing 15 countries in his network of co-authors, as shown in Figure 2. The UK is at the centre of the network with 63 documents, 8933 citations, and a total link strength of 12420 because Zoltán produced most of his publications while he was affiliated with Nottingham University in the UK.

The countries in his network are in Table 4, with their publication numbers, citations, and total link strengths. The results show that Hungary has the second highest number of documents (21) and citation count (3763) because of Zoltán's previous affiliation at Eötvös University, Hungary. Japan has the second-highest total link strength (3714), which indicates the high collaboration intensity of this country with other countries in this network. Canada has the third-highest number

of publications (10) and citation count (1383), while Sweden has the fourth-highest number of publications (8) and third-highest total link strength (3536) in this network. The United States follows them with the fifth highest counts of publications (6) and citations (509). The appearance of the most prominent co-authors from Hungary, Canada, the United States, Sweden and Japan in the co-authorship analysis (Figure 1, Table 3) aligns with the findings here.

In the overlay visualisation (Figure 2), blueish nodes represent the countries of origin at the beginning of his scientific life, while yellowish nodes signify the countries of origin of his more recent publications. The figure shows that his most recent publications were co-authored with authors from Vietnam, Ireland, and Sweden. His oldest publications originated in Hungary, as he worked there at the beginning of his career. Notably, Zoltán also has publications with scholars in the Middle East, such as Zana Ibrahim (in the Kurdistan region of Iraq) and Ali H. Al-Hoorie (Saudi Arabia), who were his PhD students at Nottingham University, UK.

Countries	Number of	Citations	Total link strengths
	publications		
Japan	3	1201	3714
Sweden	8	260	3536
Hungary	21	3763	3267
Canada	10	1383	1579
New Zealand	1	90	982
Hong Kong	1	310	747
Saudi Arabia	1	128	506
United States	6	509	491
South Korea	2	320	457
Vietnam	1	4	436
Netherlands	1	137	389
Ireland	1	16	307
Taiwan	1	41	177

Table 4. Countries in Zoltán's network



Figure 2. Bibliographic coupling of countries (Overlay visualisation) Note: The colours indicate the average publication year of the items produced by each country

3.3 The scientific venues and scope of Zoltán's work

The bibliographic coupling of sources (Figure 3) presents the most prominent venues of publication preferred by Zoltán and his co-authors. Of the 40 sources (journals and books), 13 met the threshold of having a minimum of two publications. The order of the journals is given in Table 5, with the number of publications, citations, and total link strengths. The findings reveal that his most influential papers (with the highest citation count) were published in *The Modern Language Journal*, followed by *Language Learning* and *Applied Linguistics*. Zoltán published the highest total link strength in "Language Learning".

Journals	Number of	Citations	Total link strengths
	publications		
Language Learning	8	1941	711
The Modern Language Journal	8	2273	565
Applied Linguistics	4	814	332
Language Teaching Research	4	448	269
System	3	328	243
Language Teaching	2	587	212
Aila Review	2	154	197
Language Learning and Language Teaching	4	279	178
Motivational Dynamics in Language Learning	5	201	177
Christian Faith and Language Teaching and	4	36	97
Learning			
TESOL Quarterly	4	695	92
ELT Journal	3	83	5

Table 5. The most prominent venues of Zoltán's publications



Figure 3. Network visualisation of the bibliographic coupling of sources Note: Different colours represent different clusters.

3.4 Topical foci of Zoltán's research

The co-occurrence of author keywords shows the topical foci of Zoltán's research. The keywords, which are semantically grouped in different clusters and represented by diverse colours, denote the main themes of Zoltán's research (Figure 4). All 64 author keywords listed in all the publications in the corpus were included in the analysis. *Motivation* (5, 20) is the most frequently co-occurring keyword in Zoltán's publications, followed by *L2 motivational self system* (L2MSS) (4, 13), *language learning motivation* (3, 15), *vision* (3, 13), and *ideal L2 self* (3, 11), with the number of occurrences and total link strengths given in the brackets. Oxford (2022: xxi) fittingly remarks that Zoltán has long been a scholarly 'bridge' from other fields to SLA. One example is the introduction of the L2 motivational self system (L2MSS) in 2005 to elucidate individual differences in language learning motivation. The L2MSS – which comprises ideal and ought-to

future self-guides and the L2 learning experience – downplays the idea that motivation is static and unitary. An essential supposition in the L2MSS is that when the language learner observes the difference between their current situation and their future vision, this discrepancy can serve as a trigger to bridge the perceived gap and achieve the desired possible self-image. The first anthology testing the L2MSS appeared in 2009 (Dörnyei & Ushioda, 2009), presenting empirical studies that, as Dörnyei (2009: 31) indicates, had 'solid confirmation for the proposed self system'. Hiver and Al-Hoorie (2020) point out that although the L2MSS is regarded as the most dominant theoretical framework in the language motivation field, most studies that used the L2MSS had focused on exploring the correlations between language learners' self-guides (i.e., ideal or ought) and selfreported intended effort more than correlations with more objectively measured language learning behaviour and achievement.

Oxford (2022) gave another example of how Zoltán was a bridge from other fields to second language acquisition (SLA), using neurobiological findings to elucidate how language learning functions. Neurobiological research shows that individuals stimulate neural mechanisms when they see or hear something parallel to those stimulated when they visualise seeing or hearing the same event in reality (You, Dörnyei & Csizér, 2015). In this sense, Zoltán differentiates between the two concepts: a goal and a vision. While both concepts refer to directional intentions to achieve one's desired future self, a goal is an abstract cognitive conception of a desired level of competence. Conversely, a vision is closely entangled with the notion of mental imagery, but it is used in motivational contexts to represent 'a personalized goal'; that is, it incorporates both a perceptible goal and a concrete plan of how the individual approaches or realises that goal (Dörnyei & Kubanyiova, 2014: 10). This deepening understanding of mental imagery led to the theory of Directed Motivational Currents (DMC) (Muir & Dörnyei, 2013), or what Ibrahim and Al-Hoorie (2019) call sustained flow to capture the essence of optimal and long-term motivated behaviour. Dörnyei, Muir, and Ibrahim (2014: 13) assert that vision is an essential element of the DMC experience, in that 'the intensity of a DMC cannot be achieved without adding this visionary quality to guiding goals'. Al-Hoorie and Al Shlowiy (2020), in turn, outline the considerable overlap between vision theory and goal-setting theory in several conditions, including the presence of an ideal vision, the belief in achieving that vision and developing an action plan. The authors further argue that while a future vision may contribute to triggering DMC, it is not necessarily an indispensable element in the overall experience because DMC can be sustained by deriving pleasure from the activity or experiencing a sense of progress while engaging in it.

Oxford (2022) further points out that Zoltán succeeded in bridging the fields of theology and psycholinguistics, as evidenced in his book *Vision, Mental Imagery and the Christian Life: Insights from Science and Scripture* (Dörnyei, 2020), which is full of biblical faithfulness and pastoral wisdom. It reveals the integration of Scripture and social science and the importance of human beings' dual sensory system in illuminating Scripture and the Christian experience. He pointed out that divine vision is based on familiar imagery from the material world and underlines an alternate, spiritual reality. In addition to the network visualisation presenting the overall picture in Figure 4, snapshots of all clusters were provided in the other figures to take a closer look at each theme (Figures 5-11).





Figure 4. Co-occurrence of author keywords (network visualisation) Note: Different colours represent different clusters.

3.4.1 The L2 motivational self system (L2MSS) and vision intervention

The network visualisation of the red cluster (Figure 5) shows the increasing interest in using Zoltán's L2MSS in the language motivation field. In a systematic and comprehensive survey of L2 motivation research from 2005 to 2014 (N = 416), Boo et al. (2015) found that 72.67 percent of empirical studies investigated motives for English language learning and the L2MSS represented the overriding theoretical framework in L2 motivation research, due to its versatility to address a variety of perspectives from different theoretical orientations. The L2MSS comprises three focal elements: the ideal L2 self, the ought-to L2 self, and the L2 learning experience (Dörnyei, 2005, 2009). *The ideal L2 self* signifies the future self-image that an induvial internally desires to accomplish (i.e., it represents a person's hopes, aspirations and wishes for personal, vocational or social gains). In contrast, *the ought-to L2 self* is a vision of the future self that embodies significant others' wishes and expectations by 'bowing to social pressures and demands or avoiding possible negative consequences' (Ushioda 2014: 133–134). The *L2 learning experience* involves situated motives that relate to the immediate learning environment and includes aspects such as the teacher, the curriculum, and peers.

Al-Hoorie (2018) carried out a meta-analysis of the L2MSS which revealed how the three components of the L2MSS positively correlated with intended effort but decreased with achievement. More specifically, the ideal L2 self, as Al-Hoorie (2018) reports, was a strong predictor of intended effort in 32 empirical studies involving 30,572 participants from different countries, whereas the construct of the ought-to L2 self, employed in 19 studies and involved 18,542 participants, had a weaker predictive validity, mainly because the visions associated with the ought-to self are predominantly short-term because they are less internalised within the self, and largely imposed by one's authoritative figures (Al-Hoorie, 2018). Thus, language learners with proximal goals are 'less likely to sustain engagement in learning and enthusiasm about it in the long run' (Al-Hoorie, 2018: 737). As regards the L2 learning experience, Al-Hoorie (2018) identifies 18 studies involving 19,586 participants and reveals a positive correlation between the L2 learning experience and intended learning effort (e.g., Lamb, 2012; Taguchi et al., 2009).

An investigation of Dörnyei's (2009) L2MSS through meta-analysis was also conducted by Yousefi and Mahmoodi (2021), focusing on studies between 2010 and 2019. The authors, based on the analysis of 17 published studies using L2MSS and involving 18,832 language learners, found that the effectiveness of L2 motivation is related to other factors, including learner age, educational level, gender, learning context, and geographical location. Yousefi and Mahmoodi (2021) further argue that there is an urgent need to conduct more studies that explore the effectiveness of L2MSS while studying individuals' experiences of learning languages other than English (LOTEs) (see Hajar, 2022; Takahashi, 2023). Notably, understanding the L2 motivation of multilingual individuals to learn LOTEs has recently improved, especially after Ushioda and Dörnyei's (2017) special issue published in *The Modern Language Journal*.

Commenting on the previous studies underpinned by the L2MSS model, Zoltán points out that less attention was paid by language researchers to the construct of the L2 learning experience compared to the other two constructs (ideal and ought-to selves), even though it is often the most powerful predictor of motivated behaviour (Dörnyei, 2019). Zoltán has ascribed the relative neglect of this motivational component to its historical roots that are evidently different from those of the two self-guides, along with the under-theorised nature of this component. Therefore, Zoltán suggests a new direction for conceptualising the L2 learning experience, defined as 'the perceived quality of the learner's engagement with various aspects of the learning process' (Dörnyei, 2019: 20).



Figure 5. Network visualisation of the red cluster

Although limited in number, some studies have explored the mediating role of vision intervention in developing, enhancing, and maintaining learners' L2 motivation. For example, Vlaeva and Dörnyei (2021) have documented the nature of the L2 vision intervention (e.g., Chan, 2014; Safdari, 2019) and qualitatively examined the effectiveness of a five-week vision-building course with 25 international students (1 Cambodian, 23 Chinese and 1 Korean) learning English for academic purposes (EAP) at a UK university. Vlaeva and Dörnyei (2021) found that their participants experienced and processed mental imagery differently, ranging from an excited response to an entire rejection of the visionary practice. The vividness and plausibility of an L2 vision among some participants had faded over time due to 'the perceived gulf between the imagined future success and the much less positive real-life experience' (Vlaeva & Dörnyei, 2021: 958). That is, the proximal goals of passing a high-stakes examination lessened some participants' focus on their ultimate future vision. Therefore, Vlaeva and Dörnyei (2021: 963) underline the importance of making vision-building an effective and viable instructional strategy for a large number of students and learning contexts by 'building up positive learner attitudes towards visualisation, automatising visualisation skills through L2 content-related practice' and making a balance between vision-building and L2 instructional goals.

3.4.2 The unconscious dimension of motivation

The network visualisation of the red cluster (Figure 5) also reveals how the unconscious dimension of motivation in L2 learning attracted the interest of Zoltán and his co-authors, especially Al-Hoorie (2016a and b, 2019). Zoltán indicates that 'although such unconscious motives do not feature strongly in current motivational thinking, it seems clear that they play a significant role in our lives and therefore they are likely to be rediscovered before long' (Dörnyei, 2001: 7). Zoltán agrees with Al-Hoorie (2016a and b) that the role of *unconscious agency* driving human behaviour has been largely neglected in L2 motivation research, despite its significance. In this regard, Al-Hoorie (2016a) used the implicit association test to uncover the effect of implicit attitudes of international students from an Arab background studying in the UK towards L2 speakers. Al-Hoorie (2016a) found that the participants with positive attitudes towards L2 speakers bolstered their ties with different social networks in the L2 community and were less afraid of integration with the host country. These findings assert that implicit attitudes pertain to other motivational variables. The significance of the harmony of conscious/unconscious attitudes was further explored in another study by Al-Hoorie (2016b), which involved academic achievement as a criterion measure. Elsewhere, Dörnyei and Al-Hoorie (2017) underline that this line of research gives useful insights for future research on L2 motivation, especially because the unconscious processes of language learning are underpinned by several theoretical frameworks in this field, including Higgins' (1987) self-discrepancy theory and Markus and Nurius' (1986) self-guides.

3.4.3 Research methodology

The network visualisation of the green cluster (Figure 6) shows Zoltán's incalculable contributions to research methodology through his two well-known books on research methodology: *Research Methods in Applied Linguistics: Quantitative, Qualitative, and Mixed Methodologies* (Dörnyei,

2007) and *Questionnaires in Second Language Research: Construction, Administration, and Processing* (Dörnyei, 2010). They are regarded as essential methodological guides for producing and using reliable and valid research instruments in second language studies. Zoltán ascribed his interest in mastering the quantitative research methodology to its dominance in L2 motivation research before *the social turn* in language education in 2003 (Dörnyei, 2016). Related to this, he was asked at Nottingham University in 2003 to develop a distance learning programme teaching Research Methods in Applied Linguistics, which encouraged him to write his book on research methodology in 2007, after which, Zoltán considered himself 'officially' a research methodologist (Dörnyei, 2016). Then in the late 1990s, Zoltán became more involved in 'mixed-methods' projects and presented a comprehensive overview of data-based research (see Table 1, Appendix A).

In 2004, Zoltán provided examples from two classroom-oriented research projects on how a special type of qualitative system modelling – *retrodictive qualitative modelling* (RQM) – can allow meaningful empirical research in a dynamic systems framework. RQM starts at the end – the system outcomes – and then works back to understand why the system has ended up with a particular outcome option (Dörnyei, 2014). Notably, the third edition of Zoltán's book *Questionnaires in Second Language Research: Construction, Administration, and Processing* (2023) was co-authored with Jean-Marc Dewaele, who described Zoltán in the preface of their book as 'a man of boundless energy, amazing erudition, unwavering focus, blazing self-confidence, and profound kindness. He also had a wicked sense of humour, and he enjoyed challenges and teasing. He had a great sense of academic drama'. Unfortunately, Zoltán passed away on 10 June 2022, before the book came out. One of the main contributions of the latest edition of this book involves the use of online questionnaires, which was intensely accelerated by the COVID-19 pandemic as lockdowns made the use of paper-and-pencil questionnaires challenging, if not impossible, for an extended period.



Figure 6. Network visualisation of the green cluster

3.4.4 Individual differences in SLA

In addition to his enormous contributions to L2 motivation research, the network visualisation of the blue cluster (Figure 7) shows Zoltán's interest in other important individual difference variables, including aptitude, personality, gender, learning styles, and language learning strategies (LLSs). Zoltán published several articles about individual differences in SLA (e.g., Dörnyei, 2006; Dörnyei & Skehan, 2008) and two editions of a book titled *The Psychology of the Language Learner: Individual Differences in Second Language Acquisition* in 2005 and 2015 with Zoltán co-authoring the second edition with Stephan Ryan. For instance, Dörnyei (2005: 169) classified LLSs into four components: (1) *cognitive*, including the understanding and transformation of the language learning input (e.g., summarising, repetition); (2) *metacognitive*, involving higher order executive skills (e.g., planning, organising, monitoring and evaluating one's language learning the control of one's feelings and conditions while learning the

target language; and (4) *social*, including interpersonal behaviours aimed at maximising the opportunities of using the target language (e.g., cooperating with peers and asking questions).

Zoltán criticised the lack of a coherent agreement on the defining criteria for LLSs and relying largely on task-free strategy questionnaires in LLS studies because these studies provide a decontextualised, static and partial picture of language learners' strategic language learning behaviour by merely capturing individuals' frequency of using LLSs without paying sufficient attention to the potential of both contextual factors and task influence (Dörnyei, 2005; Dörnyei & Ryan, 2015). The weaknesses related to the field of LLSs made Zoltán question whether LLSs actually exist as a psychological construct, and therefore, he suggested adopting the construct of 'self-regulation' instead (Dörnyei, 2005). Later on, Zoltán acknowledges that several criticisms directed at LLS research 'had lost their moral high ground because similar issues have also been raised about the more "respectable" ID [individual difference] counterparts of the concept (such as aptitude and motivation)' (Dörnyei & Ryan, 2015: 141). The changing perspective of Zoltán's trenchant critique of LLS research was welcomed by LLS researchers such as Rebecca Oxford and Carol Griffiths.



Figure 7. Network visualisation of the blue cluster

The gender differences in motivational dispositions with and without any prior visualisation experiences were also examined in several of Zoltán's empirical studies. You, Dörnyei and Csizér (2016), for instance, in their survey of 10,000 Chinese students found gender differences in the use of visualisation in secondary school students and university non-English majors, showing that female students had stronger 'visualisation capacity' operationalised by 'vividness of imagery' and 'ease of using imagery' (You et al., 2016: 103). Furthermore, females showed how they expanded on their visualisation experiences more than males and scored significantly higher in terms of ideal L2 selves. Nevertheless, Hiver and Al-Hoorie's (2020) study with 1,297 secondary school L2 learners (789 females and 508 males) in South Korea did not replicate the findings of You et al.'s (2016) study. Hiver and Al-Hoorie (2020) found no gender difference in language motivation or achievement that can be directly linked to the influence of vision. There was a strong

correlation between intended effort and the ought-to L2 self scales only for males, but no significant differences were observed between the two genders in other scales.

3.4.5 Directed motivational currents (DMCs)

The socio-dynamic turn in language learning motivation research (Dörnyei & Ushioda, 2011), which stresses the importance of the situated complexity of L2 motivational processes, encouraged Zoltán and other researchers (Dörnyei, Ibrahim, & Muir, 2015; Dörnyei, Muir, & Ibrahim, 2014; Henry, Davydenko, & Dörnyei, 2015; Muir & Dörnyei, 2013) to develop a novel psychological construct called a *directed motivational current* (DMC). A DMC implies a higher level of urgency than normal motivated behaviour and is 'a prolonged process of engagement in a series of tasks which are rewarding primarily because they transport the individual towards a highly valued end' (Dörnyei, Ibrahim, & Muir, 2015: 98).

DMCs, characterised by sustainability and intensity, integrate a series of goal-oriented actions associated with possessing positive and encouraging feelings related to achieving a personal goal of great importance. Zoltán and his colleagues have identified specific defining features of DMCs that differentiate these motivational currents from other types of intense motivational experiences. That is, the core components of DMCs encapsulate

(1) *the directedness of a DMC:* the existence of a personally meaningful goal or higher-order vision to transfer it into sustained motivated behaviour

(2) *the enduringness of self-propelling motivational processes*: a well-structured pathway, empowering the language learner to utilise their initial motivational momentum towards long-term goal achievement and enhancement of the perceptions of well-being and fulfilment

(3) *a positive emotional loading* that encourages an individual to pursue and make effort in anticipation of arriving at the final desired destination.

To provide clarification on the nature of a DMC within the field of education, Zoltán gave the example of a student working towards a deadline for their final dissertation. That student decisively

declines offers of going out with their friends or family members and works strategically in order to succeed in finalising their dissertation, which signifies the best of their abilities, thus ensuring that down the line, they can have their dream job, which is the vision fuelling the DMC. For the period prior to the deadline, that student has exerted *the optional form of engagement* and displayed a high level of focus and discipline to accomplish their ultimate desired future self. Following the preliminary conceptual papers by Zoltán and his colleagues, an increasing number of empirical studies have been carried out to explore DMCs from multiple perspectives. For instance, Henry, Davydenko and Dörnyei (2015) qualitatively conducted the first systematic empirical exploration of the DMCs experienced by migrant students learning Swedish as a second language. The authors found that the main features of DMCs were articulated in participants' explanations of sustained motivated behaviour: namely, the existence of a significant facilitative structure, positive attitude, and the direction of motivated behaviour towards achieving long-term personal goals. The findings of this study assured the validity of the DMC construct.



Figure 8. Network visualisation of the yellowish cluster

3.4.6 Digital innovations to harness the motivational power of the ideal L2 self

The network visualisation of the purplish cluster (Figure 9) shows Zoltán's attentiveness to the importance of using technological innovations to sustain language learners' L2 motivation and visualise their L2 ideal selves. In one of the empirical studies, Zoltan and his colleagues qualitatively examine how digital animation, such as animated self-masks and avatars in 2/3D, could boost or mediate the L2 motivation of nine Chinese learners of L2 English by creating a digitally augmented image of the ideal L2 self (Adolphs et al., 2018). As Adolphs et al. (2018: 176) remark, 'a highly realistic representation of being engaged in the desired target activity–such as seeing oneself successfully interacting in the L2–is likely to have a high degree of motivational relevance, and therefore substantial motivational power'. This innovative method was appealing to several participants in this small-scale qualitative study because of being capable of seeing and hearing a virtual self engaged in TL interaction, but it had some technical challenges including issues with student sensitivity.



Figure 9. Network visualisation of the purplish cluster

3.4.7 Impact of intercultural contact through tourism on L2 attitudes and motivation

The network visualisation of the orange cluster (Figure 10) reveals Zoltán's interest in how increased intercultural contact through tourism can contribute to fostering positive language attitudes and L2 motivation, in particular in countries where the target language is almost only taught in formal schooling contexts with few opportunities of having meaningful contact with the native speakers of that language. Zoltán and his colleagues conducted a longitudinal study, tracking the dynamism of motivational orientations of over 13,000 language learners aged 13-14 in Hungary, spanning a period from 1993 to 2004 (Dörnyei et al., 2006; Csizér & Dörnyei, 2005; Dörnyei & Clément, 2001; Dörnyei & Csizér, 2002). The data collection consisted of three stages which occurred during significant periods in Hungary's history: (1) the spring of 1993, a few years after the fall of Communism; (2) the late 1999, marking the end of the first decade of political freedom; and (3) the spring of 2004, just before Hungary's accession to the European Union.

One of the aims of the longitudinal study was to quantitatively examine how intercultural contact, generated mainly by international tourism, pertains to interethnic and language attitudes towards five target languages– English, German, French, Italian, and Russian – and L2 motivation, and the data were collected from 4,765 pupils in 1993 and 3,828 pupils in 1999. The study found that intercultural awareness boosted positive intergroup and language attitudes alongside motivated language learning behaviours. In addition, a positive correlation was observed between the participants' perceived self-confidence and their environment, on the one hand, and the amount of intercultural contact, on the other. However, the study reported that if the contact went beyond a specific threshold level, it often worked against positive intercultural relations.



Figure 10. Network visualisation of the orange cluster

3.4.8 Motivation to learn LOTEs and multilingual identities

Research into L2 motivation has predominately focussed on English as the target language due to its 'necessity, utility, advantage, social capital, power, advancement, mobility, migration, and cosmopolitanism' (Ushioda, 2017: 471). However, this dominance of the monolingual biases in traditional SLA theorising has gradually started to change due to the *multilingual turn* in SLA research (May, 2014). With the *multilingual turn* in SLA, language researchers have recognised the salience of having to 'resituate the issue of multilingualism more centrally in applied linguistics' in order to understand language learners' holistic linguistic repertoires, with L1, L2, L3 and LX interconnections (May, 2014: 2). Therefore, exploring an individual's motivation to learn a particular language necessitates understanding their multilingual orientation and how they see themselves in relation to the broader social context that encompasses their various identities, such as 'international students', 'immigrants', 'housewives', 'university lecturer' and so on.



Figure 11. Network visualisation of the brownish cluster

Ortega (2022: 237) indicates that studies using a *multilingual lens* to understand the L2 motivation of multilingual students to learn languages other than English (LOTEs) in both Anglophone and non-Anglophone contexts have increased, especially after Ushioda and Dörnyei's (2017) special

issue published in *The Modern Language Journal*. Takahashi (2023: 31), however, argues that there is 'a geographical skewness' to previous studies of LOTEs because most were conducted in European and Anglophone contexts. The network visualisation of the brownish cluster (Figure 11) shows Zoltán's publications about multilingual individuals' motivation for LOTEs (e.g., Dörnyei & Al-Hoorie, 2017; Dörnyei & Ushioda, 2017). Dörnyei and Al-Hoorie (2017), for instance, discuss the following five aspects of motivations for LOTEs: (*a*) the perplexing interaction of English- and LOTE-related self-images; (*b*) the individualistic focus of the ideal L2 self; (*c*) the diverse nature of the ought-to self; (*d*) the nature of goals in the learning of English and LOTEs; and (*e*) the shifting role of unconscious motives in learning English and LOTEs.

Conclusion and limitations of the study

This study provided snapshots of Zoltán Dörnyei's (1960–2022) incalculable, worldwide contributions to SLA. Apart from being a prominent researcher and mentor, Zoltán was an exceptional teacher. Zoltan asserts that 'In the 1980s, I started out as a language teacher and then a teacher trainer, and although I have by and large become a full-time researcher since then, I am still a teacher at heart' (Dörnyei, 2016: 131). This obituary has some methodological limitations. The researchers only used the Scopus database and did not include editorial materials and letters. The author's 84 publications included in Scopus are analysed in the current study. WoS displayed the author's 56 publications, of which 37 were journal articles, 12 book chapters, and other works such as editorial materials, book reviews, and proceeding papers. Google Scholar listed his 237 scientific outputs, including conference presentations, reports, and editorial pieces. Although Google Scholar includes the author's all types of scientific outputs and presentations covered by peer-reviewed or non-peer-reviewed venues, Scopus and WoS are more selective, and both of them include his relatively higher-quality peer-reviewed publications compared to Google Scholar. The author's scientific outputs compared to WoS.

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