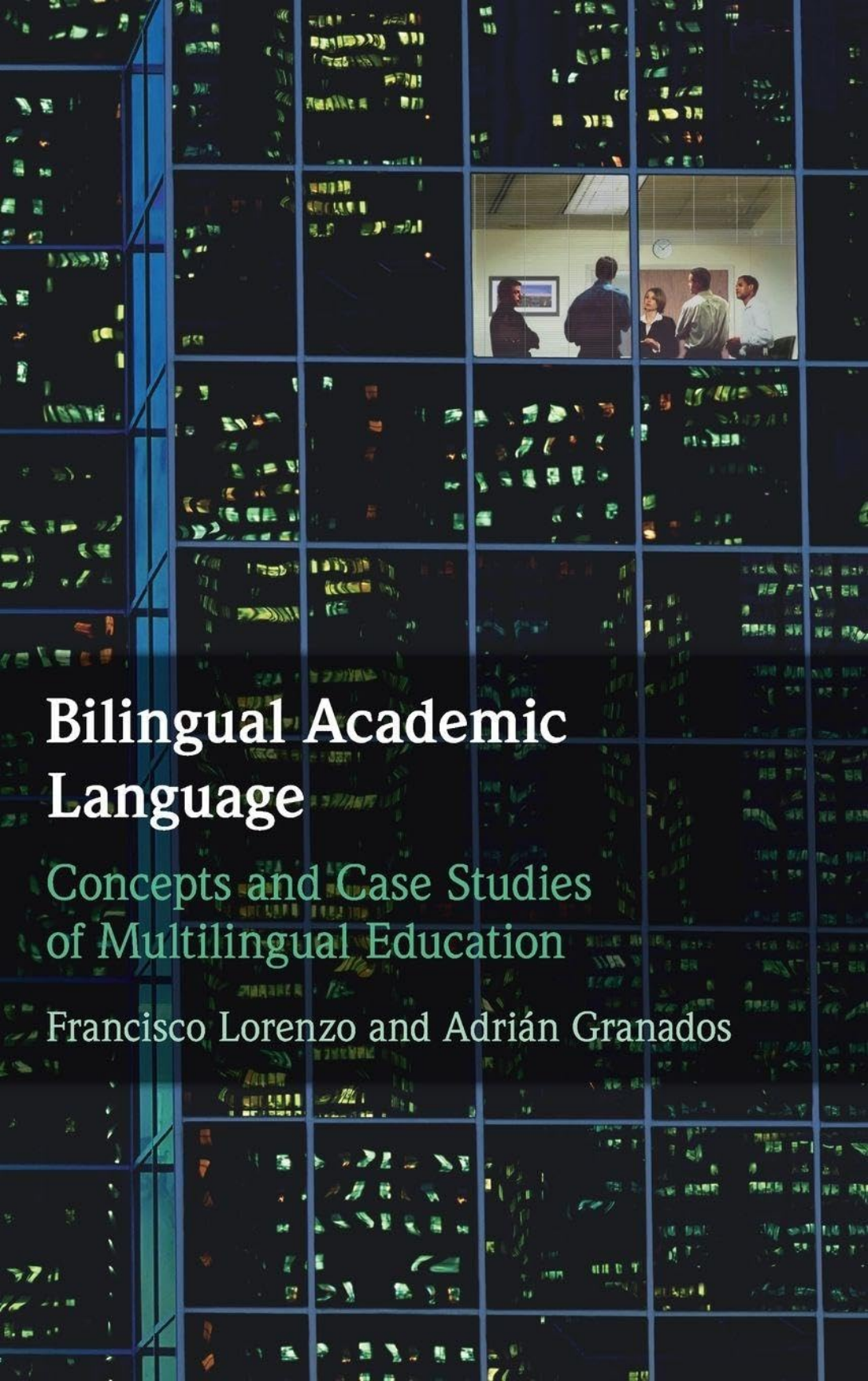

# Bilingual Academic Language

## Concepts and Case Studies of Multilingual Education

Francisco Lorenzo and Adrián Granados

# BILINGUAL ACADEMIC LANGUAGE

The development of academic language in bilingual contexts is under-researched, especially at the critical point of adolescence. This insightful book addresses the onset and development of literacy in bilingual contexts, through a series of original case studies. Covering CLIL, EMI, and bilingual/multilingual education, the authors examine the evolution of the lexis, syntax and discourse in bilingual learning over the years of adolescence and early adulthood at school. Qualitative and quantitative research are integrated, including corpus research, with excerpts from learner corpora; computational linguistics, with metrics from language software tools; and case studies, with analyses of learners and programmes worldwide, including Refugee, Asylum-Seeking and Migrant (RASM) students. It also provides a description of disciplinary language, in domains like science, mathematics, and history in multilingual education. Finally, it delves into language policy and critical linguistics, connecting language description with educational deficits.

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CAMBRIDGE
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Shaftesbury Road, Cambridge CB2 8EA, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781009631433

DOI: 10.1017/9781009631464



When citing this work, please include a reference to the DOI 10.1017/9781009631464

First published 2025

Cover Image: Greg Pease / Stone / Getty Images

*A catalogue record for this publication is available from the British Library*

*A Cataloging-in-Publication data record for this book is available from the Library of Congress*

ISBN 978-1-009-63143-3 Hardback

*To Antonio, Lolita, & la Tere, free bilinguals.*
F. L.
*To the people who gave me language.*
A. G.

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# *Preface*

Multilingualism is spreading far and wide as a result of constant travel and global networks. Now as in the past, when communication involves face-to-face small talk, it is possible to make oneself understood with limited but effective interaction. In the Middle Ages, Mediterranean seafarers of different nationalities communicated with each other in alternating tongues or in a handy combination of Romance languages while carrying out their daily duties aboard ship (Operstein 2017). In the nineteenth century, trade between China and Europe owed its success to the creation of a convenient pidgin language, an expedient mixture of basic English language structures and vocabulary borrowed from the languages spoken in harbours (Holm 2000). However, multilingualism also encompasses technical, academic, and other forms of sophisticated communication. The Renaissance painting *The Tower of Babel* shows the havoc caused by labourers speaking to each other in their own tongue: arches built perpendicular to the sloping ground collapsed, building stages were reversed, and the tower's lower levels were still incomplete when work had concluded on the upper ones. Language needs to be concise in academic communication. The language used in knowledge production and transfer requires exact words, a clear style, and a predictable structure, in a nutshell, denotation: language that transcends the failings of personal interpretations and polysemy, a sort of perfect language whose quest has always been one of the intellectual endeavours of Western philosophy (Eco 1997).

Academic language is a core skill in all education systems, if not their *raison d'être*. The language of choice is often the most prevalent national tongue: English in the Anglophone world or French in the Francophonie. However, cross-border work mobility, asylum seekers and migrants at school, and the globalization of communication imply that advanced literacy in a second language (L2), or biliteracy, is now necessary. Be that as it may, biliteracy is nothing new. For the Romans, the language of technical

culture was Greek, which they believed to be more rational and truer to reality (Jonker et al. 2021).

This book is about the consolidation of biliteracy development in the school setting. Many educational initiatives have pursued the development of this skill, albeit under different labels: 'content-based' in the American charter school system where this skill is developed in a number of specific courses taught in a socially significant language; 'CLIL' in the European system where multilingualism was introduced in schools under the slogan 'Languages are for all'; or 'EMI', which openly embraces the current lingua franca in tertiary education. In addition, there are de facto bilingual programmes and remedial educational initiatives aimed at promoting the academic L2 skills of RASM (Taylor and Marchi 2018), sometimes through reckless sink or swim systems in which the home language of students is simply ignored.

In all these initiatives, students need to develop language at all levels, including grammar, terminology, pragmatic rules, and genres. Addressing all these situations, this book resolutely contends that the acquisition of advanced academic language skills is similar across languages and social multilingual settings. The book starts with a foundational chapter that explores disciplinary literacy. The language used for knowledge acquisition is characterized by a higher level of abstraction, formal complexity, and grammatical density, as well as by the occurrence of specialized terms and concepts which differ depending on the content area (Achugar and Carpenter 2014; Schleppegrell 2004). With their specificities, all disciplines constitute a language of schooling, like, for instance, the language of maths or that of history, of which teachers often lack formal knowledge and awareness. Official curricula that consistently embed language content in the disciplines are very few and far between. Quality bilingual teaching should be based on an adequate conceptualization of academic language that affects lingua franca, migrant, and national languages. In light of this, Chapter 1 provides a thorough description of academic language in formal bilingual learning contexts: its scope, properties, and the most influential theories of disciplinary literacy in the case of multilingual students.

Owing to the fact that bilingual disciplinary literacy develops gradually as personal cognition matures, a developmental approach to academic language consolidation is required. Chapter 2 describes bilingualism not as immobile but in motion. Precedents do exist, ranging from the seminal work *Life with Two Languages* (Grosjean 2001) to the exploration of school narratives in different grades (Christie 2012), from the study of cross-linguistic development (Durrant et al. 2021) to the functional description

of discursive aspects (McCabe 2021). This is further explored here during the critical stage of adolescence, marking the rite of passage from 'learning to read' to 'reading to learn' and providing a stepwise characterization of the academic interlanguage of bilingual students, with its thresholds, stages, and components. Schools are the natural setting of academic language, an issue that is addressed in this chapter at a moment when international student assessment tests have detected a drop in advanced language competence, a form of language attrition (Mullis et al. 2023). Moreover, artificial intelligence (AI) is now generating texts with an exceptional tone and structure whatever the genre, which can then be reproduced in an L2 at the touch of a button. Even though it would be an exaggeration to contend, as some have, that AI is hacking the operating system of human civilization, the ability of bots to create texts is indeed supreme (Harari 2024).

The overview of biliteracy development across the lifespan performed in Chapter 2 is supplemented by the next three chapters, which follow a more quantitative approach, dividing language development into three linguistic levels: lexis in Chapter 3; syntax in Chapter 4; and discourse in Chapter 5. Complex dynamic systems theory in language learning views language as a set of interconnected subsystems (e.g. the syntactic, phonological, and lexical kind) that interact with and influence each other. Furthermore, the nature, orientation, and strength of these influences mutate during an individual's life, being affected by variables such as age, proficiency, and the number of languages spoken. Also, these variations are not only intra-individual, for language is also viewed as a complex adaptive system shaped by the social interactions of the members of a language community. Given this complexity, these chapters offer a comprehensive overview of each one of the linguistic levels under study and clarify some methodological aspects, such as the conceptualization and measurement of each construct. Likewise, the chapters describe the differences and similarities between the monolingual and bilingual mind in the acquisition and organization of lexis, syntax, and discourse, respectively. Lastly, the evolution of bilingual academic language is reviewed for each of these dimensions, with special attention to lexical richness (Chapter 3), syntactic complexity (Chapter 4), and text genres, discourse functions, and cohesion (Chapter 5). These language descriptions are always based on real classroom samples as examples of that evolution.

Biliteracy in the classroom implies the personal construction of language for each discipline. History, often chosen as one of the courses taught in an L2 in official curricula, is a subject in which content is only expressed in the written word, unlike maths, for instance, in which numbers form a

language per se, and physical education, in which body language helps to make sense of the context. That is why Chapter 6 investigates the peculiarities of historical bilingual discourse, fraught with political implications, whose interpretation is based on the ideological stereotypes of the reader (Lledó 2011).

*The Radetsky March*, a monumental novel recounting the transition from the modern to the contemporary age, describes the main character's concern that the history textbooks of the period have not done justice to his heroism on the battlefield. Bias in history textbooks is partially achieved through grammatical choices which affect voice, tense, or causality, among other discourse functions. Linguistics has described the effects that this deviant language can have on monolingual and multilingual learners, for whom the consolidation of advanced language skills takes time. Some of the features of historical literacy are reviewed in this chapter, which also presents the insights of critical linguists who assert that students who need to develop the language of schooling in an L2 are being prevented from constructing their own account of events (Coffin 2006a; Schleppegrell and Oliveira 2006; Zwiers 2008).

To conclude, Chapter 7 establishes bilingual education in the wider context of critical applied linguistics, for bilingualism can be described in relation to cultural diversity, social change, and social conflict (Pennycook 2004; Piller 2016). Its alleged elitism ranks high on the list of burning issues in the ongoing debate. In this respect, a name oozing a reassuring sense of British authenticity immediately springs to mind, but which could not be more misleading. Far from the lush meadows of Scotland, The Highlands School is to be found nestling among the sun-scorched olive groves of Southern Spain. Of course, it is just one of the many centres for the upper classes in cities worldwide (Madrid, Bogota, Casablanca, etc.), a testament to elite bilingualism as ancient as the advent of the written word.

A current understanding of capital assumes that knowledge and skills are central to production growth and the reduction of social inequalities at both national and international levels. But knowledge is socially determined and deeply affected by educational policies and priority access to training and qualifications (Piketty 2014:40–42). This applies to languages as much as to any other aspect. On the other hand, languages are not only a resource but also a token of social distinction and, therefore, a factor of discrimination which, based on basic human traits such as gender or race, is unacceptable. But as language is constructed as a changeable attribute that defines personal belongingness and allegiance, language

discrimination is allowed for the simple reason that the language of choice is in theory a personal decision (Leeman 2014).

All in all, Chapter 7 considers academic language from the perspective of sociological principles relating to human rights: linguistic deficit theory, the unequal distribution of bilingual resources, and cultural reproduction through bilingual schooling. These concepts are fleshed out with case studies of multilinguals from all over the world, which are now famous or notorious in the field of language studies and whose purpose is to illustrate the aforementioned principles. Language construes the ideology of society through the legitimation of different forms of communication (Christie 2012). It is the privileged who decide on what counts as literacy, and full literacy now implies the command of languages at academic levels: a system of opportunities, means of production, and modes of representation (Whittaker, O'Donnell and McCabe 2006).

Within this theoretical framework and with this conceptual stance, the book provides a thorough description of languages and bilingual acquisition.

We would like to express our gratitude to Tom Morton and Thomas MacFarlane for their insightful thoughts and comments on the first draft of this book. Our gratitude also goes to Julia Hüttner for her ongoing support through the COST Action CA21114 (CLIL Network for Languages in Education: Towards bi- and multilingual disciplinary literacies). We are equally grateful to Rebecca Taylor for her expert editorial guidance and to the anonymous reviewers for their valuable feedback. This research has been funded by the Spanish Ministry of Science and Innovation (research grant ref. PID2022-139685OB-I00).

CHAPTER 1

# *Academic Language in Bilingual Education*

## 1.1 Introduction

Language learning is usually associated with the early years of life when it gradually evolves from babbling to uttering, while parents and carers struggle to figure out the real communicative intentions of isolated and often poorly articulated stretches of sound. Known as the holophrastic stage, a word in a toddler's speech may have multiple meanings, only revealed by insistent repetitions and requests for clarification, which usually manage to reveal the real purpose of the utterance. Thanks to the descriptions that have been made of its components, language development in infancy, from the gradual growth of vocabulary to the onset and refining of syntax, has been thoroughly researched (Ambridge and Lieven 2011; Elliot 1981). Be that as it may, linguistics has expanded the period of language development to include successive stages encompassing early childhood, middle childhood, early adolescence, mid-adolescence, and adulthood. In fact, this development occurs in all life stages and only declines in old age (Christie 2012; Durrant et al. 2021; O'Dowd 2012).

The language growth continuum starts with the variety that speakers use in their close circle, which then gives way to a 'space–time synchronicity'. It is only in the second stage that language evolves with the newly acquired ability to refer to events transpiring earlier or later in time and further away from the speaker, namely, a 'space–time asynchrony'. This is also known as 'here and now', as opposed to 'there and then', language.

An imperative sentence such as 'stand closer to this ball' displays all the features of 'here and now' language:

- 'Here and now' language is an interactional variety used mostly in conversations and usually involves other speakers.
- It depends on the context and only makes full sense in that in which the utterance is made, implying a previous knowledge of the speaker,

the object itself, and its surroundings. Simply put, information does not make sense without a context.
- It relies on information sources other than language, including the visual kind in which the position of the speaker and the listener determines the actual meaning.

In parallel to the former distinction, there is the gradual transition from 'learning to use language' – controlling the mechanisms of the system – to 'using language to learn' – employing communication tools to acquire new knowledge. The latter relates to the *raison d'être* of academic language, namely, knowledge production and transfer in the school setting.

Academic language owes its existence to the fact that complex social activities, like teaching students, demonstrating learning, conveying ideas, and constructing knowledge, rely on language features that characterize a particular style (Hyland 2011:174). Academic language traits have tended to be associated with a higher level of abstraction, complexity, lexical density, and grammatical intricacy (e.g. Achugar and Carpenter 2014; Schleppegrell 2004). The existence of a set of core language mechanisms is similar across all fields, and these mechanisms occur at all sentence and discourse levels.

Prior to an adequate characterization of academic language, which will be provided in the following chapters, the following preliminaries need to be considered:

- *The components of academic language*. Academic language affects all language levels: lexis, syntax, and discourse, while employing more uncommon words, more complex structures, and more specialized genres. Words like 'integer' in maths or 'colony' in history, structures like third conditional types in irrealis discourse, and genres like philosophical dialogue are essentially academic and thus more likely to appear in scholarly or institutional contexts (for syntax in academic language, see Bhatia 2002; for vocabulary, Nation 2006; for genres, Peters 2008).
- *The acquisition of academic language*. The acquisition of academic language structures is governed by the rules emerging from the analysis that learners perform on the distributional characteristics of the language input. These rules are either structurally or cognitively complex, and consequently, their acquisition is demanding and time-consuming. Advanced language structures are firmly linked to those types of academic content that are more susceptible to certain constructs. Multidimensional studies have consistently described register variation in different text types based on the occurrence of diverse structures (Biber et al. 2006).

- *The cognitive nature of academic language*. Academic language is more cognitively taxing than the instinctive language of casual conversation. Consequently, it evolves as speakers find themselves in new communicative situations requiring greater precision and denotation or when events need to be described in greater detail. The production of narratives starts as personal storytelling early in life, before evolving into an account of events that the subject has not physically experienced, namely, the ability to represent the world cognitively and symbolically (Tomasello 2005). Narrative structure changes apace with cognitive development.
- *The disciplines of academic language*. Academic language relates to disciplines, with each academic field, from maths to history, and at a more specialized level, from numismatics to zoology, shaping it in its own way. Even if there existed a grammar of a language applicable to all disciplines, not to mention a universal grammar, the core structure of all human language, it would still be possible to talk about the grammar of maths or history. The fact remains that there are certain functions that are inherent to some disciplines. For example, numbers are added, subtracted, and multiplied in maths. These are disciplinary functions that have to do with language (for maths, see Barwell et al. 2016; Prediger et al. 2018; for history, Lorenzo 2017; Van Drie et al. 2015; and for science, Lemke 1993).
- *The designation of academic language*. Different concepts are employed to refer to academic language: languages of schooling, languages of the disciplines, and the cognitive academic language learning approach (Uccelli 2023). Other designations include a social element, distinguishing between vertical and horizontal discourse to represent the layered structure of society since both language and social structures show consistent patterns of variation between a person's social position and the forms, uses, and styles of language they employ (Bernstein 2000). This vision frames the acquisition of academic language in the educational tradition of progressive democratic and inclusive education (Snow and Uccelli 2009).

## 1.2 A Social Description of Academic Language

Language acquisition is described as a socio-cognitive process, a mental construct that corresponds to communication needs determined by external factors, namely, their contextual determinants. The context – technical, institutional, or professional – determines the way in which academic

language is constructed (Housen and Kuiken 2009). A contextual approach to academic language, therefore, needs to consider the following elements to research language in society, which conform to the classical acronym 'SPEAKING' (Hymes 1972; see also Flowerdew 2014; Hyland 2011):

- *Situation*. The spatio-temporal constraints of academic social interaction place particular demands on language, regardless of whether it is being used in atriums, where pre-Socratic philosophers compared views on the nature of things, or in aristocratic salons where *mademoiselles* received intellectuals in pre-revolutionary France during the Enlightenment (Cooper 1990). The usual setting for formal education is now the classroom, lecture hall, seminar room, or alternative real or virtual venues where it is possible to engage in intellectual intercourse in an orderly fashion. In other words, academic discussions are subject to a conventional time frame that is rather inflexible as to its duration.
- *Participants*. Scholars form part of very exclusive networks at a time when clannishness is rife, for, as with many other collectives, they are fully aware of their prestige. They have an acute sense of belonging that makes their language interaction extremely conventional, predictable, and alien to outsiders. Accordingly, scholars may be standoffish, for which reason the social distance between speakers is usually maintained and tends to revolve around the recognition of experts who are held in high esteem for their pursuit, if not their possession, of the truth.
- *Ends*. The main purposes of academic interaction are research and teaching, that is, new knowledge production and transfer. As a matter of fact, knowledge is such a core element of modern life that the term 'knowledge society' has been coined to describe it. The purpose of academic communication is more often than not instrumental, employed for describing a product (e.g. a vaccine) or a process (e.g. pasteurization). Knowledge production requires the existence of truth conditions according to which an event is enacted. The purpose is sometimes speculative, with the credibility of the arguments deployed relying on the logical elaboration of discourse. Whatever the purpose, academic discourse aspires to truth; even when it is subjective, it claims to be a faithful reflection of reality. This can even be said of speculative knowledge, hence its etymology, *speculum*, the Latin for mirror.
- *Acts*. Acts relate to content, and the academic kind is precisely disciplinary, like, for instance, the scientific, mathematical, or musical kind. Each discipline has canonical content that forms a syllabus that

has to be learned. The information load is high, and the discourse and linguistic content are extremely dense. Academic discourse requires congruent representations for it involves the detailed description of complex events and procedures, which, in turn, call for equally intricate discourses to describe them.

- *Key*. Attitude is relevant to the composition of discourse, and the academic kind is always employed in earnest. As true actors in knowledge production, scholars reveal new knowledge. Academic discourse addresses matters of serious concern and can even make insignificant facts seem meaningful. Any trivial issue addressed in academic discourse earns respect. Academic information also prioritizes facts over authors, thus determining the use of structures, like passives, and pronoun systems.
- *Instrumentality*. Given its broad diversity, academic language comes in all forms of written and oral communication, whether it be machine-mediated or face-to-face. In the classroom, non-verbal language is central to knowledge transfer and shapes the expectations or involvement of audiences. In the lecture hall, speakers may declaim or use rhetorical devices to cause an effect on them.
- *Norms*. All aspects of academic interaction are conventional, information being organized systematically and leaving little room for personal inventiveness. There is a special awareness of the forms of discourse that should be respected because texts need to be autonomous, without any situational support (exophoric references) that may help to understand them. As a result, discourse is tightly constructed and fixed. Interaction rules are well thought out and include time for questions, sitting silently, or applauding.
- *Genres*. Genres are usually classified according to disciplines and subjects. Again, their components in the form of rhetorical devices are non-negotiable. Academic genres are often sophisticated versions of other more common ones: bedtime stories and historical accounts – a highly academic category – are narratives with the same macrostructure, which of course includes peculiarities adapted to their specific communicative intent, in this case either for sending children to sleep or for composing a great national epic.

These contextual aspects allow academic language to organize information (Snow and Uccelli 2009) in a number of ways:

- *Conciseness*. Academic information needs to be concise and to the point, for its intention is to offer a faithful reflection of the

phenomenon at stake. Truthfulness requires accurate information, and accuracy depends on how faithfully the events described are reflected. In this task, the subjective intervention of scholars is secondary for they become mere observers (observer's fallacy). Metaphorical language is often used to illustrate complex phenomena in images, like, for instance, the double helix to describe the structure of DNA or financial necrosis to portray economic strife.

Nevertheless, overusing metaphors is regarded as misleading and frowned upon as unsustainable leaps of logic. As scholars share the same mental frame, when expressing themselves, they assume that their interlocutors also do and understand the same image, definition, or description of the situation or object in question in a similar manner. Texts are consequently coherent for the mere fact that all the interlocutors' knowledge is underpinned by the same concepts and theories, which makes their discourse concise and to the point. As much information can easily be left out, adapting that discourse to the vernacular is almost an act of translation.

- *Density*. As the aim of academic language is to say as much as possible in the fewest possible words, information is packed into small, high-density units, with whole sentences being condensed into propositions or phrases. This concentration tends to produce nominal structures. Nominalization is a common resource for freezing information in a process similar to packaging: verbs disappear from the sentence, their meaning being taken for granted, and readers are left with the chore of interpreting all the gaps that the missing words have left. In this vein, a violent coup d'état may be evoked in history as 'the rising'. Similarly, in a highly elliptical process in which agents are omitted as the actors or subjects of verbal actions, the procedure whereby couples hire a woman to carry and give birth to their child is called 'surrogacy'. This obviously puts pressure on the cognitive resources of readers because they are obliged to opt between several implicit meanings. Background knowledge and sharing common ground are essential for comprehension.
- *Recursion*. Recursion – embedding language structures in others of the same kind in a dependency relationship – is the core mechanism of human language. The fact that units can depend on others, which in turn depend on larger ones in a never-ending process makes language infinite. The multiple levels at which recursion functions in language are established by the human capacity to register information in the short-term memory, which needs to be readily available to understand

the full meaning of a sentence. The extent to which humans understand subordination – propositions that depend on others to express logico-semantic relations like causality, circumstance, and contrast – is limited to a number of levels in such a way that readers must make a concerted effort not to lose the thread. Academic discourse engages in complex processes requiring recursion, and therefore, sentences as language units with a full meaning include propositions arranged in structured layers of meaning that are hard to process.

- *Incongruence*. The representation of technicalities and abstraction often makes language take atypical forms, that is, the way that academic language chooses to map onto real-life processes. This makes processes (actions represented by verbs) take the shape of things (entities represented by nouns). The conventional word order is also altered to facilitate reading processes and advanced cohesion mechanisms. The fact that themes and rhemes change place seems bizarre to readers, who often need to reread sentences to gain a clear understanding of their meaning, unless they are proficient in understanding different forms of information organization. Therefore, representational congruence – 'first things first' – is not always followed by scholars. Even though the concept of incongruent grammar sounds like a contradiction for the intrinsic logic of any grammar, the academic kind can defy the natural cognitive order.

All considered, no wonder that academic language is complex. Complexity affects readability for the simple reason that the more convoluted sentences are, the more cognitive resources will be required to interpret them correctly, and the same can be said of less frequent words. It is essential to understand that language competence depends on being accurate (error-free), fluent (spoken at the right pace), and complex (capable of expressing complex thoughts). Notwithstanding the fact that conversational language is also convoluted in its own right, academic language expresses its complexity in the intricate organization of structures.

## 1.3 Academic Language in an L2

The aim of academic language is to offer a faithful reflection of reality, including that of the outside world, the imagined world, the inside world, or whatever information representation resulting from the inner workings of the human brain responsible for linguistic creation (Eagleman 2012; Pinker 2007). To achieve this, advanced language functions are needed. In academic

language, a simple function like storytelling evolves into a metanarrative; joking, into educated sarcasm; and ranting, into impersonal dissent. The cognitive discourse functions (CDFs) appearing in these advanced communicative situations can be narrowed down to seven main ones that illustrate the cognitive organization of experience in language. Academic language needs to categorize, define, describe, evaluate, explain, explore, and report (Dalton-Puffer 2007, 2013). These functions require a firm grasp of language competence, the lack of which seriously affects expression, not an unusual circumstance when the language in use is an L2.

L2 acquisition studies have found that in all the processes involved in L2 production – conceptualizing, formulating, and parsing – cognitive resources are placed under greater pressure than in a mother tongue (Levelt 1993). Academic situations in an L2 may be stressful for students owing to the likelihood of communication breakdown caused by insufficient language resources, message abandonment on the part of the speaker who fails to construct a meaningful discourse, or content reduction, with the ensuing simplification of ideas and layers of meaning. The composition mechanisms used for the construction of content are affected by the fact that an L2 is being used instead (Dörnyei and Kormos 1998; Poulisse and Bongaerts 1994).

- *Processing*. Conceptual processes seem to be inhibited in an L2, with less attention being devoted to shaping ideas. As a result, L2 texts can be rhetorically less well developed. Indeed, less rhetorical content is produced in an L2, and less attention is devoted to global interpretations of texts. Moreover, there is a more localized rereading of sentences and a more frequent use of communication strategies.
- *Formulating*. Smaller chunks and fewer words per minute are produced in an L2. Words are less easily accessible, and searching for them and considering their alternative placements and forms in the context requires more memory resources. This signifies that less attention is paid to the execution of the message, which often results in deficient production, with more errors than in an L1.
- *Revising*. More revisions are necessary when sentences are composed in an L2, which leads, in turn, to more substitutions and deletions of original formulations. Revisions can affect conceptual, linguistic, and typographic aspects, while also operating above or below the word or clause with the subsequent additions, revisions, or substitutions to which this can lead in texts.

All in all, more cognitive resources are devoted to language processing when academic communication takes place in an L2. Even though a full

grasp of the mother tongue is always unrealistic, an L2 requires higher attention levels and the optimization of the limited resources available for self-expression when language competence levels are low.

The extent to which content learning is affected by insufficient language competence is certainly a fundamental cause of school failure. Academic language is, in fact, a decisive factor in content acquisition. Proficiency in the language of schooling has a greater impact on achievement goals than general reading competence and other variables that have been addressed in the general debate on L2 acquisition, such as the age of first contact with the L2 and immigrant or socioeconomic status (Moschkovich 2015; O'Halloran 2015).

In relation to the lack of competence in the vehicular language, educational linguistics has formulated the concept of 'L2 instruction competence', which precisely establishes the level of expertise that facilitates learning in the less dominant tongue (Rolstad et al. 2005). This construct has two factors: the language level and command of advanced CDFs. An important finding in this regard is that higher-order cognitive factors that contribute to proficiency in an L2 are closely related to L1 proficiency. The high correlations between proficiency scores for an L1 and an L2 show that the former is a very fertile breeding ground for the latter (Feinauer et al. 2017; Granados et al. 2022).

It was in this context that a core distinction for understanding biliteracy was formulated. Two aspects of language use are considered in this regard: basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP) (Cummins 2008, 2021).

Basic interpersonal communication skills are used to describe events occurring close to the speaker in the present, also referred to earlier as 'here and now language'. In this respect, language as a system does not need to be self-sufficient since the information that it provides also arrives through other channels like body language and other visual stimuli that help to understand words. Bilingual research has offered a description of this communication construct. Basic interpersonal communication skills develop during the first five years of life in the innermost circle of socialization, usually in a close-knit network of family members, and are by no means negligible: an adequate control of the phonological system as a whole to convey messages, several thousand words for production which double in number as passive vocabulary, several hundred grammar rules, and the macrostructure of the major discourse categories (narration, exposition, and argumentation) in its basic form. This enables individuals to tell anecdotes and to engage in casual conversation (Ambridge and Lieven 2011; Elliot 1981).

Basic interpersonal communication skills are the gateway to natural language, but this conversational fluency has serious limitations for major functions of individual expression, like knowledge storage and transfer.

As opposed to BICS, CALP takes longer to achieve. Up to twelve years are needed to learn to perform very advanced academic functions, like, for example, describing and understanding critical information in a history essay or debunking scientific hypotheses. To this end, it is necessary to generate an active and passive vocabulary of around 40,000 words, many of them arranged in specialized semantic fields relating to precise disciplines or professions, and the control of intricate grammatical structures with long-term dependencies, which give the impression of a very tight textual fabric in the form of a well-structured but fragile house of cards (Laufer 1998).

Of course, the existence of a sharp divide between BICS and CALP has been the target of some criticism, for a clear-cut boundary between the two terms is not supported by L2 acquisition theory (for a full presentation of the theory, see Cummins 2021; for critiques, Rolstad 2017). Critiques aside, BICS/CALP bring to light a major oversight in multilingual education: the appropriate use of conversational language (playground language) is wrongly interpreted as proficiency in aspects essential to knowledge acquisition, storage, and transfer. This renders diagnosis and assessment of language proficiency imprecise. In Cummin's own words, '[…] the conflation of second language (L2) conversational fluency with L2 academic proficiency contributed directly to the inappropriate placement of bilingual students' (Cummins 2008:73).

The fact that high levels of academic proficiency are only reached after an average of seven years after the first contact with the medium of instruction, as opposed to only two years for conversational language, calls for a proper approach to advanced language in the classroom in contact with the content used for learning. Indeed, a lack of understanding of disciplinary language demands is at the root of serious educational, cultural, and social deficits, an issue addressed in the following chapters, especially Chapter 7. When conversational skills are measured with multilingual parameters in tests like the Bilingual Syntax Measure and the Basic Inventory of Natural Language, educational success is not anticipated.

The sociology of language has always pursued a formulation of language that adequately represents the extent to which individuals master the ability to reflect reality in its complexity through speech. In fact, the BICS/CALP distinction has been present in the disciplines with dyads like social versus ideational language, primary versus secondary discourse, and restricted versus elaborate code (Bernstein 2000; Halliday and Hasan 1976).

### 1.3.1 Contextual Determinants of Academic Language in an L2

The effects of language competence on formal learning in multilingual classrooms were first represented by a quadrant diagram (see Figure 1.1). In the four quadrants formed by two axes, classroom tasks can be represented according to their language demands (Cummins and Swain 2014). The horizontal axis corresponds to contextualization, which conveys the idea that the existence of an ample and solid context (verbal and visual) helps to process new language information. Tasks can be 'context-embedded' or 'context-reduced'. For instance, building a puzzle in pairs is a more tangible, hands-on, concrete, and therefore contextualized task than writing an op-ed piece for an international newspaper on a matter of conventional interest or making a classroom presentation on a topic included in the history curriculum. Notwithstanding curricular content, when contexts are less well defined and referents are more abstract and occur further away in time and space, background knowledge is less solid. This clearly relates to the amount of new information that needs processing and the extent to which it matches prior knowledge.

On the other hand, the vertical axis corresponds to the language demands of formal tasks. Language processing places demands on mental resources and calls for the implementation of cognitive and metacognitive strategies. Copying out a text – focusing on a sequence of words – requires less language elaboration than summarizing it – storing information in the working memory, decision-making on information relevance, or readjusting all

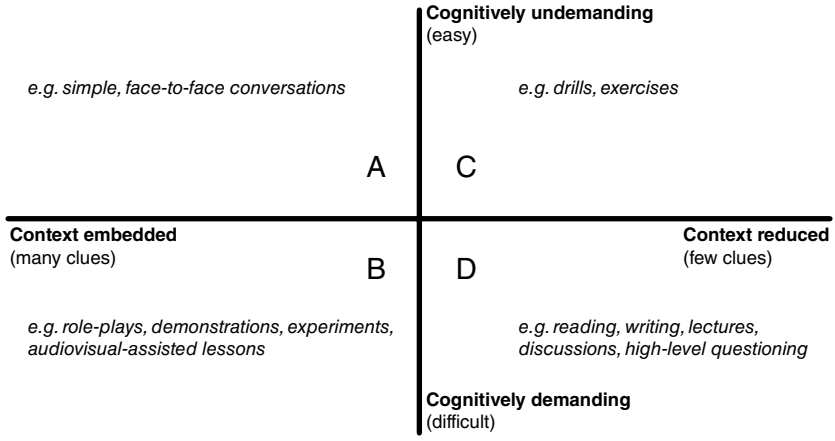



Figure 1.1 Cummins' quadrant (Cummins 2000)

types of composition parameters. Language interaction in a playground game of hide and seek is less demanding than note-taking in a conference room. As shown in Figure 1.1, the crossing of the two axes results in four quadrants, each with its own linguistic peculiarities.

The quadrant diagram currently relates to the BICS/CALP distinction as tasks in Quadrants A and B tend to be more balanced for posing an optimal challenge that facilitates engagement and language-level matching. The tasks in Quadrant D are more communicatively demanding, thus requiring a higher level of academic expertise, whereas those in Quadrant C correspond to exercises and drills in which the lack of a meaningful context and the deployment of the same cognitive strategies lead to a certain degree of mechanical performance. Large amounts of type-C tasks discourage engagement and active participation (Coyle 2006).

The ultimate aim of the BICS/CALP distinction is to understand school success and educational promotion or their absence owing to a lack of language competence. The underlying governing principle is that language deficits give rise to the educational kind and, in a knock-on effect, further cultural deficits. This often implies that education systems ignore the linguistic causes of learning deficits while creating low academic expectations for multilingual students, which are often self-fulfilling prophecies. Whereas education attaches great importance to the early diagnosis of deficits, insufficient academic language competence often goes unnoticed.

### *1.3.2 The Effects of Interdependence on an L2*

As a logical follow-up to the study of context, bilingual research has attempted to determine the actual level indicating the feasibility of content acquisition in an L2 in bilingual settings, which involves the formulation of two hypotheses: the interdependence hypothesis and the threshold hypothesis. The interdependence hypothesis claims that the progress made in one language – usually the mother tongue – is reflected in the full language repertoire of an individual (Liew 1996). This was once formulated as follows: 'To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly' (Cummins 1981:29).

Research has shown that there are similarities in development across languages, which proves that academic language evolves concurrently irrespective of its actual instantiation in individual tongues, at least during

mid-adolescence and for some language dimensions. For instance, language units like phrases and sentences grow longer at the same pace in an L1 and an L2 and syntax becomes more complex in all the languages spoken, as with aspects of lexical performance which are considered further on (Lorenzo et al. 2017; Granados et al. 2022).

The simultaneous evolution of an L1 and an L2 is illustrated by a two-tipped iceberg, presenting itself as distinct entities on the surface but forming a singular, interconnected mass of ice upon closer examination from underneath. This appropriate metaphor highlights the fact that the cognitive network sustaining language competence is common across the board to the point that individual languages are mere derivations of the same language acquisition process. The generative inspiration of these hypotheses is clear: all interlingual differences – phonological systems, lexicogrammatical features, and so forth – are grounded in cognitive commonalities that make individuals more receptive to the acquisition of additional languages.

The educational implications of this theory support the inclusion of the mother tongue for all learners with an eye to facilitating the subsequent acquisition of CALP in the socially dominant language at higher levels of schooling. The sudden immersion of learners in an L2 environment has been described rather dramatically, such as the claim that it can create a 'sink or swim' situation in which students are likely to drown in words. This is also the case with the expression 'bilingualism with tears', which exemplifies the anguish that a lack of understanding can cause students (Cummins and Swain 2014).

Alternatively, bilingual models aspire to achieve a balanced biliteracy with all the benefits that this entails (the so-called 'bilingual edge'), which includes both linguistic (an enhanced awareness of form-function matching in words, a greater tolerance to ambiguity, and a greater ability to ignore irrelevant or redundant language input) and cognitive bonuses, like better management of higher-order cognitive strategies (Bialystok and Martin 2004, Bialystok 2017).

On another note, the threshold hypothesis addresses the need for a solid language baseline for the purpose of enabling learners to deal with new content in an L2. That baseline is represented as a cognitive and linguistic threshold, beyond which transfer from an L1 to an L2 accelerates and learning is enhanced (Feinauer et al. 2017; Hulstijn 2011; Yamashita and Chang 2001).

The representation of the language baseline as a threshold suggests, therefore, that a low baseline hinders literacy development, content learning, and educational success. Over the years, the original proposal has been

the target of criticism on account of its description of minority individuals as deficit-laden and, moreover, for being mostly theory-based. It is true that current research has not provided a complete linguistic description of the threshold, namely, the forms and functions that need to be present for learning content in an L2. A full description of the correspondences between the knowledge structures of disciplines and their respective language forms, or in other words a full account of disciplinary literacy in maths, history, and other subjects, is needed for a proper understanding of thresholds (some steps have been taken at a pan-European level in Lorenzo et al. 2024). The intention of notions like scaffolding and sheltering appearing in the literature on bilingualism is to accept that the presentation of academic content needs to be language sensitive so as to encourage students to focus on the lexicogrammar beyond their grasp in class, which would gradually enable them to access new knowledge, while easing the cognitive load characterizing learning.

The threshold notion is also crucial for the simple fact that threshold matching establishes the future distinction between subtractive and additive bilingualism. The full acquisition of the advanced language of subtractive bilinguals in any tongue is limited because they lack the formal education necessary for the gradual development of advanced language and content. In contrast, additive bilinguals reap the benefits of a well-balanced control of the two languages fully developed for all uses. If L2 immersion needs to be threshold sensitive, this implies that it is necessary to explore the ways in which language is expressed in the classroom, that is, bilingual classroom discourse.

## 1.4 Bilingual Classroom Discourse

An L2 classroom can be a hostile environment unless the language employed in it converges with the interlanguage of students. A fundamental principle in L2 studies is that comprehension only occurs a notch above the actual language level of an individual (the classical comprehensible input hypothesis). According to the interaction hypothesis, the second fundamental law governing bilingual research, acquisition is mediated by the selective attention that learners pay to discourse and this happens more often during negotiation for meaning, when one party attempts to interpret the actual message with communication strategies like requests for clarification or for reformulation of the original content (Long 1996:414).

Language adjustments that facilitate negotiation for meaning have received many labels in different bilingual traditions, including sheltering,

scaffolding, and integrating. These three concepts revolve around the precarious situation of emergent bilinguals in a foreign discourse setting. In natural language, exchanges in which there is an imbalance in language competence, as in mother–child discourse ('motherese'), some discourse adaptation is provided in the form of adjustments. Language adjustments have foregrounded the cognitive basis of very influential theories of L2 teaching skills; that language input needs to be understood and that language output should meet the demands of the communicative act (MacSwan and Rolstad 2003).

There is a consensus that classroom discourse, which has been studied from many different angles, constitutes a form of communication that differs somewhat from real-world discourse (Dalton-Puffer and Smit 2012; Hatch 1992). Although the bilingual classroom discourse is an extension of that of the general classroom, its peculiarities stem from the crucial fact that it is content-centred, namely, that the presentation of information is related to a discipline. Consequently, bilingual classroom discourse differs in the following aspects (Jakonen and Morton 2015; Llinares et al. 2012):

- *Distribution of talking time*. In a teacher-centred approach to classroom talk, most of the talking time is taken up by the teacher, which may seem only natural but which gives rise to several asymmetries. Likewise, most of the teacher's talking time is devoted to the formal presentation of content in the form of traditional lecturing or encouraging students to respond. The teacher-fronted technique may predominate as content ultimately needs to be presented and the teacher remains the expert. While active participation is ingrained in the very culture of L2 learning because of the impact of communicative approaches on teachers, in ordinary bilingual education, their central role as presenters of curricular content is hardly ever disputed. The role of grammar in the L2 classroom may be questioned but that of the Renaissance in art history teaching, even in an L2, is incontestable.
- *Distribution of turn-taking*. Decisions on classroom discourse and its distribution are up to the teacher. Teachers may switch from the instructional register, in which content is presented in the canonical order of the discipline (e.g. equations come before integers in maths and the pre-Socratics before Plato in philosophy), to the regulative register which establishes the order, orientation, and organization of the classroom as part of its management. As a rule, classroom discourse tends to be of the transactional kind dominated by the

teacher and interspersed with interactional episodes that structure relationships between the participants (Dalton-Puffer 2007).

- *Structure of turn-taking*. In bilingual academic discourse, turn-taking has a traditional structure of initiation, response, and evaluation, with the teacher starting the process and the students responding, which in turn prompts a reaction from the former. As students are constrained by some form of intervention in which aspects like length or topic are determined by the teacher, it is an artificial model of dialogic interaction. For instance, although students can manage turn-taking, they can only choose between continuing to speak and selecting the teacher as the next speaker. Other authors see this discourse pattern in a more positive light (e.g. Nassaji and Wells 2000).

Therefore, bilingual classroom interaction is a highly hierarchical 'two-party speech exchange system' (Schegloff 1987). When two languages coexist in the classroom, the structure of interaction may vary a great deal. The presence of a stable L2 differing from the medium of instruction encourages alternation between languages (aka. translanguaging), which gives rise to new roles and reduces the overload of information which otherwise would not be understood (Hatch 1992; Nikula and Moore 2019).

Seedhouse (2004) referred to four different L2 classroom contexts that may well epitomize most, if not all, classroom conditions: form and accuracy, meaning and fluency, task-oriented, and procedural contexts. Based on these, the following bilingual discourse classroom situations are singled out:

- *Teacher's monologue*. As already noted, this is the act of teaching par excellence. As the teacher's input operates at a fixed level of complexity, it can range from the moderately acceptable in terms of incomprehension to being way above the comprehension level of students. As their comprehension normally varies, teachers may focus on some students, while leaving many others out of the classroom dynamics. The extent to which content is shaped so language is comprehensible to the majority is, after all, the cornerstone of a quality bilingual classroom. To this should be added that students must be fluent not only in producing and understanding language but also in communicating the knowledge structures of the subject matter. This conceptual fluency increases the demands on their resources.
- *Teacher–student interaction*. In bilingual classrooms, teachers must always be aware of the necessary linguistic adjustments. The amount of scaffolded discourse determines what can be learned when receiving new academic information. This process, which in

a way epitomizes the act of learning, is at continuous risk when the language competence of students is below par. To facilitate sheltering, teachers may choose to adapt their discourse flow with strategic cues that give the floor to their students with the aim of checking their comprehension levels. Comprehension-checking devices increase the chances of identifying difficulties and can employ different discursive frames: teachers sometimes give students a 'programmed' opportunity to self-select; they may occasionally elicit a choral response to a deliberately incomplete utterance; or teacher–student interaction is at times relaxed to encourage the individual participation of learners (Koshik 2002; Margutti 2010; Myhill 2006).

- *Student–student interaction*. Student–student interaction is a very effective knowledge-production technique. As this more intimate context can make students feel more secure and sheltered, it can be a very face-saving setting in which students feel freer to experiment with language and double-check interpretations (see Johnson 1981). Bilingual academic learning relies on the proper matching of content and language structures. Students need to realize how disciplinary notions take shape in language, like, for instance, how the study of ecosystems prompts the use of comparatives: some being colder, more humid, or more habitable than others.

  When divided into small groups, students can be more language-focused than in teacher-fronted classroom settings. Evidently, a class split into small groups multiplies the chances of language production with a greater amount of verbal interaction. This is not without its risks, however. Students may choose to abandon their message, to give in, or simply not to use the vehicular language. Notwithstanding this, bilingual academic interaction can possess the ordinary characteristics of natural conversation without being a parasitic form of speech: simultaneous start-ups, overlaps, interpolations, or even discursive struggles for talking time may occur (Schegloff 2000).
- *Self-talk*. As a form of individual work, self-talk is a very productive technique in bilingual learning for the simple reason that it allows for private language experiments. It warrants noting that texts play a key role in bilingual settings. Students need to allow themselves the time to explore the intricacies of academic language in an L2. Solid bilingual systems include well-thought-out strategies for ordering texts in class employing tools like whole-school language plans or genre maps, in which students are required to produce or understand

progressively more complex texts. Whether individually or in group discussions, these strategies can enhance text comprehension and lead to improved individual reasoning skills (Mercer 2000).

- *Student's monologue*. Delivering a monologue in an L2 requires a firm grasp of the language, as well as the individual traits essential for L2 acquisition: high motivation levels, anxiety control, and an in-depth sense of self-efficacy. When students become engaged in a monologue, they may incur some sort of discourse babbling. This is the case when they have framed the content in a speech act, forming a mental representation of the content and even a rhetorical plan to give it the proper shape. As they are lacking in L2 competence, however, words fail them and they become engaged in an incomprehensible discourse that can be a previous stage of proper communication and is therefore success-oriented. Hence, this kind of monologue benefits from a long planning phase during which students work on the rhetorical design of their interventions and establish the major milestones of their production. As in any planned output, it has an important impact on the restructuring of their interlanguage system.

## 1.5 Language Adjustments in the Bilingual Classroom

In bilingual discourse, teachers should not take language for granted or neglect content transmission. Questions such as how the social strata of feudal society can be understood in a less stratified contemporary world or how atomic division can be formulated in the absence of a sensory experience are content matters. Besides attention to content, in bilingual classrooms – in fact, in any classroom with just one student learning in an L2 – there is a need to be fully aware of language as a vehicle of communication, that is, the counterintuitive impression that language – not content – needs to be moulded (Tedick and Lyster 2020).

As already observed, a great deal of bilingual research has addressed this very fact under different labels: sheltering (more in vogue in the United States for minority students); scaffolding (an L2 acquisition concept originally deriving from the psychology of learning), which emphasizes the fact that learning needs to be gradual and to evolve stepwise; and integrating (a core element in European Content and Language Integrated Learning [CLIL]), which again fosters the adequate matching of language and content. One way or another, they all address language adjustments.

Teachers display a wide repertoire of linguistic adjustments. Grading or finetuning, as it is also known, involves adapting normal discourse to interlanguage levels. This requires continuous self-monitoring of their verbal output (i.e. noticing and double-checking that the discourse has been properly taken in). L2 text adjustment is a central issue in language acquisition research. One of the approaches to the issue is grounded in the assumption that for input to become intake (i.e. for language flow to be assimilated and understood), correct language adjustments are needed. Another aspect that has made linguistic adjustments worthy of attention is that the correct integration of content and language in bilingual scenarios should preserve the original rhetorical macrostructures of academic language so as to prevent the language adaptation process from interfering with the actual development of the cognitive academic skills of students.

The language adjustments involved in the grading process also have a bearing on the wider debate on how language education in content areas should involve teaching the genres and discursive patterns of the discipline: the discourse of the social or experimental sciences, among others (see Fang 2006; Gillham 1986; Hyland 2006; Mohan and Slater 2005; Musumeci 1996). Briefly put, the proper integration of language and content ultimately has a bearing on whether or not students can learn, produce texts according to the dictates of the disciplinary language, and be ready to perform linguistically as actors in content areas.

The belief that language adaptation is a process that all teachers use naturally is far from being the case. As language is often simplified so much that it could be too poor for any content to be learned at all, teachers should beware of adopting reduction strategies that make language unnecessarily and unrealistically simple, for this often results in texts containing short, choppy sentences (Adger et al. 2018:37). Simplification can be a useful strategy, especially when it involves reducing the mean length of an utterance ([MLU]), that is, the number of words per sentence, or in texts with high lexical density, namely, with a higher ratio of content words to function words. Nevertheless, this strategy cannot be totally implemented in content-based settings where subject area vocabulary must appear (for a more comprehensive list of strategies, see Table 1.1).

Instead of simplifying the discourse, teachers may decide to reduce cognitive complexity, without having to make any major alterations to the original linguistic texture. The overall purpose of applying this strategy, as opposed to simplification, is to make meanings clear but not through language reduction. Rather, the strategies employed tend to lengthen original sentences further with paraphrasing, repetition, and appositions, among

other devices. As a matter of fact, since they provide further information for contextualizing the difficult bits, elaborated texts tend to be longer and to have more words and nodes per sentence than the original (Chaudron 1983; Yano et al. 1994).

A third approach is rediscursification, an adaptation strategy that does not operate on sentences or texts but only at a much higher level. Although sentences and texts are modified, changes are brought about by a discursive interpretation of the setting in which the text will be read, an educational context that is more than a mere offshoot of the original discursive situation. The new discursive reality prevails over original text retention, and only the naked macrostructure of the text is retained. Adjustments tend to be bolder, with a broader scope, for the ultimate purpose of this process is to use texts as a means of socially constructing a learning experience (Christie 2002; Halliday and Hasan 1976).

Consequently, changes may involve altering the meaning and the discourse type. As far as changes in meaning are concerned, it can entail the direct removal of ideational material (secondary ideas in paragraphs are usually lost), and the construction of new meanings that are close to, but not the same as, those in the original text. As to the second aspect, when adaptors feel that some aspects of the original text do not fit well with the new learning situation, they can employ engagement strategies for retaining the attention of readers. Among other discursive changes, adaptors can always try, for example, to turn an abstract text into a more tangible and concrete one, reshaping expository prose into narrative sequences, including, for example, high activity levels or making the author more present through explicit markers of evaluation and attitude.

By these and other means, the original text is reshaped, its purpose changing from informational (a text written simply to convey facts) to involved production (a text for introducing a new topic in class). From the foregoing, it follows that the processes described differ not only in the nature of the linguistic adjustments but also in the language level at which they are made, as well as in the effect that the adaptation is meant to have on students.

Teachers, material developers, and evaluators resort to strategies of one or the other type or a convenient combination of both to make language noticeable in the bilingual classroom. Language cannot pass unnoticed. Historical discourse, with all its twists, breaks, and clefts, can be toned down to a level that allows learning to take place.

The three strategies described earlier – simplification, elaboration, and rediscursification – whose mechanisms may overlap at times, are illustrated

Table 1.1 *Language adjustments in bilingual discourse (Lorenzo 2008)*

| Process | Linguistic dimension | Final aim | Operating principle | Main strategies used |
|---|---|---|---|---|
| Simplification | Sentence-framed changes | To reduce linguistic complexity for increasing understanding | Simplify, not amplify | • Short and simple sentences<br>• Movement of topics to front positions in the sentence<br>• High-frequency vocabulary<br>• Higher ratio of content word to functors<br>• Avoidance of sentence embeddings<br>• Limited range of syntactical and semantic relations |
| Elaboration | Text-framed changes | To elaborate the discourse to make it cognitively simpler while keeping linguistic difficulty | Amplify, not simplify | • Highlighting of important concepts<br>• Removal of pronouns with unclear antecedents<br>• Lower type–token ratio<br>• Maintenance of original complexity in syntax and lexis<br>• Adding redundancy through repetition, paraphrase, and retention of full noun phrases |
| Rediscursification | Discourse-framed changes | To adapt meaning, form, and format to a new instructional situation. Texts are redesigned | Deepen, not broaden | • Changes in text typology: from ideational to involving texts<br>• More overt interactional structure: questions inserted<br>• Explicit engagement devices: writer-oriented features (explicit markers of evaluation and attitude, hedges, and boosters) and reader references<br>• Meaning adaptation: high activity levels, ideational reduction, and secondary ideas are shortened<br>• Format adaptation: asides, footnotes, graphs, visual aids, glossaries, parenthetical information, and pretasks |

by the adaptations of the initial sentence of the following passage on the origin of the word 'cathedral' from an English original on Medieval religious architecture.

*Source text:* One of the earliest instances of the term ecclesia cathedral is said to occur in the acts of the council of Tarragona in 516. Another name for a cathedral church is ecclesia mater, indicating that it is the mother church of a diocese.

*Simplified text:* The term ecclesia cathedral was first used in the acts of the council of Tarragona in 516. Another name is ecclesia mater. It indicates that it is the mother church of a diocese.

*Elaborated text:* It is said that one of the earliest examples of the term ecclesia cathedral occurred in the acts of the council of Tarragona in 516. Another name for a cathedral church is ecclesia mater, which means that is the mother church of a diocese.

*Rediscursified text:* The term ecclesia cathedral was used for the first time in the acts of the council of Tarragona in 516. There are other names for a cathedral church, like Ecclesia Mater, Domus Dei, and the Italian Duomo.

## 1.6 Conclusion

Conversational, here-and-now language is different from academic, there-and-then language. They vary in their components, acquisition processes, cognitive constraints, and designations. Academic language can be described both in terms of context (based on the situation, participants, ends, acts, key, instrumentality, norms, and genres of communication) and how it organizes information – often favouring conciseness, density, recursion, and incongruence.

The use of academic language in a second language (L2) places additional strain on students' cognitive resources, making it more challenging for them to process and produce complex messages. To learn effectively in an L2, students may need to achieve a certain level of proficiency ('L2 instructional competence'), which involves not only a strong grasp of the language itself but also the ability to use advanced CDFs. While this idea suggests the existence of a language threshold (threshold hypothesis), research increasingly highlights the interconnectedness of all languages in a learner's repertoire (interdependence hypothesis).

The complexity of task organization for the transmission of content via an L2 is often illustrated through a quadrant model, where tasks are

categorized based on cognitive demand and the degree of explicitness of the information. Globally, however, speaking time and turn-taking patterns in bilingual classrooms tend to follow fixed, predictable structures. Also, for students to effectively engage and understand academic content, input must undertake language adjustments through a process known as rediscursification.

Certain socially relevant communicative situations require academic language. Writing essays, understanding precepts, and drafting petitions, among other things, are cultural and professional skills that facilitate integration and promotion in society. Academic language is more than style. A descriptive linguistic insight into academic language shows an increase in variation of all language indexes at all levels. Now more than ever, students should be academically proficient in more than one language. This increases the challenges that schools are expected to meet and provides further benchmarks for measuring the efficiency and quality of institutions and education systems.

Biliteracy is, however, just one single process; students do not become literate in one language and then start from scratch in an L2, until having a full command of academic skills. There is a continuous transfer of skills and strategies between languages. Bilingual programmes undertake this mission under different labels: immersion, CLIL, EMI, or content-based language instruction. A conceptualization of academic language that incorporates cognitive insights is a necessary foundation for the development of multilingual programmes so necessary in current society. This is the first step towards quality bilingual education, an old ambition of societal multilingualism.

CHAPTER 2

# *The Development of Bilingual Academic Language across the Lifespan*

## 2.1 Introduction

Academic language is defined as a communicative activity that results from sharing or creating scholarly knowledge in formal settings. Although the first contact with the written word often occurs at home – in fact, family language habits are one of the main predictors of literacy ratings later in life – the natural setting for literacy development is the school (Wolf 2008). The principal task of education is to design reading and writing programmes that facilitate knowledge formation. Literacy is, therefore, the central function of schooling, which has been described as an essential aspect of intellectual and emotional development (Steiner 2003:173).

However, literacy is a construct that lends itself to different interpretations, ranging from a command of the rudiments of writing acquired during infancy to the ability to express diverse representations of high culture, namely, the difference between scribbling letters and writing a work on par with *The Aeneid*. Several millennia after the invention of writing, illiteracy or *illetrisme* is still a matter of concern in cultural studies, together with other related issues like functional illiteracy, a basic skill that only allows those possessing it to engage in rudimentary social intercourse, or U-turn illiteracy, a regression that occurs when the practice of writing is abandoned at some point in life (Jiménez Castillo 2005; Lorenzo 2016).

L2 learning introduces a new factor in literacy development, which may hinder or facilitate it, depending on the setting. However, irrespective of the number of languages involved, literacy is a unique process in multilingual settings as reading and writing are learned only once, with many crossovers and leakages between the languages spoken by individuals, which vary according to whether they use them to communicate in day-to-day situations or for more sophisticated purposes.

## 2.2 L1 Literacy as a Process

Education systems design and implement programmes that set the groundwork for literacy development aimed at ensuring that all students complete the process. National strategies are adopted so as to guarantee that all students participate and none are left behind. The United Kingdom's National Literacy Strategy, for instance, estimated that 80 per cent of children would reach acceptable literacy standards simply as a result of being taught well by competent teachers with the ability to use proven best practices. As to the remaining 20 per cent, 15 per cent would require extra small group tuition, in the event of falling behind their peers, to reach acceptable standards, whereas the other 5 per cent would be provided with occasional one-to-one tuition from early on in their school careers, specifically, before the age of eight. The intention was none other than to achieve universal literacy across the school population, regardless of social and cognitive factors (Moss 2009:130).

The understanding of literacy has not been free from cultural myths. In the Romance literacy tradition, it was held that to spare the rod was to spoil the child, a belief which favoured irrational teaching methods decried by the enlightened (e.g. Goya's watercolours *La letra con sangre entra*, featuring children being caned in the classroom, and *Por mover la lengua de otro modo*, depicting the severe punishments inflicted on multilinguals at school).

Even though all that is water under the bridge, current learning theories often draw from other outdated ones that are inconsistent with the natural mechanisms of language acquisition (on language myths, see Bauer and Trudgill 1998). In grammar-oriented traditions, schools accept language proficiency hypotheses that empirical research has since debunked. Traditional methods erroneously assumed that language description implied language acquisition, in other words, that language was acquired by focusing on its grammatical aspects. As a result, there was often a disconnection between literacy and usage which produced legions of non-communicators who learned the structures of the language but never managed to use it, the difference between 'knowing the language' and 'knowing about the language' being ignored (Widdowson 1978).

If literacy is understood as a lifelong process, the demands of academic language differ depending on the stage of schooling. To begin with, early literacy education is mostly interactive with cooperative peers, which is how all children start to 'learn to read'. Early writing education is based on the production of flat, monocausal texts with simple structures and ranges.

Learning goals mostly have to do with focusing on specific ideas and making inferences, as well as with examining and evaluating basic text features. This may involve short passages on, for instance, polar bears, describing their physical appearance, habitat, and seasonal activities (Herget et al. 2019). For learners, even basic language settings can be hostile, a situation that at school is referred to as the 'fourth-grade slump', a sort of 'derailment' that is often the main cause of school failure or early dropout.

A turning point occurs when language is used for transmitting academic knowledge in a discipline, that is, 'reading to learn'. At this stage, students should be able not only to understand the gist of ideas and to establish connections between them for the purpose of making full sense of a text but also to associate that text with the outside world and to draw multiple conclusions. Likewise, they need to take a mature approach to the detection of internal inconsistencies and biased information in a text. International surveys gauge these skills with post-reading tasks that involve informed decision-making or finding evidence supporting the accuracy of some or other statement (Mullis et al. 2007). More specifically, intermediate literacy is measured through an assessment of reading components that covers vocabulary, sentence comprehension, and passage fluency, with students demonstrating their expertise when they can correctly evaluate truth claims or arguments in written texts and draw complex conclusions.

The important point here is that the literacy levels pursued have the fundamental purpose of enabling individuals to live a full life in society and facilitating their participation in social intercourse through the written word. Yet in the case of academic language, it is not basic or intermediate disciplinary literacy that is at stake, for the ante has been upped (Adger et al. 2018; Shanahan and Shanahan 2008). Low literacy levels seriously affect content learning in all areas, especially in those more dependent on language, with deficits at this stage receiving striking names like the 'ninth-grade cliff' (Turque 2011).

Literacy is, therefore, an essential tool in today's knowledge society. By way of example, it is indispensable in the professional world, where it has a lexis, text features, and genres only known to members of a profession, be it technical or not. The link between literacy and real life also involves a relationship with the economic structure of a community. Literacy provides a certain amount of language capital in which its adequate command is an asset (see Chapter 7). Yet the impact of literacy goes far beyond employment and income, as better literacy skills correlate with health and participation in political processes.

As with many other cultural traits, literacy evolves over time. A longitudinal account of literacy describes its onset in infancy and subsequent development in adolescence and adulthood. Levels increase as students start school and progress upwards, before culminating in post-compulsory education. Unsurprisingly, the difference in information-processing skills appears to widen among low-achieving individuals after compulsory education, thus confirming that literacy skills and habits are mostly developed at school, as the institution provides individuals with regular text input (Borgonovi et al. 2017). The fact that, at the end of compulsory education, many students have much less contact with the written word leads to stagnation in their competence levels, which may even decline with age; indeed, many national literacy surveys have revealed a lower performance in adulthood (aged twenty-seven) than in adolescence (aged fifteen).[1]

The Progress in International Reading Literacy Study, the Programme for International Student Assessment, and the Programme for the International Assessment of Adult Competencies, the series of standardized tests revered, as well as feared, by institutions worldwide, which students sit in early adolescence, mid-adolescence, and adulthood, respectively, confirm that in several countries literacy levels may be lower in adulthood than in adolescence, which implies that reading competence peaks at the end of education before diminishing. Similarly, surveys performed in the United Kingdom and the United States have shown that progress between younger and older generations is barely discernible. In other words, in these countries, young people are not that better prepared than pensioners. These surveys have also revealed that the United Kingdom is among the three highest-performing countries in literacy in the fifty-five to sixty-five age group but among the bottom three countries in the sixteen to twenty-four age group (OECD 2013).

## 2.3 Biliteracy as a Process

Biliteracy has been described as a continuum: at one extreme, the lack of language competence is assumed to be complete and, at the other, there is a perfect balance between the two languages. However, such extremes rarely occur in real life. Despite the use of labels like 'zerolingualism', languageless individuals do not exist because mental life involves the creation of language (Pinker 1995). On the other hand, perfect bilingualism ignores the highly unstable conditions of language performance, replete

[1] www.oecd.org/en/about/programmes/oecd-survey-on-social-and-emotional-skills.html.

with interferences, loanwords, multilingual slips of the tongue, and strategic code-switching between languages. Compound bilinguals are reluctant to confess that they have a full command of both systems, and not many members of an international audience would admit that they are monolingual or bilingual, but most would profess to have a certain degree of competence in their languages (Bialystok 2017). Acknowledgements of insecurities, attrition, and thematic limitations in one of their languages abound in the language biographies of multilinguals, with such confessions telling us more about the enhanced language awareness of bilinguals than about real communicative limitations (Arnold 1999; Grosjean 2019). Therefore, in its most extreme form, 'balanced bilingualism' has often been a term more commonplace in public discourse than in the literature.

For all that, the term 'zerolingualism' was coined to describe the difficulties of minority students in majority education systems, more precisely those of Finnish-speaking students in Sweden (Jaspers 2011). The intention was to raise controversy and to disclose the fact that schools were not paying enough attention to minority students, who were effectively ignored in class owing to their language profile. Other similar concepts that have appeared in the field include 'non/non speakers', who were considered incapable of entertaining complex ideas. In the Los Angeles Unified School District alone, thousands of children were classified as 'non-nons'. These and other terms like 'bi-illiteracy', usually applied to minority students, tend to lend some credence to the relationship between multilingual backgrounds and advanced language deficits, often arriving at wrong conclusions about their implications for their cognitive profiles (Adair et al. 2017; Johnson et al. 2020).

The more widely used concept of semi-lingualism, defined as a 'half-knowledge of the second language coupled as a half-knowledge of the first language' (Lucchini 2009), is yet again related to the consequences of an incomplete language education for minority or immigrant communities, in which the dominant language of society is supposed to replace their L1. Although scholars have felt somewhat ill at ease with the concept of semi-lingualism, on the grounds that it leads to deficiencies in such a central aspect of students' lives, it may prove useful for addressing a crucial aspect in education: the fact that academic language, the language for accurately interpreting natural and social life and for stimulating scientific reasoning, can be stunted for the simple, circumstantial reason that the home language is not that of schooling.

Semi-lingualism, therefore, indicates that multilingual students have failed to complete the transition from conversational (BICS) to academic

(CALP) language and reveals the difficulties that they have in becoming proficient in advanced language, above all when their multilingual backgrounds are accompanied by inadequate social conditions, as is often the case with migrants and refugees (MacSwan 2000; Skuttnab-Kangas 1981).

Lucchini (2009) has pointed out four areas in which the language system of multilinguals can falter:

- *Hybrid forms*. As the languages of multilinguals always remain active, there can be interferences and/or mutual crossovers with negative (i.e. interference), neutral (code-switching), or positive (translanguaging) effects; this last concept has apparently gained currency.
- *Simplifications*. Communication demands oblige students to make the most of their language skills, which are insufficient to express themselves, all of which lead to structural and functional simplification.
- *Hypercorrections*. As students tend to put the few rules that they have learned to a general use, they do so in inappropriate contexts. Although they may eventually fine-tune their interlanguage, in the meantime they correct themselves, even when it is unnecessary.
- *Linguistic variations*. As their language system is not yet firmly grounded, students may often use correct and incorrect examples in the same context in free variation.

These principles are illustrated by examples in the following chapters.

Cognitive maturation and the regular participation in complex communicative situations lead to language development. For bilinguals, such a process has been described as the dynamic, flexible development of two written languages in which both mediate through complex reciprocal transactions (Dworin 2004). There is not a straightforward linear evolution of two separate systems, one for each language, but rather, the two languages are intertwined in the mind of the speaker. Biliteracy is consolidated over time as learners progress through the different stages of schooling. At school, cognitive demands gradually increase and, accordingly, language construction becomes increasingly more complex.

The relationship between literacy and bilingual competence can be better understood if analysed on the basis of four dimensions that predict biliteracy as an individual trait. In this regard, theorists have defined biliteracy as 'any and all instances in which communication occurs in two (or more) languages in or around writing' (Hornberger 1990:213). This approach represents biliteracy as a bundle of intersecting and nested

continua with mutual connections which operate in the communicative act. The model, whose purpose is to lay the foundations for language planning and to facilitate decisions in multilingual education, is based on the cognitive principle that no language remains passive in a communicative act, but all of them are always in operation to some degree. The reasons, modes, and circumstances of these four dimensions predict biliteracy levels and the development of individual bilingual experience as a whole. The continuum addresses four dilemmas that need to be resolved to understand biliteracy: the global/local dilemma (the political side of biliteracy); the standard/non-standard dilemma (its linguistic side); the language/content dilemma (its educational side); and the language/identity dilemma (its cultural side).

Based on these four dilemmas, Hornberger's continuum explores the following four dimensions shown in Figure 2.1.

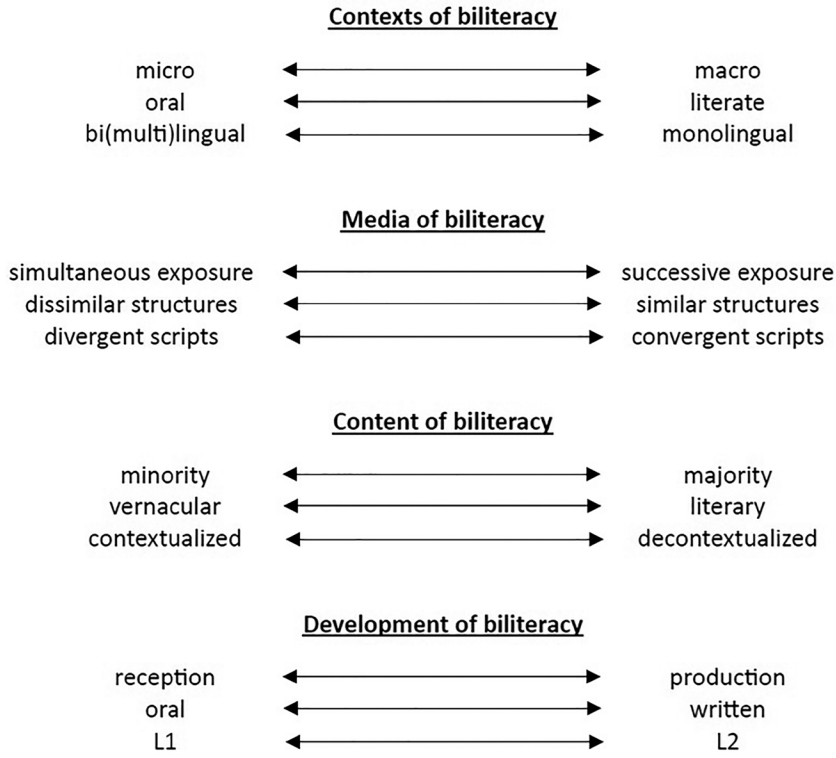



Figure 2.1 The continua of biliteracy (Hornberger and Skilton-Sylvester 2000)

### 2.3.1 Contexts of Biliteracy

As language has many functions and uses, bilinguals are obliged to opt for either using one of them consistently or strategically combining both. As already noted in Chapter 1, bilinguals put language to many uses in different settings, involving diverse participants, communicative acts, and genres. Together, these variables determine the choice of language and style and establish the conditions for biliteracy development in the long term. In this view, bilinguals switch languages according to specific functions and use in the same way as monolinguals switch styles, including macro and micro variables as choice determinants (Cook and Wei 2016).

Along these lines, a distinction can be drawn between micro and macro factors, also presented as local or global communicative acts. A classic example of balanced biliteracy can be found in Paraguay, where Guarani and Spanish are generally the media of instruction used for developing all skills during the different stages of schooling. Be that as it may, the vernacular prevails in rural domestic settings, while the Romance language predominates in their more formal urban counterparts. This example of diglossia illustrates the different attitudes and considerations of speakers towards their language (Rodríguez 2019).

Biliteracy is, therefore, context sensitive as evidenced by the fact that situational factors guide code-switching, namely, the many reasons why bilinguals are inclined to use either language or a combination of both. Speakers may code-switch for communication purposes, using the shortest and easiest way to communicate effectively, like, for instance, counting in their mother tongue because they feel more confident. For conceptual motives, they also do so to produce a meaning that captures all the essences of a word or phrase in only one of the languages, as in the case of 'fish and chips' or *chile con carne*.

Likewise, some concepts simply work in one language for their cultural connotations: *fatwa* to express a ruling by a religious authority and *quinceañera* to describe the rite of passage of teenage girls to adulthood. There can also be emotional reasons behind code-switching, such as to draw attention with language transfer, like, for example, cursing in one language for emphasis – *hija del diablo* – to facilitate engagement with peers, or to reveal identity, as with family names – *abuelo* ('grandad' in Spanish), *aita* ('dad' in Basque) – and so forth (Heller 2011; Nikula and Moore 2019; Myers-Scotton 2002).

### 2.3.2 Medium of Biliteracy

Bilingual practices are sensitive to the status of the languages in play. Bilingualism in which international languages or lingua franca are involved enhances the role of speakers. It can also involve languages that are more

or less frowned upon, such as low-prestige vernaculars or even bidialectal forms with different aesthetic or moral implications. In the Southern United States, Spanish speakers can be repudiated for many reasons: the hegemony of English as a global lingua franca that marginalizes migrant languages, the bigotry of standard Spanish that sets it above other lower-status southern varieties on the periphery, or local varieties of the same dialect that are more or less socially accepted, like, for instance, Dominican Spanish versus the Puerto Rican variety (Otheguy and Zentella 2012). Of course, the ideological filters at work in these situations mean that these speakers can have a low self-esteem because of the alleged inadequacies of their language and, consequently, low language motivation, negative attitudes, and, possibly, language attrition (Lippi-Green 2012).

The continua of biliteracy development in individual skills determine the degree of language proficiency. Receptive bilingualism is experienced by many second-generation bilinguals who have not developed productive oral or written communication skills. Biliteracy studies should acknowledge that the cognitive 'switchboard' controlling languages share the same strategies and mechanisms to the point that differences are slight, as the representation of biliteracy as a 'dual iceberg' suggests. This implies that all languages and dialects ought to be considered as triggering factors in the consolidation of other tongues in an act of mutual construction.

One further element is the continuum of biliterate media. In this conceptualization, these media mostly address factors like the order of exposure to the language repertoire of an individual. Simultaneous bilinguals communicate in the two languages from an early age and connect both with cultural experiences that create the feeling of language acquisition. Learning two languages from an early age implies not only a degree of competence in both but also a personal identification with them. For their part, successive bilinguals feel that the connection is stronger with the language that best expresses their cultural representations. The distance between the repertoires of two languages is also related to identification. This can be greater between two very different foreign languages than between those that share the same roots, like, for instance, two Romance languages.

### *2.3.3 Content of Biliteracy*

Languages situate speakers in a cultural dimension and, in a way, biliteracy only reaches its zenith with biculturalism. Bicultural people need to negotiate competing worldviews and come to terms with the fact that cultural norms – culturemes – can result in alternative cultural beliefs. Navigating

these complementary identities forces biculturals to display consistent attitudes across all their cultures and expand their individual ego boundaries (Byram and Tost-Planet 2000). To make two cultures compatible, it is necessary to develop a certain degree of personal cognitive coherence that multicultural people usually possess (Poyatos 2002).

From this perspective, the continuum explores the right to exist of minority discourses and non-mainstream cultures which ultimately shape different worldviews. Education plays a crucial role in forging academic identities. Schools are responsible for academic identity building, and as minority language students often discover that their vernaculars are not represented at all, they have a natural tendency to forge an academic identity in a language that is not their strongest. This dissonance can pose a problem for students schooled only in the socially dominant language, who often find that they are using it inadequately. In sum, the core position of the dominant language in education systems may gradually erode the home language of minority students as they progress through the different stages of schooling while giving rise to an inverse correlation between education and language maintenance; that is, as the educational level of students increases, their command of their native language decreases.

### 2.3.4 *Biliteracy Development*

The fairly general belief that a line, however thin, can be drawn between language and content is groundless. In the many different forms of bilingual education – CLIL, EMI, immersion, etc. – a basic tenet is that content and language are inseparable. The continuum holds that an ungrammatical expression with accurate content, or a grammatically correct expression with inaccurate content, may be just as much a sign of learning as a grammatically correct expression with accurate content (Hornberger 2004:166). Furthermore, the knowledge structures of the different disciplines are associated with recurrent language forms: the study of chromosomes in science implies the use of reciprocal pronouns, that of the surface of rectangles is highly likely to trigger comparatives, and that of landforms involves the expression of existentials.

Similarly related to language and content, in some school systems, it is often considered to be necessary to teach some subjects in a specific language owing to its close political connection with the content. In many education systems, the aim of teaching history, for instance, is to forge national character, hence teaching the subject in other languages is often frowned upon as it is believed that this undermines the national ideology behind education.

In more liberal programmes whose intention is to use history to open the minds of students to other visions of the past not necessarily linked to their national history, the subject is taught in the language of the country holding another vision. After the Second World War, Franco-German programmes used the bilingual teaching of history to explore different perspectives of the past and to encourage students to make a balanced interpretation of historical events. Similar initiatives have been less successful in the programmes of countries where there is still an ongoing historical debate, as was the case with the Hebrew-Arabic programme in Palestine, which the Israeli education authorities finally shelved (Adwan and Bar-On 2003).

From a sociocultural perspective, some cultures deny the legitimacy of translating subject matter into another language because symbolic meanings can be lost in translation. In most major religions, sacred texts are best, or only meant to be, written in the language in which the truth was revealed, be it Hebrew, Greek (Latin), or Arabic. In multilingual societies, institutional content, albeit non-denominational, tends to be written in the dominant language. Official presidential websites in languages other than the dominant one have been deleted in countries like the United States, while also banning state anthems allegedly failing to convey the message as in the original by portraying aliens as if they were nationals (Miller 2011). The names of public buildings, including law courts, all appear in the dominant language to reinforce their link to institutional power. Of course, decisions on the languages used in educational settings are made on the strength of their social presence, visibility, and political connotations. All in all, this determines social biliteracy and relegates other languages to the margins of social life, while diminishing their social vitality and role in the functioning of services in a multilingual society.

## 2.4 The Formation of Academic Bilingualism: Bilingual Lolita

As already observed, biliteracy gradually evolves as individuals find themselves in increasingly more complex situations in which multiple languages come into play. The dominance of one language over others varies in multilinguals insofar as this depends on the setting in which one of them is more prevalent than the rest. Academic L2 progression across the lifespan is described further on, with an account of language growth both in structural – how language units (words, phrases, and sentences) increase in length over time – and functional terms – how the objective of functions is initially to fulfil simple needs, like reaching out for an object in view or calling siblings over, and then to express advanced concepts, like hypothesizing about events that never happened.

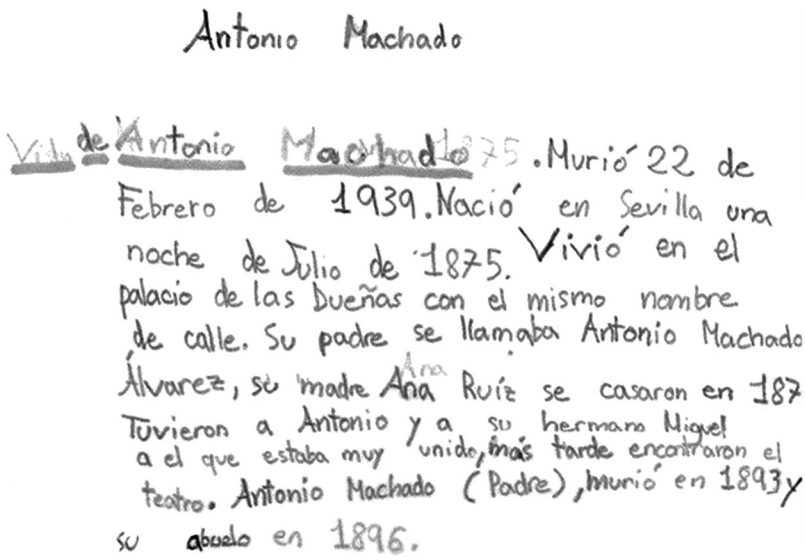
This section offers an overview of biliteracy accomplishments during the academic life of a student, from her early literacy stages in primary school to her completion of a university degree in tertiary education. To this end, three stages of her career are illustrated by three texts that she produced at different moments, years apart from one another.

Specifically, the focus is placed here on the performance of Dolores – also known by her family as Lolita – when producing a series of academic genres in the courses that she took at the time. They illustrate her first steps in literacy and her path to functional biliteracy over the years. As to the process through which she acquired the two languages, an enquiry is performed into the genres and their demands, the discourse functions of each text type needed for expression, and the structural and functional challenges that producing those texts posed. Additionally, the crossovers between the two languages, her false starts, limitations, flaws, or simply blunders are explored (other landmark case studies include language biographies for multilingual learning, e.g. Busch 2006).

In the case at hand, the girl was born and raised in Spain and came from a family in which only Spanish was spoken. Her curiosity in English was aroused by the children's TV programmes that her older siblings watched and the US study abroad students who babysat her for a couple of hours a week during which they played dolls with her. From kindergarten, she participated in a low-exposure bilingual programme, a sort of local CLIL with certified teachers and some limited contact with native assistants. Although she soon grew accustomed to multilingual situations and accepted English as a language in that setting, she mostly spoke Spanish at home and at school. So, it was in Spanish that, when aged nine, she was asked to write an essay about the life of a national poet, shown in Figure 2.2 (an English translation can be found in the notes section of this chapter).

Her essay shows how much of a struggle it was for her to write a biographical account, a simple genre for which she must have drawn from her former literacy experience of bedtime stories featuring a variety of characters. This time, the main character was a real person with biographical information that had to be reported accurately. In the text, there is reference to several relatives of the poet, including their dates of birth and a brief account of how they died. The content illustrates how a young child mentally represents life: a network of family members (siblings, fathers, mothers, grandparents, and even uncles) characterized by births, ties, and circumstantial deaths.

Structurally speaking, the essay is a succession of simple sentences, except for one attempt to express complex meanings that required some relative sentences, which are clumsily constructed and have wrong cohesion


Antonio Machado

Vida de Antonio Machado 75. Murió 22 de Febrero de 1939. Nació en Sevilla una noche de Julio de 1875. Vivió en el palacio de las Dueñas con el mismo nombre de calle. Su padre se llamaba Antonio Machado Álvarez, su madre Ana Ruíz se casaron en 187 Tuvieron a Antonio y a su hermano Miguel a el que estaba muy unido, más tarde encontraron el teatro. Antonio Machado (Padre), murió en 1893 y su abuelo en 1896.

Figure 2.2 Lolita's essay about a poet, at age nine

markers. The composition also demonstrates the problems that she experienced when trying to structure information coherently. The basic rules of biographical information are bent, with the mental order of young Lolita prevailing. Chief among the disorders is the reverse rendition of dates, with those of death being placed before those of birth. From the perspective of academic language, there is also irrelevant information, including the names of parents and grandparents and the reflection of a young mind. Of course, her performance with respect to literacy is notable, for her essay reveals her initial attempts to come to terms with self-expression in the new sphere of written communication.

Lolita wrote the second essay (Figure 2.3) when aged thirteen, now in middle school. As academic demands were greater, she was asked to describe an episode that she had witnessed and which would soon become a historical landmark in the contemporary age: 11 September and the destruction of the Twin Towers. English being the language of choice this time, the essay has the typical structure of a historical account. Beginning with a narration of the events, the collapse of the iconic Twin Towers, with a description of the financial activity within them and their location in New York, she then offers some personal insights into the causes of the terrorist attack, an episode in a specific war between countries, in her own opinion, and the strategic

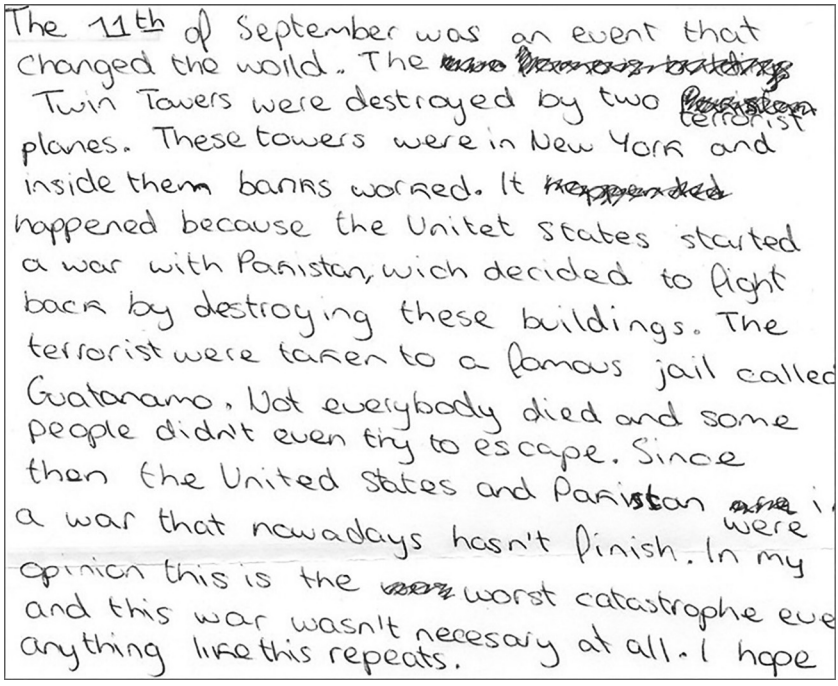
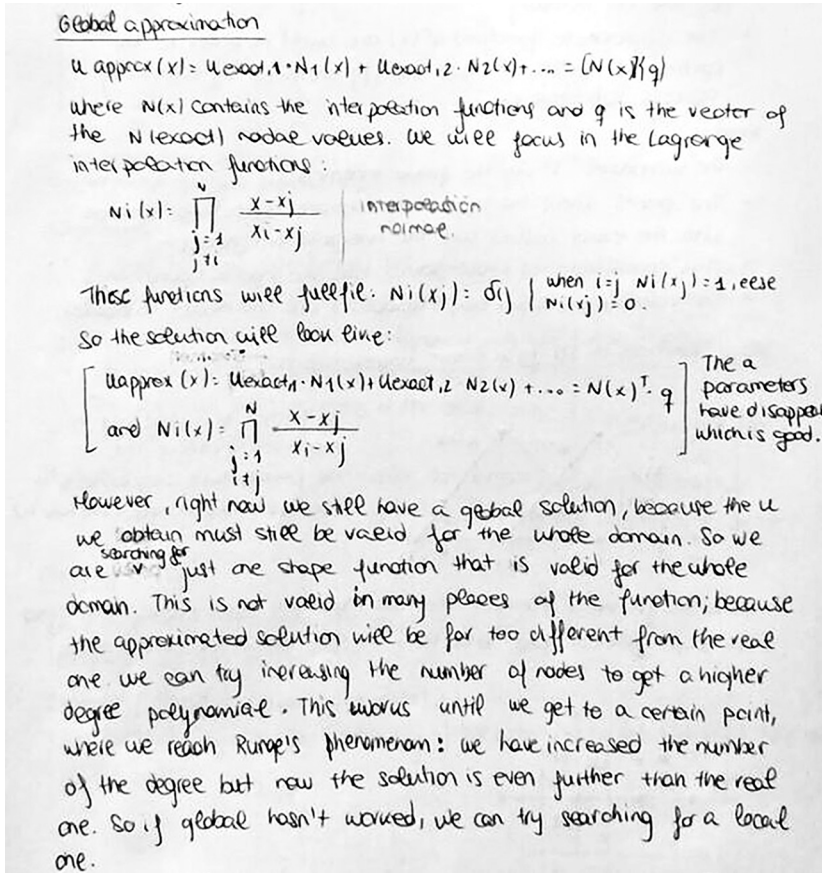

The 11th of September was an event that changed the wold. The Twin Towers were destroyed by two terrorist planes. These towers were in New York and inside them banks worked. It happened because the Unitet States started a war with Panistan, wich decided to fight back by destroying these buildings. The terrorist were taken to a famous jail called Guatanamo. Not everybody died and some people didn't even try to escape. Since then the United States and Panistan were a war that nowadays hasn't finish. In my opinion this is the worst catastrophe eve and this war wasn't necesary at all. I hope anything like this repeats.

Figure 2.3 Lolita's essay about a historical episode, at age thirteen

manoeuvring of both warring parties, presenting it as the result of knock-on effects. At the end of her essay, she takes a personal stance, offering her own assessment of the event: its qualification in the superlative and a passing reference to the fact that it could have been avoided. As is usually the case in early writings, her personal appraisal is wishy-washy and unsupported by facts.

A structural analysis shows that Lolita struggled to get the chronology right: the time frame is adequately established, with shifts back and forth at three different levels: the time of the discourse, the actual time of the events (the collapse of the towers), and the background information on the confrontation in South Asia. Although the author is employing the core functions of historical discourse, the arrangement of facts on a timeline, she makes the occasional mistake, as evidenced by the omission of the present perfect for the past initiation of the action ('since then USA and Pakistan have been at war') and the inaccuracies in the inflexion of the main verb in the dependent clause ('nowadays hasn't finish'). For all that, the academic achievement illustrated here is the development of a personal voice in historical narrative, a moment acclaimed in literacy studies as it


Global approximation

$u_{approx}(x) = u_{exact,1} \cdot N_1(x) + u_{exact,2} \cdot N_2(x) + \ldots = (N(x))^T q$

where $N(x)$ contains the interpolation functions and $q$ is the vector of the $N$ (exact) nodal values. We will focus in the Lagrange interpolation functions:

$$N_i(x) = \prod_{\substack{j=1 \\ j \neq i}}^{N} \frac{x - x_j}{x_i - x_j}$$ interpolation polinom.

These functions will fulfil: $N_i(x_j) = \delta_{ij}$ | when $i=j$ $N_i(x_j) = 1$, else $N_i(x_j) = 0$.

So the solution will look like:

$u_{approx}(x) = u_{exact,1} \cdot N_1(x) + u_{exact,2} N_2(x) + \ldots = N(x)^T \cdot q$

and $N_i(x) = \prod_{\substack{j=1 \\ i \neq j}}^{N} \frac{x - x_j}{x_i - x_j}$

The a parameters have disappeared which is good.

However, right now we still have a global solution, because the u we obtain must still be valid for the whole domain. So we are searching for just one shape function that is valid for the whole domain. This is not valid in many places of the function; because the approximated solution will be far too different from the real one we can try increasing the number of nodes to get a higher degree polynomial. This works until we get to a certain point, where we reach Runge's phenomenon: we have increased the number of the degree but now the solution is even further than the real one. So, if global hasn't worked, we can try searching for a local one.

Figure 2.4 Lola's essay about solid mechanics, at age twenty-three

shows critical skills in operation. This all occurred in an L2 of which the student already had a good grasp and spoke fluently, if not always idiomatically, with traces of L1 transfer.

The third essay (Figure 2.4) was written by an older Lolita (now called Lola), who was then studying for a master's in civil engineering, which included a structural analysis course in English, at a central European university. It addresses the solid mechanics problem of oscillation at the edges of an interval that occurs when using polynomial interpolation, a problem in numerical analysis also known as Runge's phenomenon.

The essay is a typical example of intersemiosis, that is, the combination of different types of language (verbal and mathematical) for presenting

disciplinary content (Kress 2010) in a way that makes full sense. It also falls into a new text category; the time for narratives is over, with expository language structures prevailing instead. People are only mentioned for naming rules and principles, such as the renowned mathematician from whom the phenomenon takes its name. Expository language is mainly referential and objectifies reality. As is commonplace in academic language, embeddedness prevails and the higher density of information contrasts with earlier texts based on textual factors which are discussed in subsequent chapters. Sentence embeddedness serves this purpose.

As to mathematical content, the essay is littered with many types of subordination, including nominal ('we can try searching for a local one'), adjectival ('one shape function that is valid for the whole domain'), and adverbial types. As to this last type, the text includes several examples in one single paragraph: cause ('because the u we obtain must still be valid'), purpose ('increasing the number of nodes to get a higher degree polynomial'), comparison ('the solution is even further than the real one'), consequences ('so we are searching for just one shape function'), and conditions ('if global has not worked').

But there is one aspect that illustrates advanced literacy best of all. For the expression of contrast, Lola starts with an adversative connector ('however') and chooses a situation-problem rhetorical pattern. The situation is expressed in mathematical language by means of a mathematical function, and the setback is introduced in verbal language. In other words, the connector is at the interface of two different semiotic systems.

In short, after reaching adulthood, Lola has demonstrated that she now has a firm grasp of language as a cultural tool, which enables her to communicate highly technical knowledge. As the literature on academic language has often purported, the language of choice in one's personal repertoire is almost an accidental variable. What really matters is the control of the rhetorical content that frames scientific communication (Yamamoto 2021). A thorough formal and functional description is needed, an issue addressed in the following chapters.

## 2.5 Bilingual Students in Monolingual Education

The case study presented in the previous section shows how an individual has become fully biliterate in a succession of programmes and multilingual systems which at times incorporated CLIL, EMI, and extramural contact with an L2, the lingua franca of the day. It could be regarded as an exemplary case of additive functional bilingualism, the outcome of a well-thought-out learning itinerary informed by European policies, which

has inspired local multilingual models in hard-core monolingual areas like Southern Mediterranean Europe. In the same context of the case study, CLIL French programmes in a considerably large number of state schools have proven to be a success (Pérez et al. 2016).

As stated earlier, literacy is an incidental process spanning a number of years, until the formation of complex language structures is completed later in life, sometimes well past adolescence. Biliteracy as an acquired trait, as in the previous case, is not rare, but systems resulting in truly biliterate students are indeed scarce and even fewer can claim that they produce bilingual, biliterate, and bicultural students, as elite programmes are wont to do (Baetens Beardsmore 1995; De Mejía 2002). These flagship education systems have implemented literacy programmes in the form of language across the curriculum, school genre maps, integrated content, and language assessment, all of which have made it possible to set language goals in other courses, like history and maths, in such a way that structured language is present throughout the school day.

Social multilingualism should, in principle, favour biliteracy, for in an ideal world education systems are expected to include language diversity in the school setting so as to ensure that all students acquire multilingual skills and that early bilingualism becomes advanced biliteracy over the years. However, the opposite is often the case. Despite the general support for mother tongue education in early schooling – so beyond doubt that mother tongue literacy is a basic human right of every child, according to international bodies – many systems are averse to multilingual education for cultural, social, and/or political reasons, or for their utter inability to implement a programme that encourages and firmly establishes the coexistence of several languages with an eye to integrating migrant, refugee, and minority language students. The following sections explore two extreme examples thereof, exacerbated by another factor that tends to increase the tension between cultural groups: the existence of borders, which are not only political but also linguistic, cultural, ethnic, and economic.

### *2.5.1 Bi-illiteracy across the African/European Divide in Ceuta and Melilla*

Mediterranean cities have a centuries-long tradition of multiculturalism owing to the fact that they have always been the melting pot of cultures with deep-seated worldviews based on their different languages, ethnic backgrounds, and religions. In these cities, cultural groups aspire to maintain social order, often threatened by cultural clashes in which language

diversity plays a role (Fishman and García 2010; Huntington 1996). Intercultural understanding is usually an unaccomplished goal.

Two such cases are the Spanish cities of Ceuta and Melilla. Despite their institutional Europeanness, both border cities are located on the Mediterranean coast of North Africa, with the hinterland of the Maghreb, the Northwest African region, extending southwards to the Sahara. They are both places of cultural encounter at many levels: religious (Christian–Muslim), cultural (African–European), ethnic (Berber–Caucasian), and linguistic (Darija–Spanish). These divisions influence the constant social interaction between the European Christian majority – soon to become a minority – and the Arabic-Muslim minority – soon to become the majority because of the community's higher birth rate (Jiménez Gámez 2012).

Against this backdrop, two major political discourses coexist: a centripetal discourse that applauds the opportunities that both cities offer as laboratories for multiculturalism and multiple identities and a centrifugal discourse whose aim is to keep the two social groups apart, namely, the segregation or ghettoization of the weaker social group, currently the Darija-speaking, Muslim-Berber minority.

As a result, education has become a bone of contention, one of the major issues being the languages of schooling. Spanish is widely accepted as the medium of instruction not only because of its official status and linguistic vitality but also because Darija, the local Moroccan Arabic, and Tamazight, a Berber language spoken by the Arab population, lack a solid written tradition; in fact, they are hardly ever transcribed. The situation with respect to these languages is one of double diglossia. Their linguistic prestige is lower than that of Spanish, not to mention standard Arabic which, culturally speaking, is the official language for Muslims. Notwithstanding the fact that they are frequently used in the home and neighbourhood setting, the local languages are highly stigmatized and those using them soon become aware of their inferior status (of the language and speaker, alike).

As to the school population of Ceuta, virtually half is Darija-speaking (46 per cent), especially in the schools of the monocultural suburbs in which they are segregated, if not ghettoed. To this should be added the continuous influx of students residing in Morocco, who cross the border with their mothers employed as domestic workers by middle-class families, in search of social benefits and – despite the institutional blindness to their cultural identity – better schooling.

Darija and Tamazight are seriously frowned upon at school, as is any representation of Arab culture, like the use of traditional dress (the kandora). This rejection of their culture is one of the reasons why Muslim-Arab

students have the highest early dropout rate in Europe, almost doubling the rate of the Spanish-speaking community in the area. Less than one out of three Muslim-Arabic students make it to the end of compulsory education and a testimonial 1 out of 600 goes on to higher education. In view of these figures, Darija is a casebook example of 'xenolinguistics' in which cultural, religious, and ethnic prejudices converge (Jiménez Gámez 2012).

The important point here is the widespread assumption in the school community that vernacular languages interfere with the completion of literacy. Official surveys have shown that learning deficits first appear at very early stages, more precisely in reading comprehension in disciplines like science and history. Vocabulary tests (Wechsler Intelligence Scale for Children and verbal IQ at Autism Spectrum Disorder Level 1) have revealed that the number of lexical words that minority students use remains stable between third and fifth grade, coinciding with the much-feared fourth-grade slump. This lack of progress has not been detected in those students speaking Spanish at home. Additionally, serious reading comprehension deficits in schools with a majority of Tamazight-speaking students (Mesa 2000) have been detected in all the studies performed to date. Likewise, the Illinois Test of Psycholinguistic Aptitudes, among others, has revealed that Moroccan Arabic bilinguals perform below the standards of the Spanish-speaking minority, the differences being more acute in students of a low socioeconomic status and in those who have not had a pre-school education, thus delaying their contact with Spanish.

That language deficits are the root cause of school failure is borne out by a survey of approximately 1,000 Berber students in the later stages of their education, specifically, in the first or second year of secondary school (Mesa 2000). This language group obtained a significantly higher number of failing grades in maths, language, and science. Indeed, more than 50 per cent of Berber students have to repeat grades throughout their schooling, more than twice as many as the rest of the Spanish-speaking population. The school experience leaves a cultural and almost moral impression on the Berber minority, both individually and collectively. They have a feeling of low self-esteem, learned helplessness, and social discomfort. The awareness that the presence of their vernaculars could improve results has made its way into the public discourse. Political parties like Unión Demócrata Ceutí and Coalición por Melilla advocate for the inclusion of Darija and Tamazight as essential for eradicating early dropout. To make matters worse, they are not even used as support languages to shelter minorities in their early school years (Sánchez 2010).

Language deficits have been reported in students in the form of language insecurity, a lack of fluency, a limited vocabulary, and difficulties

in expressing themselves in writing, a problem that for many teachers is caused by the interference of the Semitic language (Ayora 2008:12). This can have serious social and psychological consequences: during their lives, they develop a subtractive diglossic bilingualism that prevents them from fully identifying with the international Arab-Islamic community (*umma*) or the standard Spanish-speaking Christian population, who also look ethnically different. They assume their bidialectalism, a form of bi-illiteracy (Abdel-Lah Ali 2020), which contributes to the spread of the false belief that the source of all their educational problems lies in their vernacular.

### 2.5.2 Bi-illiteracy in the North/South Divide of the US Border

A case in point for tracking the evolution of language development across the lifespan is that of heritage speakers. Unlike the previous case, they use a tongue that is unsuitable for where they live. They have a sense of being detached from their cultural roots, a feeling that has been described as 'extraterritorial' (Steiner 1972) or 'transearthed' (Krauze 2022). Political or economic reasons are usually behind this feeling of displacement, which affects refugees and migrants the world over. In fact, a major challenge for language policies around the world is to introduce the children of these groups into mainstream education so that they can learn the majority language and prevent future generations from having language and learning deficits (Lorenzo and Meyer 2017).

Research on heritage speakers has prospered in the United States more than anywhere else in the world, especially because the millions of American residents that speak Spanish at home – over 40 million, accounting for 13.7 per cent of the total population[2] and 30 per cent of the school population[3] – make the study of multilingualism inevitable, even in a country characterized by linguistic imperialism. As the abundant literature shows, for these people, Spanish is the language of their close family circle, but English gradually prevails when they start school. Consequently, their proficiency in the home language can decline, becoming unnecessary except for reasons of integration, namely, to demonstrate that family bonds are still firm and strong. Spanish thus becomes an identity marker and is recognized as such, which often leads to it being seen in a negative light or even to its stigmatization in the shape of language prejudices (cf. Salgado-Robles and Lamboy 2019; Valdés 2001). In fact, heritage speakers who use their home languages

[2] https://data.census.gov/table/ACSST1Y2023.S1601?q=Language%20Spoken%20at%20Home.
[3] https://nces.ed.gov/programs/digest/d23/tables/dt23_203.60.asp.

often do so at their own risk, for they are regularly treated with contempt because of the connection that is generally established between their languages and their ethnicity, race, or immigrant status (Ortega 2020:38).

One of the many language myths about heritage speakers in the United States is that their language background works against their integration. However frequently this false claim has been proven wrong in bilingual research, it is still a core belief of the mainstream language ideology and to some extent influences language policies. As to Spanish, this assumption has been generally accepted by many Latinos who have abandoned their home language. This they have done both of their own volition (as in the prime example of Rodriguez 2004) and on the initiative of civic movements that they themselves have decided to support for their own good. Propositions to obstruct bilingual education were passed in California with the support of none other than the Latino community itself (see Proposition 227 and other debates on more lenient legislation, such as Proposition 58: Bilingual Education) (Orellana et al. 1999).

As is usually the case in a monolingual mindset, all deviations from the standard are blamed on Spanish. Whether it be code-switching, calques, borrowings, or even the hint of an accent, any excuse is good enough for claiming that English is an endangered language and, consequently, its social status in the region is also under threat. The whole concept of translanguaging, natural crossovers between languages which are regarded as resources that feed into each other, is alien to the dominant language ideology.

The gradual encroachment of the majority language leads to the gradual loss of the heritage language, for as language programmes often neglect the latter, and it eventually suffers attrition. Over time, heritage speakers simplify the verb system and neglect those verb tenses that are cognitively more demanding – typically the compound tenses expressing the perfective or progressive aspect – and/or overuse subject pronouns – which sounds odd in Spanish, a pro-drop language that often omits them (Pascual y Cabo and De La Rosa 2015; Poteau 2019; Potowsky 2018; Rodríguez and Brandl 2019). Hardly ever used in writing, the home language is solely employed for conversation and then only incidentally, certainly not for creating a metanarrative that challenges, for instance, the hegemonic historical account (Achugar 2009; Schlleppegrell 2004).

All this occurs in an atmosphere referred to as 'blatant Hispanophobia', in which all vestiges of the original language should disappear in what has duly been called the 'eradication model', according to which students should unlearn their mother tongue because it is deemed inappropriate. The teaching methods currently being implemented are often intended for children,

not adults; for monolinguals, not bilinguals; and for the totally illiterate. They emphasize word perception skills instead of comprehension and conceptual development (Villarreal 1981:161). The learning gap caused by the lack of a proper language transition to mainstream education converts heritage students into 'long-term English language learners'. Research has demonstrated that in terms of performance, their test results are about three years below their actual grade level in English literacy and three and half years below in Spanish literacy, with a cumulative high school grade point average of 1.3 (69 per cent) or D+ (Flores and García 2017; Menken and Klein 2010).

## 2.6 Conclusion

Literacy is a dynamic process, one that begins in infancy and continues to develop through adolescence and adulthood. However, social determinants can impede its full maturation, and a lack of usage or motivation may lead to stagnation or decline in adulthood. Similarly, biliteracy – the ability to achieve literacy in two languages – also faces challenges that can result in varying outcomes. These include alleged *zerolingualism* (difficulty with academic language in both languages), *semi-lingualism* (partial proficiency in both languages), or full biliteracy.

In the study of biliteracy, four key dimensions must be examined: contexts, media, content, and development. Whether the languages in question are majority or minority languages, prestigious or marginalized, rich in literary tradition, structurally distinct, etc., are factors influencing the process of biliteracy acquisition.

To illustrate the complexities and nuances of biliteracy development, the journey of a Spanish–English bilingual speaker has been described in a case study. This individual's path showcases the transition from struggling to write a biographical account in her first L1 to mastering the composition of a technical essay in her L2. This story reflects one of many successful outcomes when a multilingual environment fosters biliteracy.

Nevertheless, many educational systems remain resistant to multilingual education due to cultural, social, or political reasons. This chapter has also examined two specific contexts that highlight the difficulties of biliteracy acquisition: the cases of multilingualism and bi-illiteracy in Ceuta and Melilla (Spain) and in the United States.

Language acquisition is a complex phenomenon, and achieving proficiency in two languages can be twice as complex. As in all transformations, changes in the language system can only be validated in the long run. The inner workings of biliteracy have two permanent features. On the one hand,

biliteracy follows a well-structured path where languages are mostly distributed across domains at different stages in life. More linguistically demanding domains require proper support for controlling the other language, which calls for facilitating transitions across languages. This principle of complementarity is rooted in the acknowledgement of the other languages, which could not be further from a non/non approach (García and Wei 2014).

Biliteracy is not an immutable state, for the dominant language of bilinguals can change over time depending on their milieu and how frequently they use their two languages. Indeed, language dominance in individuals may change over a lifetime (Grosjean 2019).

So, in addition to different levels of L1 and L2 proficiency and use, language dominance in bilinguals can change over the course of their lives. This is why it is essential to acknowledge the language repertoires of multilinguals in education settings and offer support programmes that many education systems have implemented but others have not. Instances like languages of schooling in Europe or bilingual programmes in the United States in their many forms are responsive to the fact that learners enter school with a range of languages that need adequate attention. Biliteracy development over the years is better served through paired literacy models in which students learn to read in their native tongue and the majority language in the earliest stages of their schooling. Everything points to the fact that emerging bilinguals perform better as regards reading outcomes in bilingual programmes that include home language literacy instruction than in programmes in which the majority language is the sole medium of instruction (e.g. August and Shanahan 2006; Genesee et al. 2006; Greene 1997; Rolstad et al. 2005; Slavin and Cheung 2005).

## Notes

English translation of Figure 2.2. The original syntax has been respected as much as possible.

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Antonio Machado

Life of Antonio Machado. He died 22 February 1939. He was born in Seville on a night in July 1875. He lived in the palace of Dueñas on the street with the same name. His father was named Antonio Machado Álvarez, his mother Ana Ruiz they married in 187. They had Antonio and his brother Miguel to whom he was very close, later they discovered theatre. Antonio Machado (Father), died in 1893 and his grandfather in 1896.

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CHAPTER 3

# *Bilingual Academic Lexis*

## 3.1 Introduction

The linguistic structure of languages has traditionally been divided into theoretical levels (phonetics, phonology, morphology, syntax, semantics, and pragmatics). Nevertheless, these levels are inseparable in practice. In the case of lexis, for example, the proper identification of a word does not solely rely on semantic information but also on knowledge of phonetics and phonology (e.g. in oral language, 'sink' must not be mistaken for 'think'), morphology (e.g. as 'disobey' contains the prefix dis-, it means the opposite of 'obey'), syntax (e.g. in written language, 'produce' needs to be identified as a verb, 'to create', or as a noun, 'farm product'), and pragmatics (e.g. 'please' may be used not only to ask politely for something but also to acknowledge humorously a joke). Furthermore, all these types of knowledge interact (e.g. the pronunciation of 'produce' helps to categorize it either as a verb or a noun, thus combining both phonological and syntactic knowledge).

The blurriness and overlaps of language levels, among other factors, have spawned Complex Dynamic Systems Theory in language learning, in which language is viewed as a set of interconnected subsystems (e.g. the syntactic, phonological, or lexical kind) that interact with and influence each other. Furthermore, the nature, direction, and strength of these influences mutate throughout an individual's life, being affected by variables, such as age, proficiency, and the number of languages spoken (De Bot et al. 2007; Larsen-Freeman and Cameron 2008). Moreover, this variability is not only intra-individual. The members of a speech community also interact with each other, while language is also constantly shaped by their social interactions (for language as a complex adaptive system, see the 'Five Graces Group' et al. 2009).

In spite of the interconnectedness of subsystems, their individual study is necessary to comprehend the complex picture that language competence paints, even more so in the case of bilinguals. In an ingenious

metaphor, Libben (2017) compared psycholinguistic research to quantum physics, for it is impossible to have a concrete physical conceptualization of the brain. He proposed that a word in the mind should be conceptualized as 'encapsulating a set of possibilities that may or may not be manifested by individual speakers of a language' (Libben 2017:54, in Dóczi 2019).

Accordingly, this chapter reviews those possibilities across the academic lifespan, focusing on the development of lexis in bilingual academic language. Firstly, some methodological aspects of research, such as what is understand by lexis, why it is relevant, and how it is conceptualized and measured, are examined, before highlighting the differences between the lexical representations in the comprehension of monolinguals and bilinguals. Lastly, the evolution of bilingual academic lexis is reviewed and illustrated by some examples of its development.

## 3.2 Defining Lexis

There can be some confusion about the meaning of the terms 'lexis', 'lexicon', and 'vocabulary'. Traditionally, 'vocabulary' simply referred to the list of words in a language or in an individual's repertoire, whereas 'lexis' also included all the layers of lexical knowledge necessary to understand and produce language (Caro and Rosado 2017). Similarly, the 'mental lexicon' was understood as the 'storage repository for words and the information we know about those words' (Barcroft et al. 2011:572; Browne 2012). Nowadays, however, most researchers use lexis, lexicon, and vocabulary interchangeably (Jackson and Zé Amvela 2000).

In sum, it could be said that lexis refers to words, namely, the smallest sequence of sounds (in spoken language) or of letters (in written language) which have meaning and can always stand on their own. In terms of written language, for example, 'words' can be understood as any string of letters located between two spaces. This definition, however, becomes more complex, as there are compound words and multi-word expressions that can be perceived as a single lexical unit. This issue is addressed at the end of Section 3.5.

## 3.3 The Importance of Lexis

From a speaker's point of view, words are the building blocks of language (Barcroft et al. 2011). Lexis is, therefore, an essential component in language acquisition. Compared to the impact of syntactic violations

(e.g. subject-verb agreement), lexical errors may hinder successful communication. In other words, a speaker can get by without grammar but not without vocabulary (Folse 2004; Caro and Rosado 2017). Similarly, having a rich lexical repertoire makes all the skills – listening, speaking, reading, and writing – easier to perform (Nation 1994).

The study of lexis is relevant because it can be used to analyse both the complexity and quality of language production, allowing to make inferences about the stage of development and proficiency of the speakers producing it, and to establish who will be able to understand their utterances.

In terms of 'quality', lexical richness is considered one of the most important proxies for text quality while also being perhaps the most commonly used one (Crossley 2020). Overall, there seems to be a consensus that more proficient writers produce words that are more difficult to process and recognize. Usage-based approaches to language acquisition, which hold that language structure emerges from its use (Ellis 2002), understand this as a consequence of the low exposure that speakers have to 'more difficult' words. On the other hand, psycholinguistic approaches, which contend that language structure emerges from internal cognitive processes (Ellis 2012), hold that it is because of properties inherent to these complex words.

Regardless of the cause, vocabulary use is considered to be a strong predictor of the academic success of both L1 and L2 speakers. Students who employ a wider and richer vocabulary have been found to obtain better school results. This has important implications for educational practice and language testing. Furthermore, innovations in natural language processing (NLP) have integrated the findings of research on writing quality to expedite automatic essay scoring and writing evaluation, providing real-time feedback to students and helping teachers and administrators to do their jobs. It is only a matter of time that voice-recognition software will facilitate this task for oral production, too.

As for 'development', charting the lexical changes of the production of speakers may help to gain a better understanding of L1 and L2 language acquisition and to inform stakeholders. Once benchmarks for development have been described (i.e. the expected lexis for students at a certain age or grade), gaps and thresholds can be identified. This should allow to set teaching targets at particular levels and to design educational interventions. Furthermore, pre- and post-tests and control groups may help to analyse the impact of particular courses and teaching practices.

## 3.4 Lexical Representations in the Comprehension of Monolingual and Bilingual Speakers

According to Verspoor and Schmitt (2012), the lexis acquisition process is based on the 'association' of words with observable entities and, later on, with the mental representation of those entities (i.e. with concepts). This association requires 'categorization' (e.g. categorizing 'dog' as a type of animal), 'abstraction' (having the ability to identify the common features that all dogs possess but which are not shared with other animals, that is, the defining features that make them dogs), and 'schematization' (identifying that the words 'dog' and 'dogs' refer to the same reality). This leads to a 'construction', which is a form-meaning pair (a signifier and the signified, in Saussure's words). Furthermore, these symbolic units can be combined to produce more complex ones by means of composition (e.g. combining 'dog' and 'house' to form 'doghouse'), a process that can be recursive.

Newly acquired lexis needs to be stored in the mind. This process is believed to be structured in a logical way (Aitchison 2012), given the speed at which words are retrieved and the characteristics of human memory, which is only flexible and extendible if information is structured. That is why the storage process is often referred to as 'lexical organization'. Several models have been developed to represent this process (for a review, see Dóczi 2019), whose implications are tested in behavioural experiments (e.g. word associations, cross-linguistic translations, picture naming, etc.) and with neuroscience methods (e.g. magnetic resonance imaging).

The most supported theory is currently the revised spreading activation model (Bock and Levelt 1994), which assumes that concepts are connected to one another in nodes whose distance depends on the degree of their association (e.g. 'sun' and 'planet' are more closely interrelated than 'sun' and 'table', but maybe not as closely as 'sun' and 'beach' and 'sun' and 'yellow'). In this intricate web of semantic fields, according to this model, each concept is accompanied by morphological, syntactical, and phonological information.

Once words have been stored in the mind, they need to be retrieved in order to be useful. This process is known as 'lexical access', which can vary depending on the word's characteristics. For example, words that are frequent in the language (i.e. words often encountered and used) are accessed more swiftly and easily (Balota et al. 2007). However, other factors also play a role, such as the number of orthographic neighbours (words differing in only one letter) and the number of derivations that a word has (Barcroft et al. 2011). For instance, 'ink' is accessed more easily

than 'mud', as the latter needs to be distinguished from 'mad', 'mum', 'bud', and so forth.

In the case of bilinguals, it is believed that all these processes (lexical acquisition, organization, and access) have special characteristics. Regarding lexical acquisition, bilinguals are thought to be better word learners than monolinguals (Kroll and Ma 2017). In other words, they acquire lexis faster. There are several explanatory theories, suggesting that they are more efficient because they have a longer language learning experience or because their executive function – namely, the set of higher-order cognitive abilities, such as self-control, planning ahead, and staying focused, which are necessary to pursue and achieve a goal (Cristofori et al. 2019) – is more developed for language use. Nevertheless, recent studies have questioned the purported advantage that bilinguals have regarding their executive function (Grundy 2020).

With respect to 'lexical organization', the original division in the field between separatist and single-lexicon supporters has apparently been surmounted. At present, the lexical items of the different languages that an individual speaks are thought to be stored in a common lexicon with interrelated concepts (Dóczi 2019).

The most well-known lexical development model for bilinguals is the revised hierarchical model (Kroll and Stewart 1994), according to which low-proficiency L2 learners rely on L1 translation for lexical access. In plain English, the mental concept leads them to the L1 word, after which they work their way from there towards its L2 counterpart. As proficiency in the L2 increases, the links between the concept and the L2 word become stronger, with speakers consequently moving away from the L1 translation strategy (for a more detailed explanation, see Barcroft et al. 2011). More recent models, such as the modified hierarchical model (Pavlenko 2009), incorporate nuances regarding the strength of links and cross-cultural differences (for a full review of lexical organization, see Dóczi and Kormos 2016).

Finally, regarding the lexical access of bilinguals, research has shown that lexical information from both languages is constantly activated when they perform language-related tasks, in a process known as 'bidirectional transfer' or 'cross-linguistic influence'. The strength of these interrelations varies depending on whether bilinguals are listening, speaking, reading, or writing, and on the structural overlap between their languages (Kroll and Ma 2017). Nevertheless, they need to regulate the activation of the language not in use at all moments of communication, even when they are using their L1.

The development of lexis in bilingual academic language is the focus of this chapter. Before analysing how it evolves throughout an individual's

lifetime, some methodological aspects of research need to be discussed, such as how lexis is conceptualized and measured.

## 3.5 The Conceptualization and Measurement of Lexis

As discussed earlier, there is broad consensus on the relevance of vocabulary knowledge. This is not so widespread, however, when it comes to the conceptualization of this construct for measurement purposes. Some widely used distinctions are as follows:

- The distinction between 'breadth' and 'depth' of vocabulary knowledge (Anderson and Freebody 1981). 'Breadth of vocabulary' refers to the number of words that individuals know, that is, the size of their mental lexicon. 'Depth of vocabulary' is the amount of information that they have on each of the words in their mental lexicon. Indeed, knowing a word requires information at all language levels (how it is written and pronounced, how it is inflected and derived, what part of speech it belongs to, how it collocates with other words, what it means in different contexts, how it is used in different registers, etc.).
- The distinction between 'receptive' and 'productive' vocabulary (Nation 2013). This distinction is based on the assumption that identifying and understanding vocabulary in someone else's message does not require the same knowledge as using vocabulary to create one's own message. Receptive knowledge is a prerequisite for productive knowledge, and not all the terms in a mental lexicon reach the far end of this continuum.
- The distinction between 'lexical organizations' (Chapelle 1994). As explained earlier, this refers to the way in which words are represented and connected to one another in the mind. Whereas proficient speakers tend to organize mentally words by semantic relations (i.e. in semantic fields), initial L2 learners rely more on phonological features (i.e. words with similar sounds).

Nonetheless, none of these distinctions is problem-free. The breadth and depth dimensions are inseparable, as analysing the number of words that an individual knows (breadth) presumes a certain level of knowledge of those words (depth) (Schmitt 2014). Regarding the receptive/productive vocabulary distinction, the productive vocabulary of speakers is not limited to what they actually produce, as they may have the ability to use one term but neither the need nor the desire to do so (Durrant et al. 2021). Lastly,

in terms of lexical organization, there is no consensus even on basic defining features, such as whether there are differentiated L1 and L2 lexicons or whether there is cross-linguistic interaction (Dóczi and Kormos 2016).

In research focusing on lexical development, the main area of concern is that of 'lexical richness'. Two of the most popular conceptualizations of this construct have been formulated by S. A. Crossley and S. Jarvis.

According to Crossley's (2020) model, the lexical richness of a text depends on three dimensions:

(1) Its 'lexical diversity', that is, the number of unique words that it contains. High levels of lexical diversity entail lower cohesion and greater difficulty: there are more unique words introducing new information that readers need to process and integrate into the discourse (McNamara et al. 2014). In contrast, the greater the frequency with which the same words are used across the text, the lower the lexical diversity and the greater the text cohesion will be.
(2) Its 'lexical density', namely, the proportion between content and function words. Function words are those that have little or no meaningful content and simply express grammatical or structural relationships between other words. They include determiners (e.g. 'an', 'that', 'my', 'whose', 'some', 'many', etc.), conjunctions (e.g. 'and', 'but', 'neither', 'although', etc.), prepositions (e.g. 'in', 'on', 'between', 'without', etc.), pronouns (e.g. 'she', 'we', 'anybody', 'someone', etc.), auxiliary verbs (e.g. 'be', 'have', 'do', and 'get'), modal verbs (e.g. 'may', 'might', 'could', 'will', etc.), qualifiers (e.g. 'very', 'really', 'quite', 'rather', etc.), and questions words (e.g. 'where', 'how', 'who', 'why', etc.). Conversely, content words have specific meanings and include nouns (e.g. 'table', 'cow', 'sky', etc.), adjectives (e.g. 'hard', 'white', 'beautiful', etc.), adverbs (e.g. 'clumsily', 'today', 'often', etc.), and main verbs (e.g. 'run', 'read', 'write', etc.).
(3) Its 'lexical sophistication', that is, the proportion of advanced words. The problem lies in the operationalization of the advanced word construct. Traditionally, research has relied solely on low-frequency words (Laufer and Nation 1995); if a word was infrequent in everyday language, it was considered advanced. However, this construct has evolved to encompass a vast number of properties. As maintained by Crossley (2020:418):

> Sophisticated words have been defined as words that are more likely found in academic texts (Coxhead 2000), words that are less concrete, imageable,

and familiar (Crossley and Skalicky 2019; Saito et al. 2016; Salsbury, Crossley and McNamara 2011), words that have fewer phonological and orthographical neighbors, words that have higher latencies in word naming and lexical decision tasks (Balota et al. 2007), more specific words (Fellbaum 1998), and words that are less diverse based on context (McDonald and Shillcock 2001).

According to Jarvis's model (Jarvis 2013, 2017, in Vanhove et al. 2019), the lexical richness of a text is reflected in six dimensions:

(1) Its 'volume', that is, the total number of words in a text or its length. This dimension acknowledges the possibility that the perceptions of readers are affected by text length. In other words, they may expect something different from shorter or longer texts.
(2) Its 'rarity', namely, the frequency of the words used in the language as a whole. To a certain extent, this dimension corresponds to Crossley's lexical sophistication.
(3) Its 'variability', that is, its lexical diversity. This dimension also appears in Crossley's conceptualization. As has just been seen, it refers to the proportion of words in a language sample that are not repetitions of already encountered words.
(4) Its 'evenness', specifically, the proportionality of word repetitions. Taking lexical diversity one step further, the aim of evenness is to measure whether words are equally repeated in a text. One word may be repeated very often, whereas the rest only appear once, thus distorting the information provided by the lexical diversity of the text.
(5) Its 'disparity', that is, the proportion of words in a text that are semantically related.
(6) Its 'dispersion', namely, the distribution of repeated words in a text. This dimension seeks to analyse whether words are repeated uniformly throughout the text or are concentrated in the same section.

As can be observed, both conceptualizations are not incompatible. While Jarvis' model does not pay heed to lexical density (the proportion between content and function words), it attaches great importance to word repetition and supplements lexical diversity with two other dimensions – evenness and dispersion – to analyse not only whether words are repeated but also the way in which they are repeated. As Jarvis' model is more nuanced, however, it is more difficult to operationalize. Hence the importance of clearly establishing the theoretical model and the concrete measures that are being adopted when analysing the lexical richness of a text.

### 3.5.1 Measuring Crossley's Model for Lexical Richness

For lexical diversity, the most popular measure used to be the type–token ratio (TTR), a coefficient resulting from dividing the number of unique words in a text (i.e. types) by the overall number of words (i.e. tokens). However, TTR has proved to be extremely sensitive to text length and, therefore, a poor predictor of lexical richness when this is not constant. This occurs because, as the number of word tokens increases (i.e. as texts incorporate more words), there is less likelihood of those words being unique (McNamara et al. 2014), for which reason the resulting TTR tends to be lower.

For example, the sentence, 'There is a basket on the table', has a TTR of 1.0 (7 types divided by 7 tokens), which is the highest value of lexical diversity, every word being used only once. In a possible continuation of that sentence, for instance, 'There is a basket on the table; the basket contains a pear', the noun 'basket' and the articles 'the' and 'a' are now repeated, thus reducing the TTR to 0.75 (9 types divided by 12 tokens). The longer the text is, the greater the potential impact of this phenomenon will be, for which reason it is unadvisable to compare texts differing in length using TTRs.

In order to overcome these metric limitations, researchers began to use estimation algorithms, such as the measure of textual lexical diversity (MTLD) and vocd. The MTLD is calculated as the mean length of sequential word strings in a text which maintain a given TTR value (McNamara et al. 2014:67). Therefore, the focus changes from the TTR of a text to the number of words that it takes for a text to drop below a certain TTR. For example, if the TTR value of 0.72 is taken as a reference, a text is divided into word strings (words that follow one another, regardless of punctuation) with a TTR of 0.72, and the average number of words in those strings is calculated.

Similarly, vocd is calculated by means of a computational procedure that matches TTR random samples with ideal TTR curves (McNamara et al. 2014:67). Both indices allow researchers to compare the lexical diversity of texts differing in length, although validation studies tend to favour the MTLD over vocd (McCarthy and Jarvis 2010).

A much more straightforward dimension in Crossley's model is that of lexical density, which is studied by contrasting the proportion of content words in a text (i.e. the number of content words divided by the total number of words) with that of function words (i.e. the number of function words divided by the total number of words). These proportions are

given, as the direct result of operations (e.g. 0.42), as percentages (e.g. 42 per cent) or multiplied by 100 (e.g. 42).

Finally, lexical sophistication is measured according to the criteria selected for determining the 'sophistication' of words (i.e. advanced, academic, abstract, infrequent, or longer words, among others). The advances in computational linguistics have led to the automation of the processes for some of these criteria. For example, computational tools such as Coh-Metrix (McNamara et al. 2014) and MultiAzterTest (Bengoetxea et al. 2020) quantify the prevalence of low-frequency words by assigning them a frequency value according to reference corpora (e.g. for MultiAzterTest, a word is infrequent if it is used less than ten times per million in its reference corpus).

Both tools also incorporate the semantic information of a word, such as hypernymy (the number of hypernyms that a term has in a reference thesaurus) and polysemy (the number of entries for a term in a reference dictionary). These indices can be used as proxies for concreteness and specificity, as words with fewer hypernyms could be considered as being more concrete, and those with fewer meanings as being more specific. Although less popular, these tools also provide word-length measures, should longer words be regarded as being more sophisticated.

For its part, Coh-Metrix also includes psycholinguistic indices measuring the familiarity, meaningfulness, concreteness, and imageability of words, according to the Medical Research Council (MRC) Psycholinguistic Database (Coltheart 1981). This database, resulting from human evaluations of around 10,000 words, incorporates the average human ratings of words in the aforementioned domains. 'Familiarity' refers to how familiar a word seems to an adult on a 700-point scale (100 for unheard words and 700 for those heard almost every day). 'Concreteness' indicates how specific or non-abstract a word is on the same scale – 100 for words that score low in concreteness, like 'protocol' (264), and 700 for words referring to things that can be touched, heard, or tasted, like 'box' (597). 'Meaningfulness' refers to the extent to which a word can be associated with others, on the same scale – 100 for words with a weak association, like 'abbess' (218), and 700 for those with a strong association, like 'people' (612). Finally, 'imageability' indicates how easy it is to construct a mental image of a word, on an identical scale – 100 for low-imagery words, like 'reason' (267), and 700 for high-imagery words, like 'hammer' (618).

More recently, the tool TAALES (Kyle et al. 2018) has put together over 400 indices of lexical sophistication, also including word neighbours of the orthographical (e.g. 'cat', 'cap', and 'car'), phonographic (e.g. 'stone'

and 'stove'), and phonological (e.g. 'geese', 'cease', and 'piece') kind. As reviewed earlier, one criterion for lexical sophistication could be the use of words that have fewer phonological and orthographical neighbours.

### 3.5.2 Measuring Jarvis' Model for Lexical Richness

Jarvis' dimension of volume is completely straightforward: it is calculated by counting the total number of words in a text. The dimension of variability corresponds to Crossley's lexical diversity, whose operationalization has just been explained (TTR, MTLD, and vocd). As to rarity, it is the exact equivalent of word (in)frequency (the prevalence of low-frequency words), which was reviewed in Crossley's dimension of lexical sophistication. For the three remaining dimensions in Jarvis' model, the operationalizations are more complex.

For evenness, Jarvis (2013) uses the standard deviation of the total number of tokens per type (i.e. the number of times that each word is repeated). A small standard deviation would mean that most words are used the same number of times, whereas a large one would signify that some words are repeated often and others infrequently.

Regarding dispersion, the author computes it as the mean distance between different tokens of the same type, averaged over all types in a text (i.e. the mean distance between repeated words divided by the total number of words, excluding word repetitions). Nevertheless, due to technical difficulties, he admits that he currently computes it as 'the number of times that types are repeated within the next *n* (e.g. 20) tokens' (Vanhove et al. 2019:502).

Finally, for disparity, he employs the mean number of words in a text that share the same semantic meaning, according to the thesaurus WordNet (Fellbaum 2005).

### 3.5.3 Attempts at Simplification

As has just been seen, lexical richness can be conceptualized and operationalized in multiple ways. That is why it is so important for researchers to clearly state what they understand by lexical richness and how they aim to measure it when designing or communicating research. Nevertheless, studies focusing on the development of lexical richness tend to use only a combination of parameters. In fact, González-Fernández and Schmitt (2020) found high correlations between different aspects of vocabulary, which led Durrant et al. (2021:123) to suggest that not all needed to be

covered to paint an 'accurate overall picture of an individual's vocabulary proficiency'.

According to Vanhove et al. (2019), three of Jarvis's theoretical dimensions (2013, 2017) predict expert ratings of overall text quality: lexical diversity (variability), rarity (the number of less frequent words), and volume (the overall number of words). For their part, Crossley et al. (2011) attempted to identify the lexical indices that most accurately predict human ratings of lexical proficiency. After analysing word length, lexical diversity, word frequency, hypernymy, polysemy, semantic co-referentiality, word meaningfulness, word concreteness, word imageability, and word familiarity, they concluded that the best predictors of lexical proficiency were lexical diversity, hypernymy, and frequency, which accounted for 44 per cent of the variance in human evaluations.

### *3.5.4 Vocabulary Proficiency and Formulaic Language*

Lastly, an increasingly greater number of studies have been performed on the relationship between lexical proficiency and formulaic language. However, the conceptualization and operationalization of this construct are even more complex.

Wray (2018:267) defines formulaic language as 'any multiword string that is perceived by the agent (i.e. learner, researcher, etc.) to have an identity or usefulness as a single lexical unit'. Nevertheless, this definition is too open, as agents may perceive the identity or usefulness of a string depending on any number of reasons (Siyanova-Chanturia and Pellicer-Sánchez 2018). Some researchers, for example, not only include idioms, such as 'to get out of hand', and collocations, like 'office hours', but also lexical bundles, including 'I am going to', and conversational routines like 'nice to meet you'.

In spite of their complex operationalization, formulas are basic linguistic units that are key to meeting the expectations of particular language communities, hence their importance in the study of language acquisition. Durrant et al. (2021) distinguish between three general approaches to quantifying formulaic language in research: (1) studies enquiring into the use of word combinations in a learner corpus solely based on how frequently they appear in it; (2) studies looking into the use of word combinations in a learner corpus in contrast to their frequency in reference corpora; and (3) studies analysing the use of word combinations in a learner corpus based on subjective evaluations of what is considered to be formulaic.

## 3.6 The Evolution of Bilingual Academic Lexis

The intention of this section is to synthesize the research advances in the development of lexis in the academic life of bilinguals and to illustrate their lexical evolution with examples from different learner corpora. This review draws from Crossley's (2020) model of lexical richness (lexical diversity, density, and sophistication), dividing research findings into two sections: L1 and L2 lexical development.

### *3.6.1 L1 Lexical Development*

In L1 writing, the lexical diversity of texts as measured by indices controlling for text length (such as MTLD and vocd) was found to increase with age and quality (Malvern et al. 2004; Berman and Nir 2010; Crossley et al. 2011; Uccelli et al. 2013). In other words, the more mature and better writers L1 speakers were, the greater the number of different words they used in their academic production.

Table 3.1 shows two language samples extracted from the Lancaster Corpus of Children's Project Writing (Ivanic and McEnery 2000). They

Table 3.1 *L1 texts by the same student, at ages eight and ten (Ivanic and McEnery 2000)*

| |
|---|
| PHYSICAL ACTIVITIES |
| Waterpolo<br>Waterpolo is a bit like football except it's played in the water and you play it with your hands. You play it with a special Water Polo ball. Which is a bit like a light football. There are 2 nets at each end of the pool. |
| Table tennis<br>Table tennis is played with little bats a ping pong ball a table about a metre wide and 1 and a half metres long. It has a net across the middle of it. The point of the game is to try and hit it as many times as you can like when you do a rally in tennis. |
| JOSHUA TREE NATIONAL PARK |
| Joshua Tree National Park is in California and holds the most Joshua Trees. The tree was named 'Joshua' from the prophet Joshua. When these trees were seen by desert travellers they thought it was Joshua, the prophet with a spear in one hand pointing to 'Ai' in ancient Greece. |
| The Latin name of the Joshua tree is Yucca Brevifolia and its original name was Agua Caliente meaning warm water spirits. These trees can grow up to nine metres high and they grow in the Mojave Desert. |
| U2, the pop group, visited Joshua Tree National Park and were so impressed they wrote one of their most famous songs about it. |

are two L1 texts written by the same individual in different developmental stages as part of a school project (Year 4 and Year 6 of UK schooling when students are aged eight to nine years and ten to eleven years, respectively).

In line with previous research results, the lexical diversity of the second sample is more pronounced. Just by reading them, it can be perceived that the first sample uses more word repetition as a result of a default theme–rheme sentence pattern. In quantitative terms, the MTLD index of the Year 4 production is 46.7, whereas that of the Year 6 production is 52.6. All of which means that the latter is more diverse, as it takes more words for its strings to drop below the established threshold of lexical diversity.

Regarding lexical density (the proportion between content and function words), research has obtained contrasting results. Whereas some studies have detected negative correlations between the proportion of function words and text quality (Qualifications and Curriculum Authority 1999), others have not found any correlation at all, either with text quality (Uccelli et al. 2013) or age (Berman and Nir 2010; Hall-Mills and Apel 2015). In other words, there is only partial evidence that better writers use a greater proportion of content words in their compositions, an aspect that may depend on the writing genre.

In the language samples under analysis, the lexical density is lower in the Year 6 production when students are supposed to be more proficient and mature. Whereas the first sample has a lexical density of 0.49 (54 content words out of a total of 110 words), the second sample has one of only 0.39 (44 content words out of a total of 113 words). Therefore, the proportion of content words is lower in the second sample, in keeping with the contrasting results obtained in empirical studies.

Finally, in terms of lexical sophistication, most research has shown that more proficient L1 writers tend to use the following:

- Longer words (Haswell 2000; Crossley et al. 2011; Gardner et al. 2019).
- More infrequent words (McNamara et al. 2010; Crossley et al. 2011; Granados et al. 2022, 2023).
- More academic words (Douglas 2013).
- More specific and less polysemous words and more imageable and concrete words (Berman and Nir-sagiv 2007; Crossley et al. 2011; McNamara et al. 2013).
- Less meaningful words (McNamara et al. 2013).
- Less familiar words (Crossley et al. 2011).

Nevertheless, these findings should be treated with caution, as some studies have also detected conflicting results or no correlation whatsoever (for

an in-depth review, see Durrant et al. 2021). This may be owing to the sensitivity of these indices to text length, topic, and genre. As to the two language samples under analysis, when using the tools MultiAzterTest and Coh-Metrix, there is only partial agreement with those findings.

In the second sample, produced by an older and supposedly more proficient version of the same individual (two years older), words tend to be longer, having an average of 4.5 letters and 1.5 syllables (as opposed to 3.7 and 1.3). These words could also be regarded as being more concrete (having an average of 7.5 polysemic values, as opposed to 9.9, and an average rate of 307 in the MRC Psycholinguistic Database, as opposed to 210), less meaningful (436 in the MRC Psycholinguistic Database, as opposed to 455), and slightly less familiar (567 in the MRC Psycholinguistic Database, as opposed to 574).

Nevertheless, word frequency is practically the same in both samples, and the words in the second sample could be considered to be more specific (6.4 hypernym values, as opposed to 5.5) and slightly more imageable (567 in the MRC Psycholinguistic Database, as opposed to 574).

### 3.6.2 L2 Lexical Development

Research on L2 writing is much more abundant owing to the greater interest that it has aroused in the field of L2 acquisition. This has led to an enormous pool of studies from which to draw empirical support for development.

In L2 writing, the lexical diversity of texts, as measured by indices controlling for text length (such as MTLD and vocd), has been found to increase with age (Daller et al. 2013; Mazgutova and Kormos 2015; Granados et al. 2022) and in quality (Jarvis 2002; Yu 2010; Crossley and McNamara 2012; Guo et al. 2013; Bestgen 2017; Treffers-Daller et al. 2018; Vajjala 2018). Therefore, the results of L2 research agree with those of L1 research in that more mature and proficient writers have a greater mental lexicon and display this greater lexical diversity in writing.

Regarding lexical density, L2 research also coincides with L1 research, in which limited and contrasting results have been obtained. Some studies have detected positive correlations between lexical density and quality (Banerjee et al. 2007; Gregori-Signes and Clave-Arroitia 2015) and between lexical density and age (Gregori-Signes and Clave-Arroitia 2015; Hou et al. 2018). Nevertheless, other studies have not found any correlation either with text quality (Vidakovic and Barker 2010) or age (Lorenzo and Rodríguez 2014; Zheng 2016). As before, there is only partial evidence

that better writers use a greater proportion of content words in their compositions.

Finally, with respect to lexical sophistication, most research has shown that more proficient L2 writers tend to use the following:

- Longer words (Grant and Ginther 2000; Vidakovic and Barker 2010; Verspoor et al. 2017; Yoon 2017).
- More infrequent words (Crossley and McNamara 2012; Guo et al. 2013; Kim and Crossley 2018; Granados et al. 2022).
- More academic words (Banerjee et al. 2007; Daller et al. 2013; Gregori-Signes and Clave-Arroitia 2015; Verspoor et al. 2017).
- More specific and less polysemous words (Guo et al. 2013; Kyle and Crossley 2016).
- Less imageable and more abstract words (Crossley and McNamara 2012; Guo et al. 2013; Kyle and Crossley 2016; Qin and Uccelli 2016).
- Less meaningful words (Crossley and McNamara 2012; Crossley et al. 2012; Guo et al. 2013).
- Less familiar words (Crossley and McNamara 2012; Guo et al. 2013; Aryadoust 2016; Kyle and Crossley 2016).

Research findings are, therefore, almost totally compatible with the L1 and the L2. The only notable difference has been detected in the imageability and abstractness of words, as more proficient L2 writers tend to use less imageable and more abstract ones (Crossley and McNamara 2012; Guo et al. 2013; Kyle and Crossley 2016; Qin and Uccelli 2016), and more proficient L1 writers, more imageable and concrete ones (Berman and Nir-sagiv 2007; Crossley et al. 2011; McNamara et al. 2013). However, this deviation may be the result of the study contexts and the different levels of maturity and proficiency of the speakers sampled.

The L2 evolution described earlier (see Table 3.2) was detected in a three-year longitudinal study in which the same students (enrolled in bilingual secondary education) were asked to write history essays on topics from the official curriculum being studied in class.

As noted earlier, the lexical diversity of the second text is higher. When enquiring into the reasons behind this greater breadth of vocabulary in the student's essays, the first feature to emerge is the persistence of semantic extension over time (Harmon and Kapatsinski 2017). Learners initially extend the L1 semantic load of lexical items to L2 equivalents. This was represented in the essays by the presence of calques, like 'conform', which is employed with the meaning of the Spanish verb *conformar* ('form', 'make up', 'constitute').

Table 3.2 *L2 texts by the same student at ages fourteen and sixteen (Granados et al. 2022)*

| | History essays in 9th grade and 11th grade. Student 10 |
|---|---|
| 9th grade (fourteen to fifteen years old) | On September 11th 2001, some terrorists hijacked two planes and crashed them into the Twin Towers in New York. The planes crashed on the 90th floor, so many people were trapped and they can't went out. Some people jump to street and died. Some minutes after the crashed, the towers fell down.<br>This happened because some years before, USA had a war with Iraq because Americans think Iraq had nuclear weaponry. As a revenge Iraq hijacked some planes and wanted to crashed them into some important buildings of USA, two of them were The Twin Towers.<br>Because many innocent people died, because some unforgiving terrorists want to harm Americans. |
| 11th grade (sixteen to seventeen years old) | The Spanish Civil War began on July 1936. The rising took place in Melilla, where the general Francisco Franco rebelled against the current Republic. This rebellion had been planed by different generals from different parts of Spain. Therefore, it quickly spreaded across the country, having under control a third of the country after a few days. On the one hand, the national group, Franco's one, received the support of fascist countries such as Germany or Italy, as well as Portugal. On the other hand, the republican army did not get the support of other democratic countries but did get it from the Soviet Union, due to the numerous comunists politicians that conformed the government.<br>Franco won almost every battle they had had so, by the end of 1939, all Spain was under his control. As a consequence of the battles many people died, but many others were killed by their neighbours, who acused each other as a result of past disagreements. In addition, republicans were shooted when a new town was occupied.<br>Some important consequences of this war was the high number of deaths and the separation that suffered the society. This lead to difficulties such as to get a job to those people who were in the republican part at the beginning of the war. Moreover, there was a extremely high number of dissapeared people. |

Semantic extensions decline over time, however, when L1 intake is blocked out and L2 intake has to do with L2 relations. Research has called this process a transition from 'word association representation' to 'conceptual mediation representation' (Spöttl and McCarthy 2004). These results show that in this bilingual model, once compulsory education has been completed, there are still indications of overreliance on the L1 for word generation in the form of transliteration, calques, or extreme translanguaging. These are different forms of the 'one-to-one principle', namely, the

naïve belief that lexical units in the two languages match perfectly. High idiomaticity levels are an indication of L2 proficiency, but here the L1 still influences L2 production, especially as regards academic vocabulary (see, e.g. the misspelling of cognates like *'comunists' and *'acused', plus the structural calques *'the separation that suffered the society' and *'get a job to those people').

The second dimension in which evolution was observed was lexical sophistication, particularly as regards the familiarity, concreteness, imageability, and meaningfulness of words. These are key indices for writing proficiency: less familiar words are more difficult to learn and take longer to process (McNamara et al. 2014), word concreteness and word imageability are indirectly proportional to abstraction (Barber et al. 2013), and the average meaningfulness of a text is indirectly proportional to text difficulty since words with a stronger association imply that readers need to process and integrate less new information into the discourse (Crossley and McNamara 2012). In this sample, the student in question did indeed use less concrete and imageable words; that is, there was a greater degree of abstractness. Contrary to Crossley and McNamara's (2012) findings, however, familiarity remained constant and there was an increase in the meaningfulness of lexical items; namely, they had a greater degree of associativity. This divergence might have been due to the age and the developmental stage of the students participating in the study, as they were far from reaching top proficiency levels.

In terms of meaningfulness (associativity), one implication of the net gains reported is that lexical growth is not random but develops in semantic networks. The second sample, from 11th grade, includes a wide variety of words relating to conflict: 'war', 'battle', and 'rebellion'. Indeed, lexical development goes hand in glove with a better control of derivational mechanisms which improve the quality of academic writing. In the second sample, three different word forms belonging to the same word family concur: noun ('rebellion'), adjective ('rebel'), and verb ('rebelled'). Derivational expertise goes a long way to helping text cohesion and cross-references. The new constellation of semantic fields not only includes nominal groups, as grammar words for expressing functional categories also increase over time, as will be seen later regarding the expression of causality.

As to abstractness, research has observed that abstraction in academic writing is achieved by means of signalling nouns, namely, abstract nouns that refer to a general area of meaning whose specific meaning is found elsewhere in the clause or text (Flowerdew 2015:96). One such example can be detected in the second sample (11th grade), in the account of a historical

episode in which 'difficulties' are mentioned 'for the armies involved in warfare'. The actual embodiment of such difficulties is only found further on in the sentence. This dummy word exists mostly for the sake of anticipating semantic processes, here of a historical nature. Lexical gains, therefore, follow a tendency towards more abstract language.

The development of abstraction in written language relates in part to that of nominalization. Nominalization characterizes mature academic language like no other construct (Lorenzo et al. 2019; Granados et al. 2022). At earlier ages – as in 9th grade – language includes more verbs and more prototypical theme/rheme sentences, before evolving over time and becoming more nominal. Terms like 'separation' and 'support' represent the typical grammatical metaphor, whereby noun phrases are used instead of verb-like sentences. As is well known in functional systemics, nominalizations freeze actions and transform eventful episodes into non-temporal abstract processes: as in the use of 'rising' (as in a coup d'état) in the second sample, as opposed to a non-nominalized 'X rose against Y' pattern, which would have been more typical in the case of a younger student.

When describing this compositional device, Halliday et al. (2014) posited that when writers express a process by means of nominalization, a rhetorical tension is created between the semantic level (which describes a process as if it were an agent undertaking an action) and the lexicogrammatical level (the actual nominal word forms that embody the action). They went on to say that this is regarded as a metaphor because the end result is a virtual entity which only exists as semiosis. The use of 'rising', instead of military insurrection, in the second sample further elaborates on the metaphor within. The fact that the action described ('the military rose in arms') is represented by a neutral or even positive action ('rising') ties in with the fascist propaganda following the military coup. This bilingual student's command of history vocabulary demonstrates not only advanced lexical knowledge but also the consolidation of abstract thought in ideological writing (e.g. 'the support of fascist countries such as Germany or Italy', 'the numerous *comunist politicians that *conformed the government', and 'as a result of past disagreements').

In addition to the differences in lexical constituents, the essays in the second sample show variations in discourse texture. In later stages, they are more densely packed with lexical collocations (e.g. adverb + adjective, like the phrase 'extremely high number of *dissapeared people', in the sample from 11th grade). This implies a new approach to text construction involving longer units with more pre- and post-modifications.

### *3.6.3 L1–L2 Lexical Development*

Granados et al. (2022) performed a longitudinal study on the development of biliteracy (L1 Spanish and L2 English) of twenty students enrolled in a CLIL programme in Andalusia (Southern Spain). A bilingual learner corpus consisting of history essays was compiled when they were in 9th and 10th grade. These essays were then processed with MultiAzterTest, while a correlation analysis was conducted to determine whether any parallels could be drawn between the development of their linguistic dimensions.

From a lexical point of view, the study detected positive correlations in the development of the following language parameters:

- *Lexical density*. Both the L1 and L2 texts had a higher proportion of content words as students progressed through the different stages of education, indicating that more meaningful content was being expressed.
- *Lexical sophistication*. The students used increasingly longer words in both languages (which, according to McCarthy et al. 2006, tend to be more complex and more difficult to process), and a higher proportion of rare content words. In only two years, the proportion of rare content words per 1,000 words doubled in L1 Spanish and quadrupled in L2 English. Also noteworthy is the fact that the students tended to use around twenty more rare words (per 1,000 words) in L1 Spanish, regardless of the time of production.

These findings are consistent with previous research on L1 and L2 lexical development. Furthermore, a mixed-model analysis confirmed that the fixed effect of time and language on such progress was significant, unlike the random effects introduced by the students. The significant effect of time on the results confirms that an evolutionary approach to language development accurately interprets the increase in the metrics. The significant effect of the language used indicates that, despite its parallel evolution, there were marked differences between the students' proficiency in L1 Spanish and L2 English. For their part, the non-significant random effects introduced by the students indicate that they all evolved across the board, regardless of their individual traits.

### *3.6.4 Lexical Development and Formulaic Language*

There are multiple theories as to whether the use of written formulaic language increases or decreases as students mature and become better writers.

On the one hand, the social view of formulaic language supports the assumption that developing writers mimic their speech community and use more formulas, with some psycholinguistic models contending that they memorize more word chunks and increase their formulaicity. On the other hand, certain psycholinguistic models maintain that as learners progressively unpack word chunks, their ability to use these words individually increases and, conversely, they resort less to formulaic language (Durrant et al. 2021).

Research on L1 formulaic language is thin on the ground. Of the two studies identified, Crossley et al. (2012) found that the frequency value of phrases was negatively correlated with writing quality, which would mean that, as occurs with individual words, the more infrequent phrases were, the better their writing was. Additionally, Durrant and Brenchley (2022) showed that children increased their use of collocations and adopted a more academic collocation style as they progressed through the education system.

In this sense, L2 research is again more abundant and points in the opposite direction. Whereas better L1 writers pursue sophistication and concentrate on differentiating their writing style (i.e. their use of formulas) from the mainstream, L2 writers aim for acceptance and focus their efforts on following the patterns of mainstream L1 writers (Crossley 2020). That is why high-proficiency L2 writers use a greater range of phrasal structures common in an L1 compared to low-proficiency L2 writers (Li and Schmitt 2009; Ohlrogge 2009; Vidakovic and Barker 2010; Kyle and Crossley 2015).

Having said that, it has also been confirmed that L2 writers are unable to use as many sequences as L1 writers (Durrant and Schmitt 2009; Chen and Baker 2014) and usually overuse common phrases while underusing academic ones (Chen and Baker 2010, in Juknevičienė 2009; Crossley 2020).

## 3.7 Conclusion

As has been seen, lexis refers to the list of words in a language or in an individual's repertoire, including all the layers of lexical knowledge necessary to understand and produce language. It is a very relevant area of research for both L1 and L2 acquisition, as lexis can be used to analyse both the quality of texts and the stage of development of speakers.

In the mental lexicon, concepts are connected to one another in nodes whose distance depends on the degree of their association. In this intricate web of semantic fields, each concept would be linked to a word and to layers of morphological, syntactical, and phonological information. This mental model changes slightly for bilinguals. Low-proficiency L2 learners

tend to rely on L1 translation for lexical access. That is, the mental concept leads them to the L1 word, from where they then work their way towards the L2 word. As proficiency in the L2 increases, the links between the concept and the L2 word become stronger and speakers start to abandon the L1 translation strategy. Nevertheless, research has shown that the lexical information from both languages is constantly activated when bilinguals perform language-related tasks, regardless of the language in use.

Lexical richness can be conceptualized in many ways, two of the most popular ones being Crossley's (2020; lexical diversity, density, and lexical sophistication) and Jarvis' (2013, 2017; volume, rarity, variability, evenness, disparity, and dispersion). Hence the importance of clearly establishing the theoretical model and the specific measures adopted when analysing the lexical richness of a text. In this regard, advances in NLP have paved the way for the automated evaluation of the lexical richness of texts. Computational tools such as Coh-Metrix, MultiAzterTest, and TAALES include indices that measure particular aspects of lexical richness.

From the point of view of lexis, as bilinguals mature and improve, their texts display a greater proportion of unique words (lexical diversity), may have a greater proportion of content words (lexical density), and contain longer, more infrequent, more academic, more specific and less polysemous, less associable, and less familiar words (lexical sophistication). Only one difference has been detected between L1 and L2 development: whereas more advanced L1 writers use more imageable and concrete words, more proficient L2 writers opt for less imageable and more abstract words. However, this divergence could be the result of the different levels of maturity and proficiency of the speakers sampled or the different research contexts.

Finally, formulaic language is a developing area of research. Findings to date seem to indicate that high-proficiency L2 writers use a greater range of phrasal structures common in L1 language compared to their low-proficiency peers.

CHAPTER 4

# *Bilingual Academic Syntax*

## 4.1 Introduction

Regardless of whether they have been produced before and irrespective of their meaning, language has certain properties that make sentences correct or incorrect. Ask any AI tool to generate a random sentence that makes no sense, and in all likelihood, the result will be well-formed from a linguistic point of view, in spite of its randomness of meaning. For example, in reply to this prompt, the world-famous ChatGPT generated the sentence, 'Sunflowers tap dance underwater, teaching pineapples the art of storytelling through interpretive jazz hands.'

In other words, AI has mastered grammar. In a landmark achievement, computer engineers and computational linguists have managed to program machines to follow a set of language rules. In humans, however, this process is more complex. In addition to social, dialectal, historical, and situational variability, an individual's set of language rules is not fixed for life but evolves from the one- or two-word telegraphic stages of infancy to the huge complexity of adult language. Furthermore, a second set of rules comes into play in the case of bilingual individuals, a topic addressed here in further detail.

Specifically, this chapter focuses on the development of syntax in bilingual academic language. After clarifying several methodological aspects of research, such as what is understood by syntax, why it is relevant, and how it is conceptualized and measured, it highlights the differences between syntactic representations in the comprehension of monolinguals and bilinguals. Lastly, the evolution of bilingual academic syntax is reviewed and illustrated by some examples of development.

## 4.2 Defining Syntax

Syntax refers to the set of grammatical and morphological rules governing the way in which words and phrases are put together to form sentences in

a language (e.g. Biber et al. 1999; Quirk et al. 1985; McCawley 1998). They establish word order and movement conventions by changing the form of words and by using function words (Swan 2010). Nevertheless, the distinction between syntax and morphology is not clear-cut, as syntactic changes may require morphological ones (for an explanation of Complex Dynamic Systems Theory, see Chapter 3).

Linguists have long tried to describe the origins and characteristics of these grammatical and morphological rules. Traditionally, philosophers have considered the linguistic structure of languages as a window onto a greater dimension; onto the organization of reality, for classical Western philosophers such as Aristotle and Plato; onto the structure of God's creation, for medieval grammarians; and onto the structure of the human mind, for seventeenth- and eighteenth-century rationalist philosophers and some contemporary linguists (Swan 2010:560–561).

In this quest for a description of grammar and morphological rules, linguists have proposed a broad variety of 'grammars': generative, systemic functional, transformational, cognitive, and dependency grammar, among others. The essential feature that differentiates them is the choice of focus:

- 'Formally oriented' grammars focus on the internal structure of languages, on their form (i.e. meaning and context are ignored). They describe how to form strings of words that are valid in a language. These grammars usually subscribe to generativism (Chomsky 1957), assuming that the validity of word strings is determined by innate knowledge common to all languages (the Universal Grammar). That is why these grammars tend to highlight the features shared by all languages.
- 'Functionally oriented' grammars describe language on the basis of the functions that it performs. They focus on the structural features that languages must have in order to do what they do. These grammars usually subscribe to emergentism (O'Grady 2018), assuming that humans are born without innate language knowledge and that they learn languages as they learn other processes by being exposed to them. Language acquisition would be the result of detecting regularities in input and abstracting patterns.
- Nevertheless, 'practical' grammars, like the ones used for teaching, usually overlook these theoretical conundrums and paint a descriptive, superficial picture of syntax. The best example is the renowned *A Comprehensive Grammar of the English Language* (Quirk et al. 1985). Theoretical approaches aside, this chapter focuses on the empirical description of syntax and how it evolves in bilinguals throughout their schooling.

## 4.3 The Importance of Syntax

According to Swan (2010), syntax is indispensable for communication for three reasons:

- Vocabulary alone cannot specify the relationship between words (e.g. causality, agency, etc.). For example, the string of words 'Man hit car' does not specify whether the man hit a car or he was hit by it.
- Vocabulary alone cannot specify tense (present, past, or future), aspect (perfective or imperfective), or mood (indicative, interrogative, imperative, etc.). Using the same example, does the speaker mean to say that the man 'is hitting' the car, that he 'will hit' the car, or that he 'may hit' the car?
- Words are mostly labels, and we usually talk about particular items that fall under them. 'A man hit a car' (a random man and a random car), 'our man hit a car' (a man who we know and a random car), and 'the man hit his own car' are not the same.

Therefore, knowing how to produce and interpret language does not only require knowing a set of words but also how they are combined to form sentences. Furthermore, as with lexis, syntax is not only important from the speaker's point of view. For research purposes, it can also be used to analyse both the quality of texts and the stage of development of speakers.

Regarding quality, research has focused on identifying the syntactic traits of texts assigned a certain performance value (i.e. a mark). The aim is to provide guidance to teachers and assessors, to evaluate the impact of teaching courses, to validate the suitability of specific assessment tasks, and to enhance the functionality of automated scoring systems.

Describing language development across grade levels and over time can also help to identify teaching targets at specific moments of development, establish benchmarks, and understand the impact of certain teaching programmes and methodologies.

## 4.4 Syntactic Representations in Monolingual and Bilingual Speakers

In the previous chapter, it has been seen how the most supported theory posits that concepts are connected to one another in nodes whose distance depends on the degree of their association (e.g. 'sun' and 'planet' would be closer together than 'sun' and 'table', but maybe not as close as 'sun' and 'beach' or 'sun' and 'yellow'). In this intricate web of semantic fields,

according to this theory, each concept is accompanied by morphological, syntactic, and phonological information.

In other words, lexis and syntax go hand in hand in the minds of monolingual individuals. Each word contains information (i.e. rules) as to how it should be combined with others in order to form sentences and complex messages. Furthermore, over time, these rules transition from being item-specific (e.g. a node with all the rules on how to combine the word 'sun') to being more abstract (e.g. a node with the rules on how to combine nouns linked to the nodes for 'sun', 'table', 'planet', etc.).

With respect to the lexis of bilinguals, it has been noted how low-proficiency L2 learners rely on L1 translation for lexical access (i.e. the mental concept leads them to the L1 word, from where they work their way towards the L2 word). As proficiency in the L2 increases, the links between the concept and the L2 word become stronger, with speakers gradually abandoning the L1 translation strategy. Nevertheless, as already observed, research has shown that the lexical information of both languages is constantly activated when bilinguals perform language-related tasks, regardless of the language in use.

Regarding syntax, a similar process takes place in the minds of bilinguals. In an initial phase, there are no L2 syntactic representations whatsoever. Speakers therefore transfer L1 syntax and, at best, rely on explicit memory to imitate more proficient speakers of their L2. In an intermediate phase, L2-specific nodes are formed, presumably for more frequent structures in the initial stage. L2 words are associated with syntactic nodes of their own, which remain outside the network of L1 syntax. In a final phase, L2- and L1-specific syntactic nodes merge and language-independent nodes are created in the bilingual mind, whenever possible (Hartsuiker and Bernolet 2017), that is, for the syntactic commonalities between languages. Syntactic structures that are unique for each language remain in nodes connected only to the words of that language. Nevertheless, as occurs with lexis, it has been demonstrated that the grammar systems of both languages are constantly activated when a bilingual performs a language-related task, regardless of the language in use (Declerck et al. 2020; Hatzidaki et al. 2011).

This model is derived from a seminal study performed by Hartsuiker et al. (2004) employing structural priming, that is, the phenomenon in which speakers are more likely to choose a particular syntactic structure, after having previously processed a sentence with that same structure, as opposed to an alternative one (Hartsuiker and Bernolet 2017). Hartsuiker et al. (2004) provided different Spanish–English bilinguals with active or

passive sentences in their L1, before asking them to describe a picture in their L2, discovering that their L2 descriptions tended to repeat the same type of sentence that they had just heard. From this, it was inferred that residual activation of the syntactic structures used in written output in language A can only influence subsequent processing in language B if the same language-independent structures are involved (Declerck et al. 2020).

Since then, many cross-language priming effects have been reported for different language combinations and sentence structures (e.g. Huang et al. 2019; Jacob et al. 2017; Shin and Christianson 2012, in Declerck et al. 2020). In contrast, low-proficiency bilinguals do not display cross-linguistic structural priming, thus confirming that they have not yet formed shared abstract representations across languages (Hartsuiker and Bernolet 2017). Furthermore, they rely more on explicit memory strategies, such as copying the prime sentence structure and making small adjustments.

Evidence for a shared syntax has also been detected in studies enquiring into languages in a more implicit way. For example, Declerck et al. (2020) found that bilinguals identified words significantly better in mixed-language sequences if they were 'grammatically correct', thus proving that speakers connect words from the two languages through shared syntactic representations. Finally, the fact that code-switching is so common in certain bilingual communities has also been considered to be evidence of a shared syntax (Myers-Scotton 1997).

The development of syntax in bilingual academic language is the focus of this chapter. Nevertheless, before analysing how it evolves during an individual's lifetime, some methodological aspects of research need to be discussed, such as how syntax is conceptualized and measured.

## 4.5 The Conceptualization and Measurement of Syntax

The field of language acquisition used to focus solely on fluency and accuracy (Brumfit 1984; Hammerly 1991). Fluency was conceived as 'the extent to which the language produced in performing a task manifests pausing, hesitation, or reformulation' (Ellis 2003:342), and accuracy as 'the ability to produce error-free speech' (Housen and Kuiken 2009:461).

In the 1990s, this focus gradually shifted to the complexity, accuracy, and fluency triad (Ellis 2003, 2008; Ellis and Barkhuizen 2005; Skehan 1998). The traditional dyad was supplemented by a new dimension, complexity, which was understood as 'the extent to which the language produced in performing a task is elaborate and varied' (Ellis 2003:340). Syntactic

development can therefore be defined as a speaker's growing ability to produce more complex, accurate, and fluent syntax.

More recently, however, new trends have challenged this status quo. Controversy over the usefulness of error correction (Polio 2012; Truscott 1999; Van Beuningen 2010) and the declining use of native languages and norm deviations as measures of linguistic development (Holliday 2018; Hulstijn 2015; Melchers et al. 2019) have led to the predominance of linguistic complexity over the other two notions (Gregg 2001; Housen et al. 2019; Pallotti 2015).

In cognitive terms, linguistic complexity is highly suitable for studying language learning and acquisition (Gregg 2001, in Housen et al. 2019). It can be used to explore why some linguistic resources are supposedly more difficult to acquire, appearing and being mastered later on in the L1 and L2 acquisition process (Pallotti 2015), like, for example, why command of the present tense usually precedes the use of the past tense. However, there remains the problem of the measurement techniques. If the measurement of a language with published grammars and corpora containing millions of words is already complicated (Deutscher 2009), this task becomes 'practically impossible' when the developing language of a learner is involved (Pallotti 2015:4).

According to Bulté and Housen (2012), any measurement must be preceded by a description that establishes what complexity is (theoretical level), how it manifests itself in the discourse to be studied (observational level), and how these manifestations are to be quantified (operational level). Once this description has been made, some studies opt for quantifying the manifestations holistically and subjectively, with measurement scales used by expert evaluators, whereas others employ objective quantitative indicators (Wolfe-Quintero et al. 1998). Examples of such indicators include the number of subordinate clauses in a text, its noun density, and the number of modifiers per noun phrase. These indicators can be measured manually or computationally.

For Gregg (2003, in Smith et al. 2012), in order to describe syntactic development, two types of theory are required:

- A 'property theory', namely, the features, categories, and computations necessary to describe what a speaker knows at any stage of development. In the past, the syntax of native speakers was used as a tool to measure the level of development of L2 learners. This was, however, a 'comparative fallacy' (Bley-Vroman 1983:4), as researchers focused on 'non-acquisition of the categories of the target

language rather than on the learner's grammar as a system unto itself' (Vainikka and Young-Scholten 1994).

- A 'transition theory', that is, a description of how the interaction between language input and the human brain leads to development. This explanation depends on the above-mentioned approach to the very origins of grammar: emergentist models contend that development is the result of general learning mechanisms (which process language input as in any other type of learning) and their interaction with input, whereas generative models endorse the existence of a language-learning device with predetermined rules.

One of the main challenges of measuring development is that researchers do not have direct access to an individual's internal language (i.e. to all the language in the minds of individuals, which could be called their 'language competence'). Instead, they have to make do with external language (i.e. with the language that individuals produce, which could be called their 'performance'). That is why alternative methods, such as grammaticality judgement tasks (in which learners assess whether language instances are acceptable or not), combined with the measurement of their reaction times to neutralize their meta-linguistic knowledge (Wakabayashi 2011), are gaining ground.

A second challenge is posed by the abundance of syntactic features and their recognition within particular frameworks. Some grammars, for example, do not differentiate between the present participle and the gerund for the '-ing' form of verbs (e.g. Huddleston and Pullum 2002; Quirk et al. 1985), thus leading to different syntactic analyses. Furthermore, words in particular contexts can belong to different or ambiguous parts of speech. Such is the case of 'learning', which can be a verb or a noun, and 'Wednesday', which can be a noun or an adverb. The attribution of these features to one category or another has far-reaching consequences, potentially affecting all measurements. Considering them as nouns would lead to additional counts of noun phrases, which would impact not only noun phrase measurements but also those of other related features (modifiers per noun phrase, determiners, etc.).

To resolve this issue, many studies adopt a pragmatic approach aimed at simply identifying a set of syntactic features that correlate with and describe language development. Indeed, there are thousands of studies using hundreds of syntactic features to measure quality and development. In their analysis of Biber et al.'s (1999) *Longman Grammar of Spoken and*

*Written English*, Durrant et al. (2021) differentiate between the following types of syntactic features:

- Base units (nouns, adjectives, adverbs, verbs, prepositions, determiners, etc.).
- Higher-level structural units (noun phrases, adjective phrases, preposition phrases, etc.).
- Subdivisions of these units according to their semantics (e.g. adverbs can be of time, of place, etc.).
- Subdivisions of these units according to their functions (e.g. clauses can be main or subordinate and, as the latter, adverbial, relative, comparative, etc.).
- Subdivisions of these functions according to their granularity (e.g. modifiers can be premodifiers or postmodifiers).

Additionally, many derived units are also employed, in which there is a syntactic numerator and denominator. For instance, the number of nouns can be counted per text, per 100 words, per 1,000 words, per T-unit, and so forth. Some may argue that only text-length normalized features should be employed (i.e. features disregarding net appearances and measuring one phenomenon in proportion to the size of the text, such as noun phrases per 1,000 words). However, the selection of one denominator or another is not a trivial matter, as they can reflect different aspects of syntactic ability (e.g. the use of a feature at a text, sentence, or phrase level).

Using only text-length normalized features assumes that the presence of language features is always evenly distributed and therefore proportional to text length. While it is reasonable to sustain that this is the case for nominalization, there are other language features (e.g. relative clauses) that may not behave in this way. For example, two texts differing in length may have the same number of relative clauses. In such a case, the shorter text will necessarily have more relative clauses per 1,000 words, while it may contain more (and shorter) sentences and therefore have fewer relative clauses per sentence. That is why analysing features that are not text-length normalized is also interesting.

In their mammoth review of research on syntactic development, Durrant et al. (2021) classify the findings in sections, depending on the syntactic feature under analysis, thus painting a very clear picture of the syntactic features that are of concern to research. Their classification is as follows:

- Hunt's synopsis of clause-to-sentence factors (Hunt 1965)
  - *Sentence length*. This is the number of words per sentence.

- *T-unit coordination*. This is the number of T-units per sentence. For Hunt, a T-unit is 'the shortest grammatically allowable sentence into which the theme could be segmented' (1965:21), providing the following fragmented T-units as an example: 'The captain said/if you can kill the white whale, Moby Dick,/I will give this gold to the one/that can do it.'
- *T-unit length*. This is the number of words per T-unit.
- *Clause density*. This is the number of clauses per T-unit. A clause is any sequence that contains both a subject and a finite verb.
- *Clause length*. This is the number of words per clause.

- Part of speech frequencies[1]
  - Adjectives
  - Adverbs
  - Nouns
  - Prepositions
  - Verbs
- Phrase frequencies[1]
  - Adjective phrases
  - Adverb phrases
  - Noun phrases
  - Preposition phrases
  - Verb phrases
- Phrase and clause structure
  - *Adjective phrase structure*. Studies analysing this feature have, for example, probed into the modification of the main adjective by adverbs.
  - *Adverb phrase structure*. Similarly, some studies have examined the modification of the main adverb by other adverbs.
  - *Noun phrase structure*. Some areas of interest include the number modifiers per noun phrase and their nature (pre- or post-modification by determiners, adjectives, relative clauses, non-finite clauses, other nouns, etc.).
  - *Verb phrase/clause structure*. Most of the studies analysing this feature have focused on the internal structure of verb phrases (subject + verb, subject + verb + adverbial, subject + verb + direct object, subject +verb + indirect object + direct object, etc.).

[1] As already noted, these frequencies can be computed in net occurrences or in proportion to a chosen denominator, such as per text, per 1,000 words, per sentence, etc.

- Subordination
  - *Adverbial clauses*. Studies often focus on the type of subordination and the subordinator used (e.g. 'because', 'if', 'when', etc.).
  - *Complement clauses*. Within this category, Durrant et al. (2021:98) differentiate between three cumulative levels: verbal complement clauses (i.e. 'any subordinate clause that functions in subject, object, or predicative position'); noun complement clauses (i.e. 'any verbal complement clause plus any subordinate clause that appears as the complement of a preposition'); and nominal complement clauses (i.e. 'any noun complement clause, plus any clauses also functioning appositionally').
  - *Relative clauses*. Most studies have focused on their overall frequency, although a few have also analysed that of the subtypes (e.g. those introduced by 'that', 'which', etc.).
- Information packaging
  - *Passives*.
  - *Expletive structures*. By this, Durrant et al. (2021:105) refer to clauses 'where the subject is "displaced" to a position after the verb, with the expletive pronouns "there"/"it" appearing in its place'. They identify three types: it-clefts, existential clauses, and extraposed complement clauses.
  - *Displacements*. This refers to when the element being displaced is not replaced (e.g. 'In the book was the answer').
  - *Canonical subject openings*. This measures the frequency of sentences beginning with subjects.
  - *Adverbial clause placement*. This analyses the position occupied by adverbial clauses.
  - *Adverbial placement*. This does the same but for adverbs in general.

They also review coordination features, which are covered in Chapter 5 (Bilingual Academic Discourse).

### *4.5.1 The Automated Measurement of Syntax*

Breakthroughs in the field of natural language processing have led to the creation of computational tools that have replaced manual analyses (e.g. Hunt 1965, 1970) and correct for their subjectivity and error-proneness (Crossley and McNamara 2014). For the English language, there are plenty to choose from, ranging from established tools such as the L2 Syntactic Complexity Analyzer (Lu 2010) and Coh-Metrix (McNamara et al. 2014)

to new ones such as AutoSubClause (Chen et al. 2021) and Kyle and Crossley's (2021) toolkit.

For other languages, the options are more limited. For Spanish, for instance, El Grial and El Manchador de Textos (Parodi 2006) were the first tools allowing for the computational analysis of pre-annotated texts (i.e. enabling researchers to quantify occurrences in a text corpus that had been previously analysed manually). Later on, the UAM Corpus Tool (O'Donnell 2008) contributed to the manual annotation of Spanish texts (enabling, to a certain degree, the systematization of manual syntactic analyses). Some years later, the Freeling Library and the TextServer tool (Padró and Stanilovsky 2012) broke new ground by completely automating morphosyntactic and referential analyses. Subsequently, Coh-Metrix-Esp (Quispesaravia et al. 2016), currently unavailable, was an attempt to translate 45 of the 108 Coh-Metrix indices into Spanish. In this context, the MultiAzterTest tool (Bengoetxea et al. 2020) emerged, with indices for texts in English, Spanish, and Basque (for its application to a Spanish learner corpus, see Granados 2021).

## 4.6 The Evolution of Bilingual Academic Syntax

Researchers studying child grammar agree that its development is quick and fairly uniform (Wakabayashi 2011). It is fascinating to observe how children, regardless of their L1 and even in most cases of cognitive impairment, invariably grow up to become adult members of their language community (Vainikka and Young-Scholten 1994).

Development sometimes follows U-shaped paths, language learners beginning with a correct form, then 'oscillating back and forth between successful and unsuccessful use' (Holme 2012:618), before finally sorting out the correct form again. This is the case, for example, of irregular verb forms. They are first memorized as fixed word chunks (e.g. 'went'), until the learning of the regular past rule creates interference and leads to erroneous forms (e.g. 'go-ed'). Finally, speakers organize forms as regular or irregular (Cazden 1968).

In an attempt to understand these development stages, some studies began to measure the order of acquisition of child language. As is well known, Brown (1973) analysed the L1 English speech of three children longitudinally, while de Villiers and de Villiers (1973) contrasted his results cross-sectionally with the speech of twenty-one children of different ages. Correlations were impressive, revealing, for example, the following order of verb-related morphemes (Vainikka and Young-Scholten 1994:587):

Table 4.1 *Order of morpheme acquisition (Vainikka and Young-Scholten 1994:588)*

| Order of morpheme acquisition | | |
|---|---|---|
| L1 | L2 children | L2 adults |
| de Villiers and de Villiers (1973) | Dulay and Burt (1973, 1974) | Bailey et al. (1974) |
| 1. Plural *-s* | 1. Plural *-s* | 1. Progressive *-ing* |
| 2. Progressive *-ing* | 2. Progressive *-ing* | 2. Contractible copula *-'s* |
| 3. Irregular past | 3. Contractible copula | 3. Plural *-s* |
| 4. Articles | 4. Contractible auxiliary *-'s* | 4. Articles |
| 5. Contractible copula | 5. Articles | 5. Contractible auxiliary *-'s* |
| 6. Possessive *-'s* | 6. Past irregular | 6. Past irregular |
| 7. 3rd person sg *-s* | 7. 3rd person sg *-s* | 7. 3rd person sg *-s* |
| 8. Contractible auxiliary | 8. Possessive *-'s* | 8. Possessive *-'s* |

Progressive '-ing' > irregular past > copula 'be' > regular past > third person singular '-s' > auxiliary 'be'

Other researchers followed this cross-sectional methodology to study the order of L2 acquisition. Dulay and Burt analysed the L2 English speech of 151 Spanish L1 speakers (1973) and of 60 Spanish and 55 Chinese L1 speakers (1974), all children aged between six and eight. That same year, Bailey et al. (1974) followed suit with seventy-three adult learners from twelve different language backgrounds. Their findings, summarized in Vainikka and Young-Scholten (1994), are shown in Table 4.1.

After many years of research, a rough draft of the natural order of acquisition has been established. According to systemic functional linguistics (Halliday et al. 2014; Norris and Ortega 2009), the development of syntax follows this broad pattern:

- In a first phase, the juxtaposition of ideas (words, clauses, or sentences) develops by means of coordination (e.g. 'The Romans conquered the territory and they established a new civilization').
- In a second phase, more intricate texts are produced, and logical relations are expressed through subordination (e.g. 'Because the Romans had conquered the territory, a new civilization was established').
- In a third phase, the grammatical metaphor emerges (nominalizations of processes previously expressed by verbs, plus the use of causal verbs instead of conjunctions), which allows for the production of less intricate texts (with less subordination) but with greater lexical density and more complex clauses and phrases, namely, with more

complements or modifiers (e.g. 'The Roman conquest led to the establishment of a new civilization').

This is the process that a language learner would follow from early childhood to maturity. To this description, the also functionalist Christie (2012) adds that, as they advance in language proficiency, leaners produce longer texts with a more technical lexicon. Moreover, they seek impersonality through impersonal verbs and passive structures, expressing opinion through lexicon rather than first-person evaluations.

Some authors have sought to frame this development in a cyclical model of L2 acquisition based on three phases (Housen et al. 2012; Skehan 1998, 2003). According to them, a certain increase in an individual's linguistic complexity (e.g. the use of a new resource such as subordination) always leads to the consolidation of accuracy or correctness in the use of this newly acquired resource and then to greater fluency in its use. This cyclical pattern (complexity > accuracy > fluency) is repeated with each of the acquired resources (coordination, subordination, nominalization, etc.).

However, recent studies following Complex Dynamic Systems Theory indicate that complexity, accuracy, and fluency, as well as the linguistic resources selected to measure these dimensions (such as the number of subordinating conjunctions per text or the number of modifiers per noun phrase), do not develop in a strictly successive or linear fashion, at least in measurements over short periods. Instead, periods of growth alternate with others of stagnation or even temporary decline (Bulté and Housen 2014).

### 4.6.1 L1 Syntactic Development

L1 studies are scarce in comparison to their L2 counterparts (Crossley 2020). Furthermore, studies exploring most syntactic dimensions are too few and far between or have obtained conflicting results (for a full review, see Durrant et al. 2021). However, in the domain of L1 syntax, research has consistently found that, as learners mature and become better academic writers, there is an increase in the following parameters of their written output:

- Sentence length (Deane and Quinlan 2010; Haswell 2000; Myhill 2008).
- The number of nouns and the noun–verb ratio (Deane and Quinlan 2010).
- The number of structural levels of noun phrases (Crossley et al.2012; Olinghouse and Wilson 2013; Ravid and Berman 2010).
- The frequency and variety of subordinate clauses (Berninger et al. 2011; Verhoeven et al. 2002).

Table 4.2 *Length measures: Student 1*

| T1 | T4 |
|---|---|
| Pero no fueron pocos los problemas de los integrantes de la casa real, en el 1970 y pico intentaron matar al rey en Mallorca, en un viaje que hizo para visitar la isla, o algo parecido. Afortunadamente para los amantes de la monarquía implantada y formal, el intento fue fallido. | Aparte de esta rivalidad, hubo unos antecedentes que propiciaron el inicio de la guerra: Las disputas territoriales en Europa en las cuales Francia quería recuperar Alsacia y Lorena, Italia quería incorporar territorios de lengua italiana como Tirol e Istria y Rusia y Austria-Hungría querían invadir los Balcanes para tener una entrada al Mediterráneo. Además, había disputas coloniales por el desigual reparto de África y Asia, donde Alemania quería extender sus territorios y la exaltación nacionalista en los países balcánicos, que se acaban de independizar del Imperio Otomano, y Serbia quería formar un estado bajo su poder. |

Table 4.3 *Morphosyntactic complexity: Student 10*

| T1 | T4 |
|---|---|
| En 1976, Juan Carlos I llegó a España y se pensaba que iba a ser una continuación de la dictadura de Franco pero con un monarca como dictador. Sin embargo, Juan Carlos lo que hizo fue crear una monarquía parlamentaria. Después se creó una constitución, en 1978, que fue muy bien acogida por los ciudadanos. | Las consecuencias fueron los cambios en el mapa europeo, lo que no agradó ni a los vencidos ni a los vencedores; la devolución de los territorios originalmente franceses a Francia; la reducción del ejército germano; la indemnización a las naciones vencedoras; pérdida de las colonias alemanas. Todo esto produjo que Alemania, la más castigada, tuviese ganas de revancha, lo que favoreció el estallido de la II Guerra Mundial |

To illustrate this development, an extract from Granados et al. (2023) is shown later. This study analysed the development of L1 Spanish in twenty students aged between fourteen and sixteen over two years. During this period, they produced history essays in four data collection times (from T1 to T4). Some language samples from this study (with the original grammar and spelling) can be found in Tables 4.2 and 4.3 (their English translations can be consulted in the notes section of this chapter).

In this study, most of the length measures increased from T1 to T4. The average number of words per text almost tripled from 149 to 415.7 (estimated increase of 259.7, $P < .001$). This led to an increase in the average

number of sentences per text, from 6.1 to 18 (estimated increase of 11.7, P < .001) and in the average number of paragraphs per text, from 2.9 to 9.9 (estimated increase of 7, P < .001). In turn, this led to a decrease in the average Flesch readability ease value from 72 to 60 (estimated decrease of 11.1, P = .002).

The only exceptions to this tendency were sentence and paragraph lengths, whose evolution was irregular and not statistically significant. The average number of words per sentence varied between 24.2 and 25.9 (P = .743), and the average number of sentences per paragraph varied between 1.9 and 4 (P = .370). In sum, as time went by, the students produced longer texts, with more words, sentences, and paragraphs, but the length of sentences and paragraphs remained the same.

Regarding morphosyntactic complexity, there was a clear trend towards nominalization. This can be seen in the evolution of the densities (i.e. proportions). The proportion of nouns in the texts steadily increased from 16.9 to 20.8 per cent (estimated increase of 4.2 per cent, P < .001), whereas the incidence of verbs decreased from 14.2 to 10.6 per cent (estimated decrease of 3.6 per cent, P < .001). On the other hand, the incidence of adjectives more than doubled from 3.6 to 8.2 per cent (estimated increase of 4.6 per cent, P < .001), whereas that of adverbs experienced a slight decrease from 4.3 to 2.7 per cent (estimated decrease of 1.8 per cent, P = .013).

Still focusing on nominalization, it can be observed how the complexity of noun phrases evolved. The average number of descendants per noun phrase (i.e. the number of levels in the dependency tree of noun phrases) increased from 1.3 to 1.9 (estimated increase of .5, P < .001). In all likelihood, these new dependency levels were occupied by modifiers, which experienced a parallel evolution, increasing from 1.1 to 1.3 (estimated increase of .2, P = .003).

The same cannot be said, however, for the average number of descendants per sentence, which remained stable (oscillating between 5.7 and 6.1, and whose evolution was not statistically significant, P = .308). Therefore, sentences were not only similar in length, as discussed before, but also similar in terms of structural levels.

One of the features impacting these structural levels was undoubtedly subordinate clauses. Even though the average number of subordinate clauses seemed to increase from T1 to T4, from 10.9 to 22.8 (estimated increase of 11.9, P < .001), this was owing to the fact that the texts were longer, with a higher number of sentences. If computed per every 1,000 words, the average number of subordinate clauses actually decreased from 71.8 to 53.6 (estimated decrease of 18.9, P = .008). So, presumably, the

dependency levels left vacant by the decrease in subordination were occupied by dependency levels within noun phrases.

In sum, with the passing of time, these particular students produced longer texts, with more words, sentences, and paragraphs, but the length of sentences and paragraphs remained the same. This points to the fact that, by the age between fourteen and sixteen, length measures were already stable at a sentence level, whereas development only occurred at a text level (i.e. text length). In the field of syntax, texts became much more nominal and noun phrases more complex, with more dependency levels and modifiers. Nevertheless, at a sentence level, dependency remained unaltered, and there was a decrease in overall subordination. This implies that it is at this age that the final phase of maturation takes place: the replacement of subordination with nominalization and the transition from narrative to expository texts (for a full account of these research findings, see Granados et al. 2023).

### *4.6.2 L2 Syntactic Development*

Research on the development of L2 syntax is much more abundant, so much so that at times it has yielded conflicting results (for a comprehensive and nuanced review, see Durrant et al. 2021:62–108). In a broader sense, however, a number of studies agree that, as L2 learners mature and progress in the education system, their written output starts to incorporate the following:

- Longer sentences (e.g. Bulté and Housen 2014; Hou et al. 2018; Lahuerta Martínez 2018; Lorenzo and Rodríguez 2014; Shih and Ma 2012; Verspoor et al. 2017).
- More adverbs (e.g. Espada-Gustilo 2011; Grant and Ginther 2000; Pérez-Paredes and Díez-Bedmar 2012; Staples and Reppen 2016; Torras and Celaya 2001; Verspoor et al. 2012).
- More complex noun phrases, that is, noun phrases with more words and levels of dependency (e.g. Bulté and Housen 2014; Crossley and McNamara 2014; Guo et al. 2013; Kyle and Crossley 2018; Lahuerta Martínez 2018; Mazgutova and Kormos 2015).
- More relative clauses (e.g. Espada-Gustilo 2011; Ferris 1994; Grant and Ginther 2000; Parkinson and Musgrave 2014; Santos et al. 2012).
- More passive structures (e.g. Espada-Gustilo 2011; Ferris 1994; Grant and Ginther 2000; Verspoor et al. 2012).

This evolution can be seen in Table 4.4, showing as before an essay on the Industrial Revolution written by Student 10 from the BIMAP corpus,

Table 4.4 *L2 history texts produced by two different individuals*

| | L2 history texts produced by two different individuals |
|---|---|
| 10th grade (fifteen to sixteen years old) | The First Industrial Revolution started on the 18th century in the UK and then it spreads out all over the world. One of the main changes which took place then was the invention of the train and the steamboat, as well as the construction of roads, railways and canals.<br>The train and the steamboat were built when the steam engine was applied to transports. The fist canal which was opened was the one which went from a mine to Manchester and the first railway went to Manchester too. Those new transports were used to move people and goods which became cheaper because the transport was cheap too. In addition, everything was nearer than it was before because the train or the steamboat were really quickly. Due to that, the trade grew.<br>Those transports used to use steam power that they took from coal and it produced too much pollution. But there were terrible things that used to happen then. Children used to work in mines where tall people couldn't enter, and people used to live in very poor conditions in cities because many people moved from the country to the cities which became dirtier and polluted. |
| 1st year of university (eighteen to nineteen years old) | […]<br>This perception of sex as something that was not under the control of men and was part of nature is embodied in different religious festivities celebrated in the city throughout the year. These sexual demonstrations were mostly related to reproduction and fertility, although some also involved pleasure. Both, desire and pleasure, even had a divine personification in the figure of Cupid, although this was considered more as a popular cult than as a god associated with institutional religion. One of the best known and most popular festivities were the Lupercalia, which took place every February 14th. […] These events only took place when they were related to religious festivities.<br>Not surprisingly, the festivity –and all other sex-related festivities– was banned by Pope Gelasius I in 494 because of its obscenity and sexual charge, and replaced by the commemoration of the martyrdom of St. Valentine. Unlike the Romans, public or even private nudity was roundly rejected by Christians. Nudity was a provocation and incited to fall into sexual sin. According to Christian postulates, all those who like nudity (provoking others) are disciples of the Devil, since he is the father of provocations who is trying to make people fall into a multitude of sins. Practicing nudity is 'an act of rebellion and arrogance against God's will and an offense and a lack of respect for those who have not lost their morals'. Art is the perfect example to expose this change of mentality between Romans and Christians.<br>[…] |

when the individual was in 10th grade (fifteen to sixteen years old). For the sake of contrast, this is followed in the same table by a sample of L2 written output of a student enrolled in the 'Ancient History' module, on the topic of festivals in ancient Rome, when the individual was in the first year of the geography and history undergraduate degree programme (eighteen to nineteen years old), taught at Universidad Pablo de Olavide (UPO, Seville, Spain). In line with most European universities, the UPO offers EMI/CLIL lectures.

There is a discernible increase in sentence, paragraph, and text lengths. Longer linguistic units imply a command of the language system and the automation of all the production components, in other words, not only how language is formulated or structured but also how it is conceptualized (Housen and Kuiken 2009; Levelt 1999). The increase in paragraph length, in particular, points to new ways of organizing ideas, in which information is more densely packed and in which a greater amount of historical information is provided.

The second sample also shows an increase in the use of nouns and in the levels of dependency of noun phrases, reflecting a gradually more complex academic reasoning. In human language, nominalization is both ontogenetic (i.e. developing from childhood to adulthood) and phylogenetic (i.e. developing from generation to generation).

Nominalization has also been linked to mental space theory, that is, to the partitioning of knowledge structures into conceptual stretches (Evans et al. 2007, in Bello 2016). As individuals are required to express more meanings in academic discourse, strategic linguistic devices are needed to summarize information in more advanced stretches of language. Therefore, the early processes commonly rendered in congruent BICS-like forms (i.e. nouns acting as subjects and objects, verbs expressing actions, and canonical structures such as subjects preceding verbs, followed by various valences in the form of objects) are later reified (i.e. actions are subjectless and deprived of agents), abstracted (i.e. unique experiences become classes in their own right), and thematized (i.e. processes are categorized at the discretion of the writer). See, for example, the transition from 'people used to live in very poor conditions in cities because many people moved from the country to the cities which became dirtier and polluted', in the first sample, to 'these sexual demonstrations were mostly related to reproduction and fertility', in the second one.

The end result is an incongruent rendition also known as the grammatical metaphor (Halliday et al. 2014), which reduces cohesion procedures and increases the demands on the reader. In a nominal group like 'this

perception of sex as something that was not under the control of men and was part of nature', present in the second sample, the subjects, agents, and objects need to be identified by the reader.

In more mature prose, embeddedness in clauses appears to be a constant resource for creating different dependency levels and for forming longer structures: phrases, clauses, or sentences. A clear example is the sentence, 'Not surprisingly, the festivity –and all other sex-related festivities– was banned by Pope Gelasius I in 494 because of its obscenity and sexual charge, and replaced by the commemoration of the martyrdom of St. Valentine.' In congruent terms, this message would be along the following lines: 'Not surprisingly, Pope Gelasius I banned this festivity in 494, because he thought that it was obscene and sexual. He replaced it with a festivity in which they commemorated how St. Valentine had become a martyr.'

Finally, despite its greater embeddedness, more advanced prose can contain fewer connectives, and logico-semantic relations can be expressed without the aid of linking words (on asyndesis in historical discourse, see Fitzgerald 2011). Note, for example, the cause–effect relationships implied in the passage '[…] public nudity was also frowned upon in Roman society. These events only took place when they were related to religious festivities', in which the second sentence conveys a consequence, or in the passage 'Nudity was a provocation and incited to fall into sexual sin. According to Christian postulates, all those who like nudity (provoking others) are disciples of the Devil […]', in which the second sentence conveys a cause.

### 4.6.3 L1–L2 Syntactic Development

Granados et al. (2022) explored the similarities in the biliteracy development (L1 Spanish and L2 English) of twenty students in a CLIL programme in Andalusia (Southern Spain) over a two-year period. A bilingual learner corpus of history essays was collected during the 9th and 10th grades. These essays were then processed with MultiAzterTest, and a Pearson correlation analysis was conducted to determine whether any dimensions had evolved simultaneously in both languages.

From a syntactical standpoint, the study detected positive correlations in the development of the following language parameters:

- *Lexical and noun densities*. Both the L1 and L2 texts had a higher proportion of content words and nouns as students progressed through the different stages of education.

- *Syntactic complexity*. The use of subordinate clauses and infinitives steadily increased over time in L1 Spanish and L2 English. The students used almost twice as many subordinate clauses and almost four times as many infinitives at the end of the second year.
- *Length measures*. The mean number of sentences per paragraph increased in the two languages, albeit irregularly.

These results are consistent with the rough picture of a natural order painted at the beginning of the section and with the findings of both L1 and L2 research. Furthermore, a mixed-model analysis confirmed that the fixed effect of time and language on such progress was significant, unlike the random effects introduced by the students.

As noted earlier, just as longer linguistic units indicate a greater control of the language system and the automation of all the production components, so too does the greater use of embeddedness and nouns over time reflect a gradually more complex academic reasoning in both languages. Finally, the significant effect of time on these results confirms that an evolutionary approach to language development accurately interprets the increase in the metrics. The significant effect of the language used indicates that, despite its parallel evolution, there were marked differences between the students' proficiency in L1 Spanish and L2 English (index values usually being lower in the latter). For its part, the non-significant random effects introduced by the students reveal that they all evolved across the board, regardless of their individual traits. From this perspective, biliteracy behaves just like any other aspect of human communication in which maturation plays a role.

## 4.7 Conclusion

As seen earlier, syntax refers to the set of grammatical and morphological rules that govern the way that words and phrases are put together to form sentences in a language. The study of syntax is relevant because it can be used to analyse both the quality of texts and the stage of development of speakers.

The mental representation of syntax is linked to that of lexis, as discussed in the previous chapter. Each individual word contains information (i.e. rules) on how it should be combined with others in order to form sentences and complex messages, with these rules becoming more abstract and generalizable with time. For bilinguals, access to this set of rules also changes over time. In an initial phase, there are no L2 syntactic

representations whatsoever, with speakers transferring L1 syntax or, at best, relying on explicit memory to imitate more proficient speakers of their L2. In an intermediate phase, L2-specific nodes are formed (presumably for more frequent structures in the initial stage) and L2 words are associated with syntactic nodes of their own, which remain outside the network of L1 syntax. In a final phase, L2- and L1-specific syntactic nodes merge to create language-independent nodes in the bilingual mind, whenever possible. Nevertheless, as occurs with lexis, the grammar systems of both languages are constantly activated when bilinguals perform language-related tasks, regardless of the language in use.

Syntactic development could be defined as a speaker's growing ability to produce syntax that is not only more complex but also more accurate and more fluent. Be that as it may, syntactic complexity has lately been considered more valid, prevailing over the other two notions. There is a full panoply of indices measuring syntactic complexity, like, for example, Hunt's synopsis of clause-to-sentence factors, part of speech frequencies, phrase frequencies, phrase and clause structure indices, subordination indices, and information packaging indices. Advances in natural language processing have paved the way for the automated evaluation of the syntax of texts, with computational tools such as Coh-Metrix, MultiAzterTest, AutoSubClause, L2 Syntactic Complexity Analyzer, and Kyle and Crossley's toolkit, containing indices that measure particular aspects of syntactic complexity, having since appeared.

Children from all around the world develop into proficient speakers of their language communities. Their syntax evolves very quickly and rather uniformly. A rough natural order has been established by functionalists: one based on juxtaposition, first; on subordination, at a later stage; and on nominalization, at the pinnacle of development. In quantitative terms, research addressing the development of bilinguals has found that they use longer sentences, more nouns and more complex noun phrases, and more subordinate clauses in their L1 as they mature and progress in the education system. As for their L2, they have been found to use longer sentences, more nouns and more complex noun phrases, more adverbs, more relative clauses, and more passive structures.

## Notes

English translation of Tables 4.2 and 4.3. The original syntax has been respected as much as possible.

| T1 | T4 |
|---|---|
| But the problems of the members of the royal household were not few and far between. Sometime around 1970, they tried to kill the king in Mallorca, on a trip he made to visit the island, or something like that. Fortunately for loyalists of the established and formal monarchy, the attempt was unsuccessful. | Aside from this rivalry, there were some precedents that led to the start of the war: Territorial disputes in Europe, where France wanted to regain Alsace and Lorraine, Italy sought to incorporate Italian-speaking territories like Tyrol and Istria, and Russia and Austria-Hungary wanted to invade the Balkans to gain access to the Mediterranean. Additionally, there were colonial disputes over the unequal distribution of Africa and Asia, where Germany wanted to expand its territories, and the nationalist fervour in the Balkan countries, which had recently become independent from the Ottoman Empire, with Serbia seeking to establish a state under its control. |

*English translation of Table 4.2.*

| T1 | T4 |
|---|---|
| In 1976, Juan Carlos I arrived in Spain, and it was thought that it would be a continuation of Franco's dictatorship but with a monarch as the dictator. However, what Juan Carlos did was create a parliamentary monarchy. Later, a constitution was created in 1978, which was very well received by the citizens. | The consequences were the changes in the European map, which did not please either the defeated or the victors; the return of originally French territories to France; the reduction of the German army; the compensation to the victorious nations; and the loss of the German colonies. All of this made Germany, the most severely punished, harbour a desire for revenge, which favoured the outbreak of World War II. |

*English translation of Table 4.3.*

CHAPTER 5

# *Bilingual Academic Discourse*

## 5.1 Introduction

Communication does not occur in a social or contextual vacuum. It is now common knowledge that the way people use language (i.e. their idiolect) is subject to many types of variation, depending on the factor motivating change: diachronic (the historical time), diaphasic (the situation), diastratic (the social group), diatopic (the geographical area), and diamesic (the medium of communication, Mello 2014).

All in all, the social world influences language use, having an impact not only on lexical and syntactical choices but also on the information provided and how this is organized and presented. Take, for example, the famous quote variously attributed to Albert Einstein, Richard Feynman, and Ernest Rutherford: 'You do not really understand something unless you can explain it to your grandmother.' It can only be assumed that none of these physicists would have explained their theories to their fellow academics in the same way as they would have done to their grannies.

On the path to literacy and biliteracy, these discursive norms need to be learnt and acquired. They are the norms that individually transition from 'No water!', when confronted by an empty glass in infancy, to 'There is a shortage of water resources', when writing an academic report in late adolescence. Indeed, discourse is the focus of this chapter. Firstly, some methodological aspects – such as what is understood by 'discourse', its importance, and its conceptualization and measurement – are reviewed, with special emphasis on the subarea of cohesion. An enquiry is then made into whether the palpable differences that monolingual and bilingual individuals have regarding lexis and syntax are still prevalent at the level of discourse. Finally, the evolution of discourse in bilingual academic language is described in detail and illustrated by some examples of development.

## 5.2 Defining Discourse

### *5.2.1 The Umbrella Term 'Discourse'*

The term 'discourse' is used in disciplines as diverse as linguistics, anthropology, philosophy, psychology, and AI. It, therefore, has different meanings for scholars in different fields. Jaworski and Coupland's (1999) seminal work, reviewing classic papers on discourse analysis, included no fewer than ten definitions of discourse. As summarized by Schiffrin et al. (2005), however, they all fall into three main categories: (1) anything beyond the sentence level of language; (2) language in use; and (3) a range of linguistic and non-linguistic social practices.

As is well known, the modern interest in discourse arose when Hymes (1972) coined the term 'communicative competence' to explain that a language user does require not only grammatical knowledge of syntax, morphology, and phonology but also social knowledge about how and when to use utterances appropriately. Since then, discourse analysis has become a broad, empirically oriented discipline which studies the relationships between language in use and the social world. As will be seen later, it covers issues like the organization of information in a text so as to meet readers' expectations and the 'linguistic moves' that a language user makes to convey meaning.

### *5.2.2 Cohesion and Coherence*

Within the domain of discourse, two basic concepts usually stand out: cohesion and coherence. The study of cohesion dates back to the 1960s, when Jakobson (1960) first analysed syntactic structure and parallels in literary texts. Nevertheless, it was Halliday and Hasan's work, *Cohesion in English* (1976), that laid the foundations for cohesion studies. For these authors, cohesion refers to the relations of meaning that exist in a text and which define it as such. It occurs when 'the interpretation of some element in the discourse is dependent on that of another' (1976:4). In other words, cohesion is the property that provides texts with a sense of connectedness between its elements (Sanders and Pander Maat 2006).

Cohesion is closely related to the concept of coherence. From a chronological point of view, there have been three major interpretations of coherence (Sun 2020). The first school, represented by Van Dijk (1977), regarded it as a semantic concept (dependent on discourse topic, discourse structure, and cohesive devices). Coherence was then the objective

property of texts, thanks to which they 'made sense' and were distinguishable from non-texts. The second school, represented by Widdowson (1978), adopted a pragmatic perspective, understanding coherence as being influenced by the situation, the participants, and the modes of communication. Coherence subsequently became context-dependent (i.e. a message that makes sense for some people in a certain situation may not make sense for others). The third school, represented by Hobbs (1979), envisaged communication as a psychological activity and acknowledged the relevance of people's communicative intentions and cultural background knowledge in the process. The more genuinely the receiver restored the sender's original message through the negotiation of meaning, the more coherent that text was.

In a more recent definition, Crossley (2020:425) described the cohesion–coherence dyad as follows: 'Cohesion is text-based and refers to the presence or absence of explicit cues in the text that afford connecting segments of texts together. Coherence, on the other hand, is reader-based and refers to the understanding that each individual reader or listener derives from the discourse.'

Therefore, cohesion lies in the text or discourse and can be measured and quantified directly, whereas coherence lies in the mind of the reader and can only be measured indirectly by means of questionnaires to test comprehension (Graesser et al. 2003).

Regarding the relationship between these two constructs, there are also differences of opinion. For some linguists, such as Halliday and Hasan (1976), cohesion is indispensable yet insufficient for achieving coherence. In other words, the interconnectedness between the elements of a text would be necessary for it to make sense and to be understood, but that interconnectedness would be just one among other requirements (such as using the appropriate register). A second group of linguists, represented by De Beaugrande and Dressler (1981), considers cohesion as the result of coherence. According to this view, readers would presuppose text coherence and explore cohesion to verify their hypotheses. Namely, readers would assume that a text they are reading makes sense and would try to unravel the connections between its elements, verifying whether there are any indications of shared knowledge and tolerating disturbances. Despite these approaches, research has been unable to demonstrate a consistent correlation between cohesion and coherence (Zoltán 2013).

In fact, for a third group of authors, including Stubbs (1983), these constructs are independent of one another to the point that cohesive texts may

not always be coherent and coherent texts may not be cohesive at all. A perfect example of a cohesive but incoherent text can be found in Giora (1985:701): 'The first man landed on the moon. At the same time there was a fly in my aunt's soup. Her soup, however, did not even taste of chocolate.' In this text, ideas are linked to each other, yet when these are conveyed simply, they do not make sense together.

As for coherent but incohesive texts, an example can be found in Husein and Pulungan (2016:10): 'My favourite colour is blue. I'm calm and relaxed. In the summer I lie on the grass and look up.' In this passage, it cannot be said that there are any explicit cohesive cues. Even though there are certain logical relationships between some of the concepts mentioned (the colour blue, calmness, looking up (at the sky, it is understood)), these are purely extralinguistic, that is, the words used do not directly belong to the same lexical field. This is so because all the cohesive cues that would allow the reader to follow the theme–rheme structure have been omitted as a result of ellipsis. Yet, the passage is coherent and can be understood: 'My favourite colour is blue. I'm calm and relaxed [when I see this colour]. In the summer I lie on the grass and look up [at the sky, which is blue].'

This is what led Tanskanen (2006) to affirm that the use of cohesive devices may depend not only on the level of language development and proficiency of writers but also on the assumptions they make about their readership's knowledge and how much explicit guidance they require. This phenomenon complicates the study of cohesion and coherence.

## 5.3 The Importance of Discourse

Traditionally, linguistics had been governed by formalism. The study of word and sentence structure (i.e. of form) was the sole focus of linguistic research, which was naturally reflected in the development of language curricula. The structural approach to language learning was thus based on the assumption that language teaching was enhanced by systematically selecting and grading structures and sentence patterns (Genc 2018). Nevertheless, these principles began to be questioned when cognitive linguistics posited that, in linguistic exchange, attention to form was absolutely peripheral and determined by the meaning schemes generated.

During communication, the attention mechanisms of interlocutors focus on message content to such an extent that formal aspects are generally relegated to second place. This principle of the 'primacy of meaning' is well established not only in natural interactions between native speakers

(Preston 1989) but also in L2 contexts in controlled environments (Van Patten 2003; Wong 2005) and in bilingual or CLIL classrooms (Lorenzo 2007, 2008).

In L2 classroom activities, for example, when contrasting the content of traditional language programmes with the huge repertoire of constitutive rules of the language being studied, those systematically appearing in programmes account at best for 5 per cent of the total (Labov 2003). This proportion suggests that language learning in classrooms that adopt structuralism as a model is not so much due to the conscious learning of the rules that are practised but rather to the implicit and unprogrammed learning (i.e. acquisition) that may occur when students are in contact with the language (Lorenzo 2010).

When functional linguistics came into play (recognizing variation in meaning-making in relation to the social context and connecting form and meaning in contexts of use; Halliday et al. 2014), topics, settings, functions, and notions are the units that need to be rationally 'sequenced and organized' (Lin 2010:429). Continuing with this example, language curricula should cease to consist of an inventory of linguistic items sequenced and organized in terms of their structural complexity and should instead be based on communicative functions (e.g. requesting services, seeking information, expressing disagreement, etc.) and notions (e.g. distance, duration, quantity, quality, location, size, etc.) organized in accordance with different settings, situations, or topics (Lin 2010).

Language learning and acquisition are therefore achieved by the use of language as a social practice and not by the isolated treatment of the formal aspects of a language in a contextual vacuum (e.g. of agency in the passive voice). The symbiosis between form and meaning in linguistic units makes better sense in relation to textual units (be they oral or written) since it is at that level where the formal properties of language take on social significance (e.g. how the passive voice contributes to the impersonal style of a scientific report).

Finally, as with the other two components already covered in this book (lexis and syntax), discourse aspects have also been used in research to study text quality and development. As seen in the previous chapters, speakers need to employ a varied and discernible lexis, as words are the building blocks of language, and must follow certain syntactic rules in order to combine them into sentences. To these requirements should be added that, in terms of discourse, they must provide texts with a sense of connectedness between their elements to facilitate the transmission of complex messages in communication, among other things. In a narrative,

for example, achieving referential cohesion is particularly necessary for indicating that events happen to the same character and in the same place (Morgan 2000).

## 5.4 Discourse in the Monolingual and the Bilingual Mind

The production and processing of discourse requires interaction between cognitive macrostructures (information processing and organization) and language-driven principles. In this interaction, both the lexical and grammatical systems are activated to ensure that appropriate words are combined or interpreted in the right way to produce or understand complex texts.

A great number of studies analysing the connection between the linguistic forms and narrative functions of monolingual individuals – for instance, establishing temporal relations, packaging narrative content in syntactically and semantically related clauses, managing referential links, etc. – have found that cognitive schemata drive the selection of particular language forms and that, as discourse structuring abilities develop, the forms selected vary (Kupersmitt et al. 2014). In other words, the activation of lexical and grammatical systems depends on the speaker's ability to manage and regulate the flow of information (Hickmann 2003), which as will be seen evolves with age and proficiency.

In this regard, similar patterns of structural organization have been reported for bilingual individuals. When bilingual children are exposed to their two languages in a consistent manner, they go through the same stages as monolingual speakers of each language (Morgan 2000). That means that, even if each language has different surface mechanisms, structural organization and discourse-related principles in the mind seem to be guided by universal, language-independent strategies (Berman 2014). Furthermore, bilingual children display an early sensitivity to the aspects that differ from language to language (Aarssen 1996).

This chimes with Cummins' (1978, 1980) 'common underlying proficiency' and 'interdependence' hypotheses (see Chapter 1). Best known by the felicitous metaphor of the two-tipped iceberg, these hypotheses imply that the cognitive macrostructure of language production at all levels – socio-pragmatic, discursive, and lexicogrammatical – uses the same operational components in all languages. There would be a common baseline transcending language differences and supporting the entire linguistic repertoire of individuals, while the development of the L1 would affect that of the L2, and vice versa.

Nevertheless, the uneven development of L1–L2 syntax (covered in Chapter 4) may produce a certain delay in L2 acquisition, with bilinguals often producing less sophisticated morpho-syntactic constructions and employing fewer cohesive resources such as adverbials and temporal connectives (Kupersmitt et al. 2014). This points to the existence of a linguistic threshold (on the threshold hypothesis, see Chapter 1), that is, a certain level of L2 proficiency (i.e. syntactical, morphological, and phonological knowledge) might be necessary to produce texts that serve a certain purpose and which are comprehensible and acceptable according to certain social norms with the same standards as in the L1.

## 5.5 The Conceptualization and Measurement of Discourse

In the study of L1 and L2 learning and acquisition, three aspects of discourse stand out because of their relevance: text genres, discursive functions, and cohesion. This section reviews their conceptualization, before describing the evolution that monolingual and bilingual speakers experience in each case.

### *5.5.1 The Conceptualization of Text Genres*

Johns (2002:3) defined genres as 'complex oral or written responses by speakers or writers to the demands of a social context'. Similarly, Hyland conceived them as 'rhetorical actions that we draw on to respond to perceived repeated situations' (2002:116) and 'rhetorical structures fundamental to various forms of communication in a culture' (2004:29). In other words, genres are linguistic units with full social meaning (Lorenzo 2013).

The concept of genre is rooted in the classical rhetorical tradition (Welch 1990). Nevertheless, it gained momentum with systemic functional linguistics (Halliday et al. 2014). For functionalists, context affects the understanding of texts, operating at two levels: the level of 'register', depending on the 'field' (social activity), 'tenor' (interpersonal relationships between interlocutors), and 'mode' (the role played by language in building communication); and the level of 'genre', defined as the social purpose of texts (Christie 1991). These would be the precepts of the Sydney School, although mention should also go to other currents of genre scholarship, such as English for Specific Purposes and the New Rhetoric (Hyon 1996).

One of the more far-reaching contemporary definitions of *genre* was offered by Bakhtin (1986:60), who described it as the relatively stable types of utterances that are developed by each sphere in which language is used.

He distinguished between primary (simple) and secondary (complex) genres. The former would be 'everyday' (i.e. conversational) genres like discussing the weather, whereas the latter would be 'literary' genres such as novels, dramas, or scientific texts.

Adam (1992) believed that discourse analysis should have greater granularity, proposing to this end the textual sequence as the main composition unit of texts. These units would occupy an intermediate level between the sentence and the text and would be made up of propositions (i.e. units of meaning) displaying an internal organization of their own. He distinguished between five different types of sequences, which in very broad terms could be defined by their main reference:

- Narrative sequences have time as the main reference.
- Descriptive sequences have space.
- Argumentative sequences have a thesis (i.e. a statement or view that should be substantiated with evidence and logic).
- Expository sequences have a fact or entity.
- Dialogic sequences have an adjacency pair (i.e. a unit of conversation that encompasses two turns – an exchange between two speakers).

Nevertheless, Adam (1992) was aware that there are few homogeneous (pure) texts containing only one type of sequence. In real-life communication, most texts are heterogeneous; that is, they contain different combinations of sequences (narrative + descriptive, expository + argumentative, etc.). That is why he proposed the concepts of 'dominant sequence', namely, the type of sequence with a higher incidence in the text, and 'secondary sequences' or others also present. Furthermore, he even proposed that some sequences could be subject to ellipsis and therefore only implicitly present in the text.

Since then, many further classifications have been proposed, all with different terminology and classification levels (macro-genres, genres, text types, text typologies, writing styles, etc.). For example, Grabe's (2002) influential categorization differentiated between two families of macro-genres: the narrative and the expository.

Most classifications, however, distinguish between four types of genres: the narrative genre (recounting how events unfolded, with an abundance of past tense verbs, temporal markers, and temporal subordinate clauses); the descriptive genre (describing somebody or something, with a special incidence of adjectives, adverbs, and textual markers of place); the expository genre (explaining a topic, with a predominance of impersonal verb forms and terms with connotative value); and the argumentative genre

(convincing, urging to act, or giving an opinion, with a special incidence of first-person pronouns and conditional and imperative sentences).

A genre would therefore be a 'cognitive-semantic schema [that] is realised as an actual text' (Saukkonen 2003:402). From a cognitive perspective, text structure is both a cause and a consequence of the way in which mental structures process language and order the flow of information (De Beaugrande and Dressler 1981). In fact, cognitive demands vary from genre to genre. Narrative texts would be the least cognitively demanding, expository texts would be more demanding than narrative and descriptive texts, and argumentative texts would be the most cognitively demanding of all (Weigle 2002).

### 5.5.2 The Conceptualization of Discourse Functions

Discourse functions should not be mistaken with Jakobson's (1960) model of language functions which, as is well known, comprises the referential, emotive, conative, phatic, metalingual, and poetic functions. The origin of discourse functions, or at least that of CDFs, can be traced back to Bloom's taxonomy of thinking skills.

Bloom et al. (1956) intended to develop a tool for curricula and test design which provided practitioners with a shared metalanguage and helped them to focus on learning objectives rather than on factual knowledge. In their taxonomy, they identified six relevant thinking skills, which they organized in a pyramid to symbolize their allegedly greater complexity. The three bottom layers corresponded to 'knowledge', 'comprehension', and 'application' (all considered as lower-order thinking skills or LOTS), respectively, and the top layers to 'analysis', 'synthesis', and 'evaluation' (all considered as higher-order thinking skills or HOTS). According to the authors, teachers should aim to develop all six skills in classroom practice, especially the top ones, instead of just testing the ability of students to remember knowledge.

Almost fifty years after the initial taxonomy had been proposed, Bloom's disciples Anderson and Krathwohl (2001) presented a revised version, in which levels were reorganized and relabelled using verbs instead of nouns in order to emphasize the active nature of the cognitive processes. From the bottom of the pyramid to the top, the levels were now 'remember', 'understand', 'apply', 'analyse', 'evaluate', and 'create'. Furthermore, they provided a list of alternative verbs for each dimension (e.g. the 'remember' level included 'interpret', 'exemplify', 'classify', 'compare', and 'explain'), while also adding a knowledge dimension, distinguishing between 'factual', 'conceptual', 'procedural', and 'metacognitive' knowledge.

These two taxonomies have since paved the way for other thinking skills and learning-aims maps (Bauer-Marschallinger 2022). One such example is Biggs and Tangs's (2011) learning outcomes framework for tertiary education. Nevertheless, Bloom's work has also been a source of inspiration for linguists studying the linguistic demands of these thinking skills. Indeed, multiple linguistic frameworks of academic language functions have been put forward.

Initially, Bailey and Butler's (2003) framework explored language demands in content subjects. Some years later, the Council of Europe promoted research on the languages of schooling and launched a large-scale project to study the language that adolescent learners needed in order to succeed at school. Beacco (2010), Linneweber-Lammerskitten (2010), Pieper (2010), and Vollmer (2010) analysed the language of history, mathematics, literature, and science, respectively. As to history, for example, Beacco (2010:20–21) identified the following discourse functions/cognitive operations and verbal performances: 'analyse', 'argue', 'illustrate/exemplify', 'infer', 'interpret', 'classify', 'compare', 'describe/represent', 'deduce', 'define', 'discriminate', 'enumerate', 'explain', 'judge/evaluate/assess', 'correlate/contrast/match', 'name', 'specify', 'prove', 'recount', 'report (on) a discourse', 'summarize', 'calculate', and 'quote'.

In line with the Council of Europe's research agenda, Moe et al. (2015) subsequently addressed the combination of Common European Framework of Reference for Languages (CEFR) levels (only for A2–B2) and discourse functions in the disciplines of history/civics and mathematics. Nevertheless, these descriptors were not sensitive to disciplinary literacy (as history was blended with mathematics) and overlooked the linguistic structure of discourse (as they did not include any information on the language features most frequently employed in each competence band). More recently, Granados and Lorenzo (2024) have proposed a set of B1 and B2 descriptors for historical literacy in relation to discourse functions.

Dalton-Puffer (2013) set out to bring some order to this mishmash of discursive functions by creating a shared basis of labels, systematizing and condensing previous constructs into 'a manageable number of prototypes' (Bauer-Marschallinger 2022:56). As well as reviewing fifteen different frameworks, accounting for fifty-seven academic language functions, the author proposed a construct for CDFs which she conceived as language patterns crystallizing 'in response to recurrent situative demands in a context where participants have recurrent purposes for communicating' (Dalton-Puffer 2013:231).

Table 5.1 *The CDF construct (Dalton-Puffer and Bauer-Marschallinger 2019:35)*

| Communicative intention | Type | Examples of CDF verbs |
|---|---|---|
| I tell you how we can cut up the world according to certain ideas | **CATEGORIZE** | Classify, compare, contrast, match, structure, categorize, and subsume |
| I tell you about the extension of this object of specialist knowledge | **DEFINE** | Define, identify, and characterize |
| I tell you details of what I can see (also metaphorically) | **DESCRIBE** | Describe, label, name, and specify |
| I tell you what my position is vis-à-vis X | **EVALUATE** | Evaluate, judge, argue, justify, take a stance, critique, comment, and reflect |
| I tell you about the causes or motives of X | **EXPLAIN** | Explain, reason, express cause/effect, deduce, and draw conclusions |
| I tell you something that is potential (i.e. non-factual) | **EXPLORE** | Explore, hypothesize, predict, speculate, guess, estimate, and simulate |
| I tell you something external to our immediate context on which I have a legitimate knowledge claim | **REPORT** | Report, inform, recount, narrate, present, summarize, and relate |

Dalton-Puffer's (2013) CDF construct was based on seven types of functions, each of them resting upon a communicative intention regarding content knowledge. Furthermore, Dalton-Puffer and Bauer-Marschallinger (2019) also provided examples of CDF verbs, as can be consulted in Table 5.1.

Admittedly, when these functions need to be analysed in real-life discourse, a 'certain degree of blurriness' arises on the boundaries between the prototypical types, as these are 'neither completely disjoined nor are they mutually exclusive' (Bauer-Marschallinger 2022:58). More often than not, CDFs build on and complement each other (e.g. a classification as part of a definition), thus creating tight nets of CDFs.

Lorenzo (2017) describes this as 'functional stress' and, as will be seen later, considers that including several functions in one proposition is a sign of discourse sophistication. For their part, as Adam's (1992) did with sequences, Dalton-Puffer et al. (2018) reacted by proposing two levels of CDFs: 'episodes' (i.e. longer stretches of speech serving one overall communicative intention) and 'CDF basic elements' (i.e. smaller CDFs sustaining and supplementing the overall purpose of the episode).

### 5.5.3 *The Conceptualization of Cohesion*

Halliday and Hasan's (1976) model of cohesion, which reigns supreme in cohesion studies (for a detailed description of other theoretical models, see Delu and Rushan 2023), is formed by the following linguistic devices:

- *Reference*. When two linguistic elements are related in what they refer to (e.g. '*You* must watch that show. *You* are going to love it').
- *Substitution*. When instead of repeating a linguistic element, it is replaced by a substitute item (e.g. 'You must watch *that show*. You are going to love *it*').
- *Ellipsis*. When one of the identical linguistic elements is omitted instead of being replaced (e.g. 'Have you *watched the show*? – Yes, I have').
- *Conjunction*. When a semantic relation is explicitly marked (e.g. 'I watched the show. *However*, I did not like it). The seminal authors distinguished between additive, adversative, causal, temporal, and continuative (miscellaneous) conjunctions.
- *Lexical cohesion*. When lexical items refer to another one (i.e. lexical reiteration by synonym, superordinate, general noun, or word repetition) or when they are associated and co-occur regularly (i.e. lexical collocation by opposites, ordered series such as Monday–Tuesday, unordered series such as whole/part relationships, or mere textual environment such as laugh–joke).

### 5.5.4 *The Automated Measuring of Text Genres, CDFs, and Cohesion*

In the previous chapters, it has been seen how advances in natural language processing have paved the way for a full panoply of software tools for the automated analysis of the lexis and syntax of texts. Nevertheless, given the social and situative nature of text genres and CDFs, their automated measuring is far from having been achieved.

For text genres, these software tools (e.g. Coh-Metrix, MultiAzterTest, L2 Syntactic Complexity Analyzer, AutoSubClause, etc.) can be used to identify the linguistic features that are usually associated with narrative, descriptive, expository, or argumentative texts. The presence or absence of these features can be used as proxies for each text type (for a pioneering account of this process, see Biber 1992). For example, a text containing more verbs could be considered more narrative; one with a higher incidence of adjectives, more descriptive; one with more first-person verb

forms or imperative sentences, more argumentative; and one with a higher incidence of noun phrases or passive forms, more expository.

Some tools even contain conglomerate measures that combine different indices for identifying text genres. For instance, Coh-Metrix (Graesser et al. 2011) includes an overall narrativity value, resulting from a weighted combination of seventeen indices on characteristics of words, sentences, and connections between sentences (e.g. proportion of verbs and adverbs, prevalence of pronouns, word familiarity and frequency, number of words before the main verb, etc.). Nevertheless, as Coh-Metrix's theoretical model only distinguishes between narrative and informational texts (Graesser and McNamara 2011), the tool does not offer this index for other text genres.

As for CDFs, some linguistic features signalled by software tools can also be used as proxies for their identification, as in the case of connectives, which can be employed to identify some CDFs present in a text. For example, the presence of causal connectives (e.g. 'because', 'so', 'consequently', etc.) may indicate the use of the CDF 'explain', and that of adversative connectives (e.g. 'although', 'whereas', 'alternatively', etc.) may point to the use of the CDF 'explore'. Nevertheless, using qualitative data analysis software (such as ATLAS.ti, MAXQDA, and Nvivo) for the manual coding of the CDFs in a text still seems to prevail in studies of this type.

For the measurement of cohesion, one of the most popular tools is Coh-Metrix, 'hence the Coh' in the name (McNamara et al. 2014:18). Even though the tool 'quickly and effectively moved well beyond its original goals of developing measures of cohesion to better *match text to readers*' (2014: 2, original emphasis), it still offers many opportunities for the study of cohesion, such as:

- Referential cohesion indices
  - *Noun overlap*. This measures the repetition of the same noun in two sentences from the same text.
  - *Argument overlap*. This measure does the same but for nouns and pronouns.
  - *Stem overlap*. This measure also includes the use of content words with the same lemma (e.g. 'price' and 'priced').
  - *Content word overlap*. This measure considers the proportion of content words that overlap between pairs of sentences.
  - *Anaphor overlap*. This measure analyses whether a sentence contains a pronoun that may refer to a noun/pronoun from the previous sentence.

All these measures of referential cohesion are calculated locally (i.e. the overlap between consecutive, adjacent sentences) and globally (i.e. the overlap between each sentence with every other sentence). The content word overlap measures also include standard deviations.

- Latent semantic analysis indices

The aim of these indices is to measure semantic overlap between sentences and paragraphs. The latent semantic analysis (LSA), which adopts the distribution hypothesis (Firth 1957), assumes that words that are close in meaning will occur in similar text fragments. For calculating this, LSA conceives sentences as vectors of terms (using statistical techniques and a large reference corpus) and uses the cosine of these vectors. There are six indices in all:

- LSA between adjacent sentences (mean and standard deviation)
- LSA between all possible pairs of sentences (mean and standard deviation)
- LSA between adjacent paragraphs (mean and standard deviation)

Nevertheless, as Venegas (2006:84, translated from Spanish) cautions:

> This method extracts its meaning representations of words and paragraphs exclusively from the mathematical-statistical analysis of the text. None of its knowledge derives from perceptual information about the physical world, from instinct, or from experience generated by bodily functions, feelings, and/or intentions. Thus, its representation of meaning is partial and limited since it does not make use of syntactic, logical, or morphological relations.

- Connective measures

Coh-Metrix offers indices on the following types of connectives:

- All connectives
- Causal connectives ('because', 'so', 'consequently', etc.)
- Logical connectives ('and', 'or', 'instead', etc.)
- Adversative/contrastive connectives ('although', 'whereas', 'alternatively', etc.)
- Temporal connectives ('first', 'after', 'until', etc.)
- Extended temporal connectives ('at that time', 'the day after', 'in a while', etc.)
- Additive connectives ('and', 'moreover', 'also', etc.)
- Positive connectives (a superordinate category with all the positive connectives, such as 'also', 'moreover', 'because', etc.)
- Negative connectives (a superordinate category with all the negative connectives, such as 'however', 'but', 'otherwise', etc.)

However, Coh-Metrix's working files include the same connectives under different categories (e.g. 'and' is computed for logical, additive, and positive connectives). Therefore, these indices need to be treated with caution, as non-refined results might be prone to error.[1]

- Lexical diversity measures

Lexical diversity measures, namely, the type–token ratio, the Measure of Textual Lexical Diversity, and vocd, have been covered in depth in Chapter 3. In terms of cohesion, high levels of lexical diversity entail lower cohesion and higher difficulty, as there are more unique words introducing new information that needs to be processed and integrated into the discourse by the reader (McNamara et al. 2014). In contrast, the greater the frequency with which the same words are used multiple times across a text, the lower the lexical diversity and the higher text cohesion will be.

The last two dimensions – connectives and lexical diversity – are inextricably linked to syntax and lexis, respectively (connectives act as subordinating devices and usually determine the function performed by the subordinate clause). This reinforces the relevance of Complex Dynamic Systems Theory, a theory in which language is viewed as a set of interconnected subsystems that interact with and influence each other.

- Other measures

There are also other software tools for analysing cohesion. Since Coh-Metrix transitioned from an initiative for studying cohesion to a much more complex tool for text analysis, some of the developers of Coh-Metrix created another tool specifically designed for measuring cohesion: the Tool for the Automatic Analysis of Cohesion (TAACO, Crossley et al. 2016b). It includes different combinations of the indices described earlier. As discussed in previous chapters, MultiAzterTest (Bengoetxea et al. 2020) now offers these indices for texts in English, Spanish, and Basque.

## 5.6 The Evolution of Bilingual Academic Discourse

Research on discourse development is much less abundant than that on lexis and syntax. For the study of bilingualism, this is a sorry state of affairs for it is in discursive and pragmatic aspects in which bilinguals are perhaps most able to demonstrate their control of two linguistic systems (Genesee 1989).

[1] In personal correspondence with the tool's developers, they clarified that when a connective in a text falls into two categories, it is computed as an instance of each type of category.

Monolingual individuals usually begin to formulate what could be considered 'discourse' after their second year of life, sometime after they have started to produce two-word utterances (Morgan 2000). However, the advanced skills required for the encoding of simultaneous events, shifting perspectives, and discourse packaging continue to develop well into late childhood and beyond.

In this transition, a crucial linguistic developmental milestone is the use of decontextualized language, that is, the shift from the 'here and now' to the 'then and there' (see Chapter 1 for a description of academic language). Morgan (2000) performed a literature review on L1 acquisition, before proposing the following developmental sequence in children's narratives: at the age of two, they are able to retell past events if engaged in conversation; at the age of three, they can narrate past personal experiences in short monologues (single sentences with little or no cohesion); and, finally, at the age of four, they are able to construct decontextualized, pre-structured monologues. Nevertheless, as non-autobiographical narratives (in which the child is the narrator but does not take part in the events, and in which there might be fictional characters) are more demanding, this is not usually achieved until the age of five. Even though the linguistic devices of such narratives may be similar to those of autobiographical ones, the required cognitive and pragmatic skills normally take longer to develop.

Regarding the organizational strategies of monolingual children, Karmiloff-Smith (1985, in Morgan 2000) enquired into how they narrated events depicted in picture books, proposing a three-stage developmental sequence which would be as follows. Before the age of five, children are guided by the pictures and establish references on the basis of non-linguistic context (i.e. through deictic references to the book). This is the 'bottom-up' phase, in which the focus is on sentential relations. After the age of five, their organizational strategy involves choosing one reference as the 'thematic-subject' of the narration. The selected theme (e.g. the name of a character or pronoun) is always in the initial position of utterances, with the other aspects of the narrative revolving around it. This corresponds to the 'top-down' phase, in which they display more sensitivity to global discourse constraints. Finally, in late childhood and adulthood, speakers use a more flexible organizational strategy, combining bottom-up and top-down processes and local and global cohesive devices.

In the case of bilingual individuals, discourse mechanisms in the mind seem to be guided by universal, language-independent strategies (Berman 2014). Furthermore, bilingual children show an early sensitivity to aspects that differ from language to language (Aarssen 1996). Nevertheless, as

anticipated earlier, the uneven development of L1–L2 syntax (covered in Chapter 4) may produce a certain delay in L2 discourse acquisition, bilinguals often producing less sophisticated morpho-syntactic constructions and employing fewer cohesive resources such as adverbials or temporal connectives (Kupersmitt et al. 2014). This points to the existence of a linguistic threshold, that is, a certain level of language proficiency might be necessary to produce crucial discursive features. If this threshold is not reached, the text output of bilinguals can be overreliant on L1–L2 lexicogrammatical commonalities (i.e. avoidance strategies, leading to impoverished language) or include the inappropriate use of cohesive devices (leading to unclear texts).

The following section focuses first on the transition from narrative to expository language and the use of CDFs, two domains of discourse which, as already observed, go beyond language specificity. Following this, the areas of cohesive development on which there seems to be a consensus are briefly summarized.

### 5.6.1 The Transition from Narrative to Expository Texts

The distinction between genres is established early in academic life. Preschool children have been reported to distinguish between different types of narratives and between narratives and descriptions (e.g. Allen et al. 1994; Sandbank 2001). By the age of ten, children have already acquired a narrative schema involving all the components of a canonical action structure (Berman and Nir-sagiv 2007). They are able to produce texts focusing on people, their actions, and their motivations, and to express the unfolding of events in a time frame.

The structure and content of expository discourse, however, develop later on. It is only when they reach high-school level that adolescents are able to produce topic-oriented texts focusing on concepts and issues and to express ideas, claims, and arguments while logically interrelating them. This was demonstrated in the study performed by Berman and Nir-sagiv (2007), who compared narrative and expository texts produced by the same eighty monolingual adolescents. They found that, despite the fact that their expository texts contained more advanced lexis and syntax, their global text construction lagged behind their narrative texts. In other words, they had not yet fully developed global text construction mechanisms, thus underlining the special status of adolescence as 'a watershed in developing cognitive and communicative abilities' (Berman and Nir-sagiv 2007:103; on languages across life, see Chapter 2).

Nevertheless, this linear developmental journey would include certain irregularities for individuals at the furthest end of proficiency and maturity. According to Berman and Nir-sagiv (2007), whereas 'inter-genre distinctiveness' is well established in adolescence, it becomes less dichotomous and speakers/writers start to diverge from genre-typical form and content norms to include expository-like features in narratives and narrative-like features in expository texts. These authors proposed four levels of discourse construction to represent this transition from 'genre dichotomy' to 'genre divergence', including the typical cognitive processes, structure and content, and discursive features of each level.

Regardless of these nuances, the transition from narrative to expository texts is the result of both cognitive and linguistic development, which in turn is a consequence of rich and varied language exposure and increasingly greater academic demands. In the cognitive dimension, students transition from concrete and physical to abstract and formal reasoning as they progress through the different stages of education. They also develop metalinguistic awareness, thus being able to reflect on and learn from their own language output and not just from the input they receive (Tolchinsky 2004). Schooling also increases the information processing capacity and automaticity of students, while also allowing them to familiarize themselves with more types of content knowledge. Moreover, it strengthens their executive function by requiring the use of higher-order cognitive abilities such as self-control, planning, and focus (Cristofori et al. 2019). All this prepares them for coping with the more abstract thematic content typically found in expository texts.

Furthermore, this thematic content also has implications for linguistics. Constructing a text about 'concrete and hence highly accessible people, objects, and events tied to specific times and places' (Berman and Nir-sagiv 2007:106) is not the same as formulating propositions on an abstract topic which is in itself the 'text protagonist' (Havelock 1986). As established in the previous chapters, students adapt by developing a more diverse vocabulary, producing texts containing a higher proportion of content words, as well as more sophisticated (i.e. longer, more infrequent, more academic, more specific and less polysemous, less associable, and less familiar words). They also develop more complex syntax, using longer sentences, more nouns, and more complex noun phrases, plus more subordinate clauses in their texts. Furthermore, they employ more global cohesive devices (e.g. semantic similarity and lexical overlap between paragraphs), while they modulate the use of local cohesion ones (e.g. connectives at the sentence level).

This cognitive and language development is a consequence of the exposure of children to different varieties of discourse and of the changes in the communicative context in which texts are produced or interpreted, which are increasingly more demanding (for the relationship between task complexity and L2 learning, see Robinson and Gilabert 2007). Narrative conventions can be acquired in informal, everyday conversations (in which children are exposed to the retelling of personal experiences) or from listening to bedtime stories or watching TV. Nevertheless, as Berman and Nir-sagiv (2007) rightly observe, parents read storybooks, not encyclopaedias, to their children, and these watch films, not documentaries, on TV. In other words, expository texts are encountered mainly in the classroom or during school-related activities (Blank 2001; Ravid 2005). It is schooling that triggers and shapes the transition from narrative to expository texts, and it is only schooling that offers students the possibility to access the power that the production of this text genre can unleash (on the critical aspects of bilingualism, see Chapter 7).

This evolution can be appreciated in Table 5.2, which shows two essays produced by a nine-year-old and a sixteen-year-old, respectively, in response to the same task (writing a composition in which they discussed the topic 'problems between people'; for further information, see Berman and Nir-sagiv 2007).

The cognitive transition from concrete and physical to abstract and formal reasoning is clearly visible in the overall approach to the topic. While the nine-year-old focuses on immediate matters, namely, how to make friends (presumably at school), the sixteen-year-old discusses conflict in general terms, without this being limited to friendship relationships.

Table 5.2 *Essays written by students aged nine and sixteen, respectively, on the topic of conflict (Berman and Nir-sagiv 2007:118–119)*

| |
|---|
| I do not think fighting is good. You do not make friends that way. If you do not fight, you can have many many friends. But when you fight, you can hurt the person's feelings you are fighting with. You should always be nice and respectful to other people. And if you are not nice, you will end up not having any friends. That is why you should not fight. |
| Conflict is opposing ideas or stances between two or [more] people. In many ways it is a necessary part of life. On the other hand, it can cause disruption and chaos in the relationships of those involved. When people have a difference of opinion, a conflict is usually the result. This is a good way for those differences to be put aside. […] |

This cognitive evolution also has linguistic manifestations. The greater abstractness of the second text entails the use of more nouns and more complex noun phrases (e.g. 'conflict', 'disruption', 'chaos', 'difference of opinion', etc.), which in turn are more sophisticated words. Other traits of language development are also present, such as greater lexical diversity (an MTLD of 63 as opposed to 32; on lexis, see Chapter 3) and longer sentences (twelve words per sentence as opposed to ten).

Finally, one more trait of discourse development is also shown in the second excerpt. The sixteen-year-old writer displays more objectivity and analyses both the positive and the negative aspects of the phenomenon, hinting at concessive language (e.g. even though 'it can cause disruption and chaos in the relationships of those involved', conflict 'is a necessary part of life'). The development of discourse functions and cohesive devices is now reviewed in Section 5.6.2.

### *5.6.2 The Use of Advanced CDFs*

The epistemologically and practically invaluable CDF framework (Dalton-Puffer 2013) is becoming the default construct for the analysis of learner productions at discourse level (see, e.g. Breeze and Dafouz 2017; Doiz and Lasagabaster 2021; Llinares and Nikula 2023). Nevertheless, as longitudinal research is still thin on the ground, the description of how the use of CDFs evolves during an individual's academic life is still very imprecise (for an in-depth review, see Bauer-Marschallinger 2022).

In their review of five smaller-scale studies on 7th–13th-grade CLIL lessons, Dalton-Puffer et al. (2018) found that all seven CDF types were employed regularly in classroom interaction across five different disciplines (physics, biology, economics, history, and English). Their results indicate that, in all disciplines, the most frequent CDF was 'describe' (except for economics, in which it was 'report'), followed by 'explain' and 'define'. The use of other CDFs depended more on the discipline. However, they also detected that learners rarely constructed complete CDFs autonomously (they were co-constructed with the teacher) and, whenever they did, they only employed basic or simplified versions (e.g. adding 'maybe' to a sentence to signal the CDF 'explore').

In a different study focusing on the oral discourse of biology at the upper secondary level, Vanderbeke and Wilden (2017) discovered that the most common CDFs were 'evaluate' and 'describe', followed by 'explain', 'explore', and 'report'. The CDFs 'define' and 'categorize', merged in this study, were the ones less frequently employed. The question remains, however, whether

this different use of CDFs is a consequence of the greater difficulty or later development of one particular CDF or is simply a trait of the discipline (on disciplinary literacy, see Chapter 6) or the task in which language is produced. Lorenzo (2017), for example, analysed the historical narratives of 10th-grade CLIL students, reporting that, even though the corpus included instances of all CDFs, 'explore' and 'evaluate' were rare. Furthermore, he identified the merging of two or more CDFs by students (i.e. functional stress), which he interpreted as a sign of advanced historical literacy.

This matches the results of Dalton-Puffer and Bauer-Marschallinger (2019) who in their observation of eight lower and upper secondary school lessons (four at each level), discovered that older students produced CDFs more frequently and could employ a greater variety of them. Younger students, for example, mistakenly used 'describe' when they were requested to employ the 'explain' CDF, thus pointing to the latter's greater difficulty. Older students used a greater variety of CDFs, which displayed better logical-semantic relations and greater structural and lexical variety. However, all the students in the study, regardless of age, used a limited selection of basic markers and did not signal their communicative intentions clearly.

In the same vein, Whittaker and McCabe (2023) examined the use of the CDF 'evaluate' in the oral and written discourse of primary and secondary students in the disciplines of art, biology, and history. They found that, in their use of this CDF, the primary students had more basic vocabulary and were more restrained by the words used in the prompts, whereas the secondary students provided more objective and justified evaluations.

Overall, it could be concluded that more mature and proficient individuals make more frequent and varied use of CDFs, often merging them in the same proposition. Breeze and Gerns's (2019) study, investigating the impact of an academic writing module, also supports this claim. The type of CDFs employed in each text might be task-dependent. However, the stage at which each type of CDF is developed seems to be determined by the discipline. For the discipline of history, for example, the CDF 'explore' is apparently the most advanced one (on historical literacy, see Chapter 6).

Regarding L1–L2 differences, Nashaat-Sobhy and Llinares (2023) studied written definitions in the discipline of history for CLIL primary and secondary students (6th and 8th grades, respectively). They found that primary school learners favoured the L1 for the CDF 'define'. Nevertheless, secondary school learners produced more formal definitions, and their L1 and L2 productions did not differ substantially. Similarly, Evnitskaya and Dalton-Puffer (2023) examined the oral use of the CDF 'categorize' in history and science in CLIL education in 6th grade, arriving at the conclusion

that there was not any evidence to suggest the existence of L1–L2 cognitive or linguistic differences. Finally, in his analysis of CLIL university students, deBoer (2020) reported that even low-proficiency speakers (approximately A2) were able to employ CDFs when working on content in a meaningful way.

One example illustrating how more mature and proficient individuals make more frequent and varied use of CDFs and often merge them in the same proposition can be found in Table 5.3. Extracted from Bauer-Marschallinger (2022), it shows the answers that the same student (a sixteen-year-old Austrian attending an English CLIL school) produced in the same type of history task before and after a two-month programme on the use of CDFs. The sample was coded by the researcher according to the CDFs identified.

The tasks required students to describe a picture, explain its connection with the history topic in question, evaluate whether it was representative, and argue for or against its current relevance. In the first essay, it can be seen how the student simply reproduced facts that she remembered, without displaying any problem-solving skills or deconstructing the source in a comprehensible way (i.e. she was only using 'report', *RE*). After the intervention, however, the student not only presented declarative knowledge but also articulated her communicative intention ('evaluate' and 'report', *EV* and *RE*), supporting her assessment with an explanation relating to the historical context ('explain', *EA*) and with what she saw in the picture ('describe', *DS*) (Bauer-Marschallinger 2022).

Table 5.3 *CDF development (Bauer-Marschallinger 2022:245)*

| | |
|---|---|
| Student ZEA11 (B)<br>Pre-intervention task | RE: {Exploration was not always about exploring, but to find ways how you can export and import goods<br>– The /Handelswege/ were also important to build new relations to an existing country<br>– Many slaves were used for the colonialization<br>– There were many inventions when the explorations began} |
| Student ZEA11 (B)<br>Post-intervention task | EV: {I think it depicts truthfully because as I said earlier it was important to have more exports than imports and [EA/ RE: if you want to achieve this, it was necessary to minimize the costs of the transport and production of many goods and products]. [DS: For example, in this picture we see a woman as a colony serving the other woman (the mother country) raw material, to produce cheap goods and then export them.]} |

### 5.6.3 The Evolution of Cohesion

The little research that has been conducted on cohesion to date has yielded mixed and even conflicting results. In quantitative terms, no clear linear developments have been identified so far. Furthermore, this is the only area of discourse in which there seems to be differences between L1 and L2 development.

L1 cohesion research seems to show that the use of local cohesive devices (i.e. cohesion within and between sentences) traces an inverse U-shaped curve as children grow older and become more proficient L1 speakers:

- From 2nd to 8th grades, children increase their use of referential pronouns and connectives (Crossley 2020) in order to produce texts that are easier to comprehend and process. In other words, they produce less sophisticated texts with 'more explicit cohesive devices to guide the reader' (Crossley et al. 2011:303).
- From this age on, the use of explicit cohesion cues stabilized and then decreased (Crossley 2020). In other words, more skilled writers produced texts that were more sophisticated and less cohesive (Crossley et al. 2011). In fact, the use of local cohesive devices by mature L1 speakers was found to be negatively correlated to essay quality: the more they used them, the lower the mark the expert evaluators awarded them (Crossley and McNamara 2010, 2011).

Regarding the use of global cohesive devices in an L1 (i.e. cohesion across larger segments such as paragraphs or entire texts):

- Semantic similarity between paragraphs significantly correlated with ratings of essay quality (Crossley et al. 2011; Crossley and McNamara 2011; McNamara et al. 2013). In other words, the more they used words with closer meanings in the same paragraph (e.g. words belonging to the same semantic field), the higher the mark the expert evaluators awarded them.
- Lexical overlap between paragraphs also correlated with quality (Crossley and McNamara 2011; McNamara et al. 2013), indicating that the repetition of words or lemmas between paragraphs was also considered to be a trait of proficiency.
- Higher-quality samples contained a greater variety of causal, adversative, and temporal connectives (Crowhurst 1987; Myhill 2008).

As for L2 cohesion, there is a certain consensus on the use of local cohesive devices:

- Longitudinal studies (e.g. Crossley et al. 2010a, 2010b, 2016a) have revealed an increase in the use of cohesive devices by L2 speakers over time. Granados and Lorenzo (2021), for example, studied the L2 English of Spanish CLIL secondary students over three years, detecting an overall increase of fifteen more connectives per every 1,000 words. Furthermore, they identified a particular increase in their use of causal and adversative/contrastive connectives and a decrease in extended temporal connectives.
- Moreover, instead of having a negative impact on quality (as in the case of an L1), some studies have shown that there is a positive correlation between the use of cohesive devices in an L2 and writing quality (Jafarpur 1991; Yang and Sun 2012; Crossley et al. 2016b). In the case of Granados and Lorenzo (2021), for example, the increase in the use of causal and adversative/contrastive connectives might point to the greater use of the CDFs 'explain' and 'explore', respectively, the latter being considered the most advanced in terms of historical literacy. On the other hand, the decrease in the use of extended temporal connectives might indicate the transition from the narrative genre towards expository texts.

This difference between L1 and L2 cohesion may lie in the speakers' proficiency level: beginning and intermediate L2 learners would still be expected to use many cohesive devices regardless of their age (and therefore a high incidence of these would be very positively assessed), whereas advanced and proficient speakers would be expected to achieve more L1-like levels of explicit cohesion and would therefore reduce their use of local cohesive devices. So, the above-mentioned U-shaped curve would only correspond to L2 speakers who achieve a very high level of proficiency. For the rest, the evolution could be represented by a straight diagonal line that subsequently flattens out.

Regarding global cohesive devices in an L2, Crossley and McNamara (2016) found that, as occurred in an L1, texts written by more advanced L2 speakers contained the following:

- Greater semantic similarity between sentences and paragraphs.
- More lexical overlap between sentences.

The divergence between L1 and L2 cohesion is shown in Table 5.4. It contains two essays on environmental topics, both produced in English by

Table 5.4 *Essays on environmental topics produced by sixteen-year-olds in their L1 and L2, respectively*

| |
|---|
| Invasive non-native species are a major threat to Britain's environment and economy, costing upward of £1.7 billion annually. From a risk management perspective, every effort must be made to ensure that new, potentially invasive, species are not introduced. This essay however argues that, due to the unprecedented changes to global climate, some endangered species (those at high risk of extinction) must be relocated to a more suitable environment to ensure their survival, despite their risk of becoming invasive. To decide which species are suitable for introduced, two features must be considered: the damage a species would do to its introduced ecosystem, and the effect of the species' extinction. If the damage likely to be caused by a species' extinction is greater than the potential damage to its introduced ecosystem, it would be beneficial to introduce it. |
| Climate change is increasing 84 per cent of species' native range boundaries (the boundaries of the area to which they are indigenous) poleward; this becomes problematic for species whose ranges are not defined by climate. This is the case for the endangered Scottish crossbill (*Loxia Scotica*) a bird species found solely in conifer woodlands of Northern Scotland. […] |
| Can we do anything to protect the environment? The answer is easy: of course we can! We just have to learn and remember which activities we can do to save energy and not generate toxic waste. What I'm going to do is to explain the most common things we can do every day. |
| First of all, when you get up, remember to not waste water while you're washing your face nor light when you leave your room. It's the same while you're brushing your teeth! After that, don't forget to separate natural waste from plastic or cardboard. It's important that you recycle the rubbish in the different containers at the end of the day. With regard to commuting to work, you should go by foot or bicycle if it's possible. You can also go by bus if you have time. After work, when you return home, you can exploit solar energy by reading or doing anything in your courtyard. |
| Finally, you go to bed –remember to turn off all lights– with the satisfaction of having cared for the planet for a whole day. I'm sure that you barely realized it! Congratulations! |

sixteen-year-olds. Nevertheless, the first was produced by a native English speaker from London, whereas the second was produced by a Spanish speaker from Seville, who was studying English as an L2 at school (at B1 level, approximately).

Both excerpts are equally long (191 words), yet the L2 speaker employs many more explicit cohesive devices (e.g. connectives) in her essay. When considering the number of connectives as computed by MultiAzterTest (underlined in the texts), the L1 essay contains only eight connectives, whereas the L2 essay contains seventeen. Furthermore, an analysis of the nature of those connectives can provide more interesting insights. The L1 speaker uses mostly adversative connectives (e.g. 'however' and more

importantly 'despite'), clearly characterizing mature language (indicating once again conciseness and the use of the CDF 'explore'). In contrast, the greater incidence of connectives in the L2 essay is mainly due to the greater use of the temporal kind (e.g. 'while', 'when', 'after', etc.), specifically, no less than seven, still showing a tendency towards narrative rather than expository language.

The first essay's relative loss of local cohesion as regards the use of connectives is however compensated by referential cohesion, a more implicit cohesive device. All the sentences in the L1 essay share at least one noun with their adjacent sentences (e.g. 'species' between sentences 1 and 2), thus pointing to a certain theme–rheme structure and to cohesion established via thematic content. In contrast, the L2 essay does not contain any noun overlaps between sentences, local cohesion being established more explicitly by means of connectives.

In terms of global cohesive devices, both essays display matching levels of semantic similarity between sentences and paragraphs, according to MultiAzterTest. That is, both writers show the same consistency in creating conceptually similar sentences and paragraphs.

## 5.7 Conclusion

Discourse is a level of language that refers to anything beyond the sentence. It pertains to the interplay between the social world and language use, which leads to certain linguistic and non-linguistic practices. The study of discourse is relevant because a speaker does require not only grammatical knowledge of syntax, morphology, and phonology but also social knowledge about how and when to use utterances appropriately. Furthermore, it can be used to analyse both the quality of texts and the stage of development of speakers.

The production and processing of discourse requires the interaction between cognitive macrostructures (information processing and organization) and language-driven principles. In this interaction, both the lexical and grammatical systems are activated to ensure that appropriate words are combined or interpreted in the right way to produce or understand complex texts. Nevertheless, attention to form in linguistic exchange is absolutely peripheral and determined by the meaning schemes generated.

It is this realization that made formalism lose ground to functionalism and cognitivism in the study of language learning. Grammar rules were replaced with topics, settings, functions, and notions as the units to be rationally organized and sequenced in language syllabi. Text genres and

CDFs took centre stage. Text genres, comprising a set of complex oral or written responses to the demands of a social context, are usually classified as narrative, descriptive, expository, or argumentative. CDFs are language patterns that crystallize in response to recurrent communicative intentions regarding content knowledge. They are also influenced by thinking skills, with the predominant taxonomy differentiating between seven different ones: categorize, define, describe, evaluate, explain, explore, and report.

Two other notions central to discourse are cohesion and coherence. Cohesion is a text property relating to the presence or absence of explicit cues signalling the connectedness between its elements. On the other hand, coherence lies in the mind of readers and is related to their ability to restore the original message using not only textual information but also the contextual kind, assumptions about communicative intentions, and background knowledge. Nevertheless, the use of cohesive devices does depend not only on the level of writing development and proficiency of speakers but also on the assumptions they make about the reader's knowledge and how much explicit guidance that reader will require (Tanskanen 2006). All of which complicates the study of cohesion.

Research on the development of discourse is much less abundant than that on lexis or syntax. Furthermore, it has often yielded mixed and even conflicting results. In this field, computational tools still have a long way to go before encompassing the full complexity of discourse. However, some such as Coh-Metrix, TAACO, and MultiAzterTest include measures that can be used as proxies for certain aspects of discourse.

Similar cognitive and linguistic patterns have been reported for monolingual and bilingual individuals. Crucial developmental milestones have been identified regarding the use of decontextualized language and organizational strategies for reference maintenance. Even though each language has different surface mechanisms for discourse cohesion, these follow a similar underlying organization, chiming with Cummins's 'common underlying proficiency' and 'interdependence' hypotheses (see Chapter 1). Nevertheless, the uneven development of L1–L2 syntax may produce some delay in that of L2 discourse, pointing to the existence of certain proficiency thresholds (see Chapter 1).

Regarding text genres, as individuals progress through different stages of education and become more proficient writers and speakers, they also transition from narrative to expository texts. Adherence to the norms of the narrative genre (which focuses on the unfolding of events in a time frame) is detected as early as in preschool, before being fully acquired at the age of ten. The norms of the expository genre (focusing on the expression of

ideas) are not usually fully acquired until adolescence because of the cognitive and linguistic development resulting from varied language exposure and increasingly greater academic demands.

As to CDFs, the scant longitudinal research performed to date seems to indicate that more mature and proficient individuals make more frequent and varied use of CDFs and often merge them in the same proposition, leading to functional stress. The type of CDF employed in each text can be task-dependent. However, the stage at which each type of CDF is developed seems to be determined by the discipline. Finally, regarding the use of CDFs in an L1 and an L2, no evidence has been found to suggest the existence of L1–L2 differences.

Finally, in terms of cohesion, as L1 speakers mature and improve, their use of local cohesive devices (i.e. cohesion at a sentence level) seems to correspond to an inverse U-shaped curve, increasing approximately from 2nd to 8th grades, before stabilizing and decreasing. The use of global cohesive devices (e.g. semantic similarity and lexical overlap between paragraphs, diversity of connectives, etc.) does seem to increase with age and proficiency. The same patterns have been identified for L2 speakers. However, regarding the use of local cohesive devices, many studies have only identified the ascending phase of the inverse U-shaped curve, a difference that may be down to the level of proficiency of the individuals under study.

CHAPTER 6

# *The Bilingual Discourse of History*

## 6.1 Introduction

An essential discourse function of language is the narration of the past or the description of events as they happened in an earlier age. Communicating the past can involve a broad variety of genres, ranging from the trivial personal anecdotes of a circumstantial reporter to the formal presentation of a metanarrative of national greatness. Either way, all historical narratives originate from a narrator, namely, someone who heard or witnessed certain events, as is embodied in the original meaning of the Greek words *historia* and *histōr*, that is, an enquiry, narrative, or account written by a learned, wise person (Lledó 2011).

Nevertheless, the reliability of any account is undermined in that transition from eyewitness to narrator. In the classical world, these two roles were represented as a split between *mythos* and *logos*, a description of what occurred and an oral account in which past events were reconstructed (Carrard 1992). Myths described life beyond the realm of the rational, and it was only language – as a logical artefact – that provided a well-ordered account, a proper representation of real life. The past, as a logical sequence of previous events, therefore, emerged in language.

Not unexpectedly, it was this shift from the visual, as in witnessing events, to the verbal, as in reporting them, that forged the true nature of history. Nevertheless, the discipline has a few caveats that have a bearing on the bilingual literature:

- History is not about what happened but about what written accounts claim that happened, the latter comprising not only words but also other semantic elements, including graphs and drawings as in certain historical genres like chorological maps. But understanding history as a faithful reflection of past events, a documentary reflection of life, would ignore the fact that a historical document is a personal representation. For the sake of impartiality, some have proposed a narrative lacking in

style, as in *Writing Degree Zero* (Barthes 1968), so as to prevent rhetorical devices from interfering with an accurate and precise account. Of course, this rhetoric of non-rhetoric is an artifice, for the narrator always controls the narrative and provides a style (Carrard 1992).

- History is not a succession of facts. For the immature mind, it consists of a chain of events which are linguistically translated into a series of coordinate sentences: 'X happened and Y and Z, too'. This is, however, a naïve account that overlooks the complex expression of causality. In historical discourse, people are effaced, actions become things, and chronological sequences become moments frozen in time. Philosophical enquiry into the structure of historical knowledge purports that historical events relate to one another in the form of thresholds, ruptures, breaks, mutations, and transformations (Foucault 1969). Language possesses all the necessary resources for expressing such complexity.
- History is not objective. The description of an experience is personal and subject to the cognitive framework of narrators who shape events according to their own interests. In the discourse of history, words are ultimately defined through their careful choice and personal interpretation. All historical accounts have an ideological bias not only because of the personal stances taken by their authors but also because they represent the prevailing worldview, which has a specific influence on that of their social group (class, ethnicity, nationality, race, etc.). All social groups have a right to be heard and the fact that they express themselves in an L2 underlies the identification of their version of past events with the language community in question (Oteíza 2009). History can become a bone of contention when it is used to impose a specific perspective, to evaluate ideas, to compare values, or to assimilate an ideology. In history, worldviews involve the abstract representation of ideas (Martin and Rose 2003; Martin and White 2005; Martin et al. 2010).

These precepts are useful for studying bilingualism because many of the debates on historical biliteracy in education ignore the very nature of the discipline: what history is, how language is used to recount it, and how the use of an L2 can transform it.

## 6.2 The Discourse of History

Language is indispensable for narrating past events – history. Narrators and storytellers describe those events using linguistic resources that construct

and distort reality in narratives tainted by their own worldviews. When recounted, events are recreated and transformed. Indeed, history is not believed to exist outside language, and accounts of the past presented as factual representations of ancient events are simply not credible (Barthes 1968). Rather, historical representation is thought to operate within the limits of natural language, which has led to the emphasis being placed on the role of rhetoric, an avenue of research that has naturally been called a 'linguistic turn' (Carrard 1992; Yilmaz 2007). All lexical choices and grammar involve relevant subject matter. In the case at hand, language is used both to express and to judge history. Historical knowledge structures are, therefore, heavily dependent on the written or spoken word (Fitzgerald 2011).

Textualism is a new approach to the discipline based on the deep-seated belief that language fleshes out history, which, after all, is language in operation. Contemporary schools of thought hold that each culture imposes a certain logic in the presentation of events, which hinders other possible interpretations of the facts. This establishes a sort of cultural grammar of history that makes objectivity unfeasible. Historians need to adapt their accounts to the historical discourse on which readers base their interpretations. This 'emplotment' of historical discourse in rhetorical moves activates the interpretation methods that they routinely implement (White 2010).

Moreover, there is growing concern that historical consciousness is based on the same rhetorical structures sustaining fiction; but unlike fiction, all historical accounts have a moral duty to be trustworthy. When alternative accounts exist side by side, they struggle to impose their own version of events, which becomes a semblance of truth or post-truth. What is important in this vision is that credibility depends on the language structures underpinning those accounts (Schleppegrell 2004; White 1973, 1987, 2010).

This emphasis on the textual nature of history brings four critical elements of historical discourse into focus: narration, voice, time, and causation.

### *6.2.1 Narration*

All historical accounts are included in the narrative macro-genre. Simple narratives, like, for instance, bedtime stories, feature predictable characters, plots, and chains of events. Alternatively, historical dissertations, an intellectual challenge for professional historians, include narratological devices, like digressions and plot twists. Notwithstanding their differences, both report actions, as all narratives do. As mentioned earlier, they all describe events in which narrators use their writing skills to conceal their identity. Irrespective of their differences, all narrative genres thus share

some common ground: (a) they conceptualize the past as a series of events; (b) there is no trace of the historian or narrator, as a subject, in the text; (c) they present characters as agents or patients of events without apparently intervening in their course; and (d) they avoid overt rhetoric. The overall intention is to create a mirror effect which is true to reality. In point of fact, speculation in history elicits vague hypothesizing and bias.

Carrard (1992:36) elaborates further on the characterization of narratives with two alternative features: a narrative must present at least two events or situations in a chronological sequence; one event must take the form of a temporarily ordered proposition and the second must involve a transformation, a shift from a prior to an ulterior state. All of this calls for temporal foregrounding, which can also be spatial or topical. Secondly, the basic structure of all historical genres is the 'narrative sentence' (Lozano Hernández 2015). The elementary components of this language unit include the combination of temporal clauses in a precise manner. A narrative sentence describes an event A within the time frame of an alternative event B, which takes place somewhere in the realm of the first action. In the historical statement, 'The fact that Russia withdrew from the blockade was another reason why Napoleon decided to invade it', the first action, the withdrawal, only makes full historical sense in the context of a future invasion, which the narrator would have been unaware of when the first action occurred.

A narrative sentence, therefore, describes an action unknown to the agents but known to the historian. This obviously would not be the case of consummate chroniclers, namely, people with a first-hand experience of the reality that they are describing, which they also narrate from beginning to end, like, for example, Caesar and his *De bello Gallico*.

History narrators not only have to cope with the lack of first-hand accounts because the events in question transpired long before they were born but also with the fact that they are not all-knowing in another sense. Whoever undertakes to narrate a historical event needs to pay special heed to the knowledge already possessed by readers/listeners and to the relevance of the information with which they provide them. They should also present reality piecemeal, selecting only that information deemed relevant and adaptable to the cognitive and reading capacity of readers/listeners. This entails applying the 'Goldilocks principle', for the discourse of history needs to contain just the right amount of information – in sum, neither too much nor too little – to present a standalone narrative as a reflection of past events. In other words, both the chronicler and language always intervene.

The intention of many stylistic devices is to make texts consistent and to engage readers. Tropes are not uncommon in the construction of historical discourse. Unexpected characters or forces (*deus ex machina*) move back and forth in the general time frame of a story (flashbacks), and elements of suspense (cliffhangers) are used to resolve complex historical situations.

Figures of speech are also employed to create the impression that facts are like living entities, as in the expressions 'the death of dogma' and 'the growth of myth'. In the same vein, dynasties are illustrated by family trees, depicting the natural relationship between successors and descendants. Like natural plants with their biological stages of development, family trees are born, develop, and decline, while also conveying the idea that they correspond to a natural order of things.

Much for the same reason, historical human processes are depicted as things, a strategy also known as 'reification'. This implies that actions are presented as abstract constructs in a sort of mental evolution that converts them into historical notions (revolution, secession, rising, etc.). Behind these abstract concepts lie human characters who are not represented but remain concealed by rhetorical devices like nominalizations. Consequently, in the narration of complex historical movements, actors often remain in the wings (see, for instance, the conceptualization of fascism in Eco 2018).

Additionally, as a rhetorical device, historians make a point of concealing their identity. This is also common practice in scientific prose, in which those who performed the experiment and measurements or who observed the phenomenon are not often mentioned. The passive voice, the most common way of organizing the content of a clause in scientific prose, is omnipresent in historical works for the same reason. Nonetheless, the opposite is sometimes true, with historians resorting to a number of techniques to make themselves visible in their narratives in order to lend weight to historical evidence and provide a testimonial style.

### *6.2.2 Voice*

All historical accounts are personal, for historians are expected to take personal stances. However, the validity of their accounts depends on their objectivity, for which reason they should do their utmost to describe events impartially.

The quest for objectivity has given rise to the notion of focalization, namely, the narrator's standpoint or focus of perception. In 'zero focalization', the narrator describing events and situations knows and says more than the characters, as in the classical novel *War and Peace*. As to 'internal

focalization', the narrator discloses what the characters know, as in modernist and postmodernist fiction like, for instance, *The Ambassadors* or *Ulysses*. And, lastly, in 'external focalization', the narrator focuses on visible and external aspects and thus says less than the characters know. These fundamentals of narratology have some bearing on the historical accounts of real events (Genette 1980; Rimmon-Kenan 2002).

Focalizing in one way or another involves personal stance-taking, a complex form of historical reasoning. Taking an informed stance pushes cognition to the limit and, consequently, is more demanding than other historical macro language functions, such as the narration of events or the expression of causality. This threefold structure – events, causality, and stance-taking – forms the backbone of historical discourse.

For voice development and to make themselves present, narrators require epistemological tools that allow them to tell history. Forming part of the heuristics used in the telling of history, the purpose of voice is to clarify that the narrative is based on documentary evidence from reliable sources and also that alternative views have been compared and corroborated, with well-balanced data collection techniques that lend credence to the views expressed. Finally, narrators also need to contextualize events spatially and temporally.

Sourcing, corroboration, and contextualization, the most commonly used heuristics in telling history (Wineburg 1998), allow to construct an abstract model that acknowledges competing ideas, sweeping changes in opinion, and new ways of considering social phenomena. With these functions, events succeeding one another in a chain of causal connections are intertwined. These events – the building blocks of history – can be of two types depending on the extent to which they alter ideological systems: 'non-reproducible events', which modify the system by bringing about a disruption that leads to a reorganization; and 'reproducible events', which are elements of the system whose mechanisms they reveal without altering it (Morin 1972). For their part, subsidiary events possess a symbolic significance and barely scratch the surface of historical transformation and the shaping of a past reality. The causes of transformations in the narrative are clarified in the interpretation of what occurred.

### *6.2.3 Time*

That historical discourse pursues social transformation is clearly reflected in the solemn statement, 'Who controls the past controls the future and who controls the present controls the past' (Orwell 1949). This represents

both the concept of ideological control and the complex time frame that historical discourse needs to encompass. History is not only related to past and future events but also recounts those of an imagined time, like, for instance, when employing the subjunctive mode. In the latter case, historical prose ponders on how events might have unfolded in different circumstances, known as counterfactual explanations, a method that has been widely debated (Hobsbawm 1997).

Historical discourse combines different types of time: 'linear time', with a beginning and an end in which the future is fundamentally different from what has gone before, and 'cyclical time', also known as the wheel of time or history, which is characterized by the traceable repetition of events and is highly influenced by the cycles of the natural world (Coffin 2006a). This involves a sort of organizational deregulation of the text at all levels: sentences, paragraphs, and genres. To make the discourse intelligible, narratives need some degree of anachronism, namely, passages referring to what had happened before, what will happen after, and what is happening simultaneously with what is being recounted – narrative devices known as 'analepsis' and 'prolepsis' (Carrard 1992).

As mentioned earlier, the time frame of historical discourse includes the time of the action and the time of the narrative. For historians, the latter is independent of the time frame of the former, for they are free to interrupt their work and then take it up again whenever they please. This is not the case with chronicles, though, a genre in which events are recounted at the same time as they are witnessed (Ricoeur 2016). For instance, nobody could have said, 'The author of *Don Quixote* was born in 1547', on the day that he came into this world, for it refers to one of Cervantes' greatest literary achievements when he was an adult. It is the kind of sentence used by historians, not chroniclers, who in their prose can jump backwards and forwards in time, regardless of when events actually occurred.

Narratives use different kinds of shifters to express time. One of them has to do with the role of the narrator, who can describe the background of an action, as a mere storyteller, before occupying centre stage in the narrative, engaging readers with the use of expressions indicating that what follows is based on personal experience: 'As I have heard', 'According to my sources' are recurrent 'shifters of listening', as they are known (Barthes 1968; Lozano Hernández 2015). On the other hand, 'shifters of organization' are, as their name implies, responsible for text organization. Narrators use this device to gain full control over the narrative for the purpose of guiding readers through it. This requires a well-thought-out distribution of information to which readers can relate their previous knowledge, gained from

the text in question or from elsewhere. In order to allow them to assimilate the new information and to match it with their previous knowledge and mental schemata, expert narrators can accelerate or slow down historical time, like, for example, covering centuries in a chapter and then devoting the following one to the in-depth examination of a specific event transpiring at a precise historical moment (Van Dijk and Kintsch 1983).

Narrators manage the course of events and, as omniscient agents, take advantage of hindsight. The challenge facing historians is not the lack of facts but their adequate selection and organization because events hardly ever played out as historical actors imagined, thus giving rise to 'historical ironies'. These ironies, which reach historical proportions when accounts include blatantly mistaken predictions of future events, are not infrequent, for reversals of fortune and twists of fate make unexpected turns very hard to predict. A good contemporary example of a historical irony was the early description of the SARS-CoV-2 coronavirus (COVID-19) as 'simply a bad cold', which eventually caused millions of deaths. In the same vein, catastrophic oil spills in the North Atlantic were initially described by government spokespeople as 'mere trickles'.

### *6.2.4 Causation*

There is another dimension to history apart from accurately describing past events. History, as a social discipline, is enlightening for future generations, for it informs them about the consequences of acts, all of which have earned the discipline the classical name of 'the teacher of life', as Cicero famously described in *De Oratore*. History teaches lessons mostly by describing the causes of events that could occur again should similar circumstances arise in the future, a principle underpinning the conceptualization of the discipline as 'the past as a process of becoming the present' (Hobsbawm 1997:21). History is therefore not so much the study of past events but of their causes.

Besides agentivity, which identifies the forces that shape the past, causality is another main historical function (Lorenzo and Dalton-Puffer 2016). The identification of causes is a major bone of contention, as ideology can influence the importance attached to some events as the triggers of others. As explained further, complex causation requires cognitive maturation. To the naïve mind, effects are only the result of a sole cause, but knock-on effects are hardly ever the case in history.

The scientific identification of causes and effects has formed part of the study of twentieth-century ideology, which has strived to identify laws

of mechanical causality: principles that form the deep structure of events which, at any point in history, will lead to foregone conclusions. To the opinion of many, causation is a perfect correlation; the fact that one action leads to another with historical consequences involves identifying consistencies, that is, historical events that usually go hand in glove: overpopulation and hunger, poverty and revolution, to mention just two basic historical pairings (Pearl and Mackenzie 2019).

In his ladder of causation, Pearl and Mackenzie (2019) refer to three layers (or rungs) that require increasingly more complex reasoning. The first level, *association*, is derived from passive observation, like the predictions made by election polls. The second rung involves *intervention*, where causality is inferred through actions or experiments, such as the outcomes of scientific trials. At the highest level are *counterfactuals*, which reflect more mature reasoning. This level requires speculation, imagining alternate scenarios and retrospection to understand causal relationships. An example of counterfactual reasoning is the statement, 'If the president had not shifted his position on that issue, the recession would have been more severe.'

As Pearl and Mackenzie (2019) claim, a model of the underlying causal process is needed to bridge the gap between X and Y. In the hard sciences, in which results are supported by empirical evidence, it is claimed to be a law of nature. If results are uncertain, as most would admit in the case of history, a 'theory' is proposed. As the mental complexity of a dilemma increases, so does its linguistic expression. Accordingly, the language employed for simple observation is less complex than that used for describing results, and both are less elaborate than that required for speculation.

Causality can take several forms in historical discourse. It is often made explicit by means of direct linkers like 'because' or 'for the simple reason that'. These linkers can reveal a naïve historical insight, a certain degree of self-assurance that few expert historians would hesitate to display. Explicit linkers give the impression that the succession of facts is a sort of domino effect in which one thing leads to another ('determining causation'). 'Indirect causation', more common in more analytical texts, uses fewer linkers and leads to 'enabling causation'. Even though causality is central to historical analysis and ultimately quenches the thirst for historical knowledge, all discourse functions are present in historical narratives. Subject-specific cognitive operations such as classifying, contrasting, and hypothesizing are relevant semantic relations.

As discussed in Chapter 5, Dalton-Puffer (2013) proposed a concise construct consisting of seven CDFs: classify, define, describe, evaluate, explain, explore, and report. Cognitive discourse functions should be

regarded as being central to historical literacy as they form an important part of what is known as subject-specific knowledge (Lemke 1993). They are the actual interface and point of integration between content and language. The language used for expressing reasons, describing types of events, and defining facts is best studied in terms of CDFs, for recurrent historical expressions use similar linguistic patterns, an issue discussed in previous chapters.

## 6.3 Historical Literacy in an L2

In all countries, one of the obligations of education is to make sure that students have a knowledge of the past by teaching them history in the classroom. As they become more literate in the subject matter, students acquire the ability to interpret life as it was and its present effects. To be historically literate, they need to develop the following skills (Nokes 2013):

- *Epistemic stance*. Students need to learn how historical knowledge is constructed, which implies questioning hegemonic narratives and accepting the existence of equally valid alternative views. They should also be aware of the fact that they can make their own historical discourse sound more credible by using the appropriate data exploration tools.
- *Historical heuristics*. Students need to develop the ability to consult reliable sources and doublecheck facts, while respecting truth conditions and interpreting events in the historical context, on the understanding that isolated facts provide limited insights.
- *Historical meta-concepts*. Students need to have a command of historical notions that transcend time and space and lay the foundations for historical analysis: change, time, effect, evidence, and account.
- *Historical empathy*. Students need to know that not only structural factors but also the beliefs, values, and ideas of men and women, among other human factors, intervene in the construction of the past.
- *Reductionist thinking*. Students should avoid both reductionist and dualistic thinking, for simplifying complex ideas or issues or relying on the good and bad dichotomy, among other stereotypes, prevents them from abandoning prejudiced interpretations and broadening their worldviews. In addition, they should beware that mainstream thinking is a means of controlling society and ignoring minority perspectives.

Apart from these skills, the discipline's main resource is language. Although the language of choice for history education is more often than not an L1, the subject can also be taught in an L2, in which case learning conditions are necessarily different. As historical discourse is political, nations and social groups of one kind or another struggle to impose the language for its narration.

When history is taught in an L2, due attention should be paid to a major factor: the interface between language and content. In history, language is hard to process and understand, and many meanings are ambiguous either because the semantic relations are not fully explicit or because the telling of history requires mature language whose interpretation and implications are not always clear. When students need to be sheltered or scaffolded in an L2, care must also be taken to avoid using an overly sophisticated discourse (Echevarría et al. 2017). To ensure that they understand, it is essential to simplify or reduce language measures such as length, vocabulary size, and so forth.

An important line of research on learning history in an L2 has to do with the linguistic adaptation and grading of disciplinary content. As is usually the case in interactions between speakers with disparate language skills (e.g. mother or foreigner talk), historians adopt the reference terms of readers with a lower level of proficiency in the language, also known as 'lexical entrainment'. This involves adapting language with resources like paraphrases and circumlocutions, among others. Historical prose does not only have to be adapted both cognitively and linguistically to the level of students but also to that of L2 learners, resulting in texts of a different nature, with those written with the scientific community or the general public in mind being converted into school subject matter (Crossley 2020; Lorenzo 2008; Musumeci 1996; see also Chapter 2).

Another related issue is the specification of the language content of history, as this may or may not be established in official curricula. Language syllabi often specify the target language, plus the structures, lexis, and functions to which learners should pay attention. The interface between content and language is one of the cornerstones of bilingual research. Disciplinary knowledge structures use recurrent language: the language for integers in maths, medieval polyphony in music, and ecosystems in science hinge on the knowledge of their respective lexicogrammatical structures and functions.

Research on multilingual education has confirmed, often through classroom observations, that historical CDFs are absent unless learning is enhanced by the consistent presentation of rhetorical models and practices.

As with any other chunk of discourse – word, multiword, or lexical expression – historical language is acquired, for which reason students need to be made aware of the lacunae in their academic language when attempting to describe a past event.

Historical discourse in an L2 poses serious problems, for single statements tend to contain more than one discourse function; a sentence may classify and explain at the same time, thus causing a certain degree of 'functional stress'. This is so because, in more mature discourse, semantic relations rely less on overt markers, like adverbials or linkers, which are more easily noticeable and serve to indicate correct interpretations. Without them, prose is more opaque and more demanding. A permanent feature of mature discourse is 'asyndesis', in which writers do not rely so heavily on markers to make their point, which obliges readers (whose ability to understand advanced discourse is taken for granted) to shoulder the communicative burden. As a rule, competent writers produce discourses that are in keeping with their readers' expectations and previous knowledge, which enables them to make do with less linguistic elaboration. This results in a more coherent discourse – the written information chimes with the mindset and vision of the reality of readers.

All considered, historical biliteracy is a challenge, even more so in an education system in which formal teaching and learning start at early ages and depend on cognitive maturation, an ongoing process in the early stages of schooling.

### *6.3.1 Developmental Factors in Historical Literacy*

To the challenges of learning history in an L2 should be added the fact that there are already cognitive constraints in the early stages of schooling. Storytelling is a basic communicative function that does not require advanced cognitive skills. When the intention is to offer a formal account of the past, however, historical discourse comes into play, which relies on advanced language structures that require cognitive maturity and language competence (Coffin 2006a, 2006b; Carretero and Van Alphen 2014).

The historical discourse of learners first takes the shape of personal recounts. They then describe facts by documenting a sequence of events and actors (biographies and historical recounts). Later on, causation and agency become central to their discourse (i.e. causes and their explanations). Then, after reaching full maturity, they can describe multiple causes and effects, a stage in which they develop their own voice. With this classification in mind, it has been observed that historical discourse has two

major turning points (Martin and Rose 2003): the comprehension and production of causation and, at a later stage of language development, the comprehension and production of multifactorial causality.

Furthermore, these processes correspond to stages reached at specific ages, signifying that written literacy plays out over time with visible milestones along the way. When aged between eleven and thirteen, learners merely record; between the ages of fourteen and sixteen, they can now explain complex causes in the construction of the past; and, finally, between the ages of sixteen and eighteen, they take a personal stance and make critical and personal interpretations of past events. As illustrated in the previous chapters by examples of essays written by students, recording, explaining, and arguing are three critical periods in the development of historical literacy (Coffin 2006a).

As already observed, the later stages of mature historical discourse are reflected in the expression of causation. In their early-stage 'personal recounts', students convey a linear form of causation which is expressed in language with a sole causal construction. This stage is followed by 'historical recounts' in which reality is depicted in its full complexity, with many different perspectives vying with one another, and in which events hardly ever have a sole cause, which leads to multicausal situations and multifactorial constructions. At the level of expression, cohesion procedures are employed to present one or multiple causes, including linguistic markers of reference, lexical ties, conjunctions, ellipsis, and substitution, all referred to earlier in the book (see Chapter 5).

The semantic and syntactic mapping of advanced historical language functions has shown that L2 learners are at a clear disadvantage, for they are obliged to struggle with unfamiliar language categories, thus being deprived of essential knowledge for gaining a full understanding of past events. This knowledge gap can only be filled by means of programmed attention to language, such as 'sheltering', 'adjusting', 'scaffolding', and 'integrating'. Students learning history in an L2 must perform above their existing L2 capabilities, a situation also called 'pushed output' in L2 acquisition studies. In the early stages of schooling, the written output of students is consequently replete with errors, to the extent that this lack of competence has been described as 'performance without competence' (Wray 2002). Students mentally construct a rhetorical frame for planning their utterances in long stretches of discourse but are then unable to flesh them out because of insufficient language resources.

The other essential factor is content. In the construction of time, history defies the young mind (Voss and Carretero 1998; Díaz Barriga et al.

2008). By the end of primary school, students are still unable to grasp many historical dimensions, like the transition between lived time and the scientific concept of time. Time is at first embedded in contexts of action and bound to objects. Then it is understood as a scientific construct organized in terms of exactness, subject to the ideal of the mathematization of scientific knowledge (Lippitz 1983). Students who do not make any progress during these stages misinterpret facts. Presentism is frequent in naïve historical analyses, meaning that students assess past events using present circumstances as a yardstick, without realizing that they necessarily had to be different at the time.

In the initial stages, students not only limit causes to one (monocausality) but also only express consequences in the short term, as they are unaware of the social transformations brought about by a chain of events. For instance, counterfactuals require complex reasoning that may be too much for the young mind, which is usually incapable of imagining alternative scenarios. All early narratives feature personal views, usually expressed in a language that reflects a strong emotional reaction to past events, which can lead to dogmatism or dualistic thinking, namely, the good and bad dichotomy.

## 6.4 Bilingual Historical Literacy: Educational Tools

Bilingual school programmes often include history or related courses – social sciences, civilization, or environmental sciences – as a core discipline of their multilingual model. Bilingual education does not exist only for language learning, for biculturalism is also among its aims. Bicultural individuals usually avoid dogmatism, entertain different perspectives, live their lives beyond local cultures, explore reality beyond national borders, and understand that identities are self-constructed and multiple. Learning history in two languages enhances the skills essential for understanding the world, while offering learners a unique opportunity to understand 'otherness' and to accept national identity(ies) without falling victim to the cultural burden of hard-core monolingual ideology.

In Europe, the teaching of history in an L2 in multilingual settings has been used as a tool to overcome the worrisome belief that our understanding of the world is conditioned by the deep structure of our national tongue (on linguistic relativism, see the Sapir–Whorf hypothesis). In contrast to that folk theory, the teaching of history in more than one language embraces the principle of intersubjectivity, namely, that individuals speaking different languages in a communicative situation will find a way to understand one another if they persist. Comprehension lies not in sharing

the same code but in constructing a common ground in which communication is possible because the same set of meanings are experienced and all the stakeholders decide to adopt the same mindset (Byram and Tost-Planet 2000; Habermas 2007). In relation to the Western cultural tradition, this implies rethinking the Tower of Babel as a potential place of mutual understanding. Indeed, many of the European language policies currently being implemented as part of the cultural revolution of the second half of the twentieth century on the continent rest on this principle.

As with many education principles, however, they may only be paying lip service to cultural understanding. Dominant cultures may object to the historical vision of minority language students in the public debate and question the role of alternative readings. Likewise, it may be a serious impediment to teaching the complex discourse of history in an L2, for in bilingual settings this often needs to be adapted to competence levels. These two concerns have surfaced in the many highly ideological contexts in which teaching history in both an L1 and an L2 has been introduced to foster mutual understanding: American history taught in English to Hispanic students in the United States (Achugar 2009); the teaching of Middle Eastern history in Arabic and Hebrew in Israel (Adwan and Bar-On 2003); and the teaching of European history in Franco-German bilingual programmes (Breidbach et al. 2002).

To support L2 teaching–learning processes, there is a need to develop educational tools that break down the linguistic texture of a very demanding discipline into comprehensible input, thus allowing students to perform adequately. Two important tools for the organization of the languages of schooling are considered later: a bilingual assessment grid and a genre map of bilingual history teaching. They also contain examples of history teaching in an L2.

### 6.4.1 Bilingual Historical Assessment Descriptors

Cross-curricular education has highlighted the links between language and other subjects, like, for example, history and L2 competence (historical and language literacy) and maths and L1 competence (literacy and numeracy). The Council of Europe's plan for establishing benchmarks for 'historical communication' for school-level learners is a curricular initiative that points exactly in this direction (Beacco 2010:10).

In this initiative, implemented by the Council of Europe for some years now, a series of language descriptors has been established in relation to disciplines like history – also maths. Going beyond the classroom, it aims to

map in-school and out-of-school communication situations involving history. It is believed that modes of classroom communication should enable learners to handle social communicative situations with historical content, either directly or indirectly through the classroom use of these social forms (Beacco 2010:10).

From this standpoint, Beacco (2010) has explored the links between historical knowledge and language descriptors and in-school discourse types, producing a construct called 'historical communication'. The intention of this approach is to formulate sets of language competence descriptors and can-do statements, as found in the CEFR that maps historical content and discourse and cognitive skills. Such skills include the ability to 'place the occurrence under discussion in a broader context (chronological, cultural)' and to 'distinguish objectified discourse from judgement' (Beacco 2010:10). Insofar as the CEFR provides a model of language description and assessment, the initiative could provide a full map of the terrain of L2 historical literacy anchored in recognizable language competence levels.

This task was further explored under the auspices of the Council of Europe, which has long been aware of the fact that it is literacy that often stands in the way of learning, a problem that it is committed to remedying in its pursuit of quality education across the continent. Moe et al. (2015) have combined the well-known CEFR levels with area descriptors to establish tangible criteria for measuring historical communication or, to use an equivalent term, historical literacy. By combining CEFR levels with historical descriptors, education now has a user-friendly, learning measurement tool recognizable to the public. Additionally, a collaborative initiative by researchers across the continent has refined subject-specific descriptors for Maths, Science, and History, advancing efforts towards the much-needed development of a comprehensive chart of integrated descriptors across the curriculum (Lorenzo et al. 2024).

The consistent assessment of content and language skills using bilingual descriptors has provided long-awaited answers in multilingual education, for they mark the actual boundaries of the threshold levels, theorized as a condition for efficient bilingualism; that is, the descriptors specify the language levels at which learning is feasible. For instance, the assessment grid indicates that students aged between twelve and thirteen need to demonstrate that they have reached level B1, corresponding to independent users of the language, to succeed in history/civics courses taught in an L2. This principle holds for bilingual education of all kinds, including regular immersion, CLIL, and content-based courses, a generalizability that is essential for language planning in education.

According to Moe et al. (2015), it is only at the B2 level, when they are aged between fifteen and sixteen, that students can cope with the cognitive demands of historical content in relation to both production and reception skills, such as having the ability to understand detailed lines of arguments, to browse complex historical texts quickly, to explain historical concepts, and to provide evidence on which to base conclusions. The descriptors also serve as a warning that linguistic obstacles are at the root of early dropout and school failure, currently two of the most pressing educational challenges in Europe.

For all its convenience, the grid has several shortcomings, one of which is that it is mostly skill-centric with descriptors for speaking, listening, writing, and reading, and identical levels for history and maths. As of late, several studies have gone a step further and streamlined the grid with reference descriptors for the main CDFs, while limiting its scope to history only. This facilitates the exploration of the interface between content and language for the heuristics of this discipline.

For bilingual history teachers, the grid offers new opportunities for reflecting on language and exploring the connection between the narration of events and grammatical structure. In the long run, they have to walk the tightrope between content and language, in the quest for the most adequate language for teaching content, plus the structures that need prior focalization and practice: the past perfect for the French Revolution; reciprocal pronouns for the founders of Rome, Romulus and Remus; and reported speech for Columbus' discovery of La Española, to offer just a few examples (Alba Quiñones et al. 2018; Granados and Lorenzo 2024; Lorenzo et al. 2024).

Two main CDFs for expressing and assessing causality at competence levels B1 and B2 are shown later. Although CDFs have been addressed in the previous chapters, it warrants noting here how important it is to use tools that set bilingual education in motion and make historical literacy feasible for grassroots teachers through the consistent monitoring of progress.

*Evaluate*

B1. Students can give opinions, express (dis)approval, and take a simple stance for or against something, offering reasons or examples to support their views. They sometimes use qualifying adjectives expressing basic value judgements (e.g. 'this is sad/important') and can deploy explicit counterarguments, like 'it is true that …', and 'however, …'.

B2. Students can now assess facts and events in detail, providing reasons, examples, and/or information gleaned from various sources. The

assessment of facts is not explicit, being expressed by elements such as adjectives denoting historical appraisal and disguising subjectivity. They can also use a wide range of lexical units with positive and negative connotations.

*Explain*

B1. Students can provide monocausal explanations. They can explain causes and consequences using explicit elements (i.e. conjunctions and adverbial locutions) and use adverbial subordinate clauses introduced by explicit conjunctions (i.e. 'since', 'as', 'because', etc.).

B2. Students can integrate several causes culminating in a multicausal account. They can produce information-dense explanations by reducing the number of conjugated verbs through nominalizations. They can produce explanatory texts in which causes and consequences are not introduced by explicit connectives but by a range of verbs from the semantic field 'cause' which establishes relationships between nominalized elements. Lastly, they can use a wide range of lexical items with positive and negative connotations.

### *6.4.2 A Genre Map for Bilingual History Teaching*

There are now tools that help to organize bilingual education, such as genre maps of history which provide a consistent organizational framework for reading and writing tasks in multilingual education. This approach arises from the concern that any discourse that is taken for granted in the school setting places the less able at a disadvantage because it constructs a framework that guides language use. Practising grammatical units is said to contribute to real language competence only if they are considered within the broader frame of text and/or cultural units (on social practice as a unit of culture that involves cultural knowledge and action, see Mohan and Slater 2005).

In many advanced literacy programmes, the reception and production of genres fall into the 'integrated language curriculum' or 'languages across the curriculum' category (Bruce 2008; Vollmer 2007). In the literature, there are several definitions that connect genres with classical rhetoric. Indeed, genres have been defined as 'rhetorical actions that we draw on to respond to perceived repeated situations' (Hyland 2002:116) and 'the rhetorical structures fundamental to various forms of communication in a culture' (Hyland 2004:29).

Furthermore, genres are understood as the written output resulting from social interaction and, given the esteem in which those excelling in their

use are held, they should be central language units in curricula in order to ensure educational equity (Feez and Joyce 1998). Genre programmes were originally related to the study and practice of communicative functions and notions, which earned this approach to language education the name of 'New Rhetoric' (Johns 2002). Alternative approaches include the 'Languages for Specific Purposes' strand, more focused on the genres produced by professional communities (Bhatia 1993). However, it is only thanks to the proposal of the Sydney School, which, drawing from systemic functional linguistics, has substantiated the semantic components of language as the focus of classroom discourse, that genres have become a major approach in education (Hüttner 2007; Martin and Rose 2003).

In practical terms, genre-based programmes ultimately consist of a series of texts for reading comprehension and a set of genres that need to be produced in formal learning environments. Different terms have been coined to this end – genre chain (Swales 2004), mixed-genre portfolio (Hyland 2002), and genre system (Hyland 2004) – all of which revolve around the principle of cognitive processing during the reception and production of increasingly more complex texts. In multilingual education, genres have been used for teaching minorities speaking vernaculars and immigrants (for outstanding results in the language competence of young immigrants in Sweden in a short time span, see Acevedo et al. 2009), as well as for foreign language planning in official programmes.

Content and language integration at a genre level requires that attention be paid to the text properties of disciplinary discourse, such as that of science and history, among other subjects. It also calls for an understanding of the discourse features that communities of practice – including historians, mathematicians, and technologists – use to arrange their texts. This is so because, when all is said and done, 'The macrostructure of a text is based on knowledge of the organization of events and situations in the real world' (Van Dijk and Kintsch 1983:59).

This involves organizing content area texts: a genre map of area-related texts that helps to develop academic literacy in at least two languages (Swales 2004). As genre learning is based on semantic units of discourse, there is a need for a linguistic approach above sentence level whose grammatical framework incorporates discourse and pragmatic factors. Genre theorists have repeatedly held that the functional aspects of language and genres cannot be acquired through occasional, unstructured language contact or semiotic osmosis (Eggins and Martin 2003). Systematic awareness raising and practice in relation to text components are therefore necessary for genre acquisition.

Furthermore, genre methodology can inform multilingual education on how to avoid language being taken for granted. When drawing attention to the formal linguistic properties of content area genres in class, such as a commercial memo in business studies, a fieldwork observation sheet in science, or an arithmetic problem in maths, teachers are more aware of the role that language plays in their discipline.

All genres, whether they be discipline-bound or not, can be classified in relation to the major macrostructures and text typologies: argumentative, expository, descriptive, narrative, and instructive. Beyond this basic text classification, there is a very broad range of history genres with a diverse componential organization, namely, arranged around a full structure of rhetorical moves.

History genres include primary (bills of rights, speeches, placards, etc.) and secondary sources, that is, the telling of history (chronicles, biographies, annals, etc.), and academic genres solely for history learning (historical timelines, essay reviews, etc.). The selection of the appropriate items of the history genre set and their full combination with the rest of the areas is the contribution of history to language education.

Table 6.1 shows a comprehensive selection of history genres that could be used in the bilingual, upper-secondary education of students with an advanced L1 and an intermediate L2 proficiency level, which helps them to learn content through a language other than their mother tongue. Other principles governing the construction of genre maps include the following:

- *Language status*. A full genre map ultimately needs to account for the fact that genre selection must be streamlined according to the proficiency levels of students in the given language and that the discourse of history should not surpass their language competence. The genre components shown in Table 6.1 provide for this.
- *Text typology*. The line between texts and genres is not clear and conceptual overlapping is not uncommon in text classifications. Some formulations conceive genres as abstract ideas because 'what we see are texts, not genres' (Hyland 2004:13). Terminological considerations aside, most genre-based programmes have attempted to cover the best-known text typologies – argumentative, expository, descriptive, narrative, and instructive – in detail.

  History genres can be listed for all these text types, as can be seen in Table 6.1. As one of the most basic and familiar text types, personal recounts follow the structure of oral narratives well attested in children even prior to the development of literacy. More sophisticated rhetorical text types are used for advanced historical discourse functions: the

rendition of facts in time (biographies and historical recounts) or the development of cause and agency (accounts and explanations). Table 6.1 also includes a parameter that could serve as a benchmark for conceptual and linguistic history content complexity in an L2.

These language properties should be approached from the broader perspective of rhetorical structure. By way of example, the account of when Spain ceded Florida to the United States, in full property and sovereignty, by virtue of the Adams–Onis Treaty, simultaneously lends itself to historical and linguistic analysis. This dual analysis would delve not only into the historical circumstances surrounding the event but also into the treaty's genre structure. Accordingly, students would learn that such a genre involves a few rhetorical moves: a detailed description of the territories involved and the treaty's terms and conditions.

Area content forms part of that structure and students learn linguistic categories alongside history content. This integrated scheme has one further advantage: content teachers have an implicit knowledge of the text organization of their genres. Unlike ordinary readers or even professional linguists, bilingual history teachers have an implicit knowledge of the rhetoric of history genres, such as cosmogony, chronicles, and treaties. This being so, the organization of a curriculum integrating all the genres is indeed the job of content teachers, who can teach the idiomaticity of the historical expressions used, present language functions that students may lack, and scaffold language difficulties.

- *Input and output genres*. Another clear division is between the texts that students receive and produce. Bilingual classroom discourse tends to focus on receptive skills – with the caveat that not only comprehensible input but also comprehensible output is needed.

  Llinares and Morton (2010) have traced the discourse of bilingual secondary school students in history classes, before arriving at the conclusion that they not only incorrectly interpret historical processes: 'In lower secondary grades, students may see history in terms of biographical narratives in which historical events are explained by the actions of people rather than by more abstract historical processes' (2010:49). They also observe that students' interventions change depending on the situation in class, with a greater number of richer and more varied historical explanations being produced in interviews than in classroom discussions. It seems to be that history content is best presented when students can depend on their teachers to scaffold their messages, thus helping them to

Table 6.1 *A genre-based syllabus for a CLIL history course (Lorenzo 2013)*

| | L1 | L2 |
|---|---|---|
| **Input genres** | | |
| Argumentative | Sermon | Historical argument case |
| | Parliamentary speech | Historical argument and practice |
| | Libel | |
| | Panegyric | |
| | Poster | |
| Expository | Edict | Historical paper |
| | Proclamation decree | Historical dissertation |
| | Estate concession | Historical research report |
| | Capitulation act | |
| | Treaty | |
| | Bill of rights | |
| Descriptive | Chorology | Chorology |
| | Chorography | Chorography |
| Narrative | Chronicle | Chronicle |
| | News pamphlets | News pamphlets |
| | Cosmogony | Cosmogony |
| | Sagas | Sagas |
| | Annals | Annals |
| | Biographies | Biographies |
| Instructive | Historical timeline | Historical timeline |
| | Social pyramid | Social pyramid |
| **Output genres** | | |
| Argumentative | Historical argument case | |
| | Historical argument and practice | |
| Expository | Historical paper | |
| | Historical dissertation | |
| | Historical timeline | |
| | Historical research report | |
| Descriptive | Historical summary | Historical summary |
| | Historical essay review | Historical essay review |
| Narrative | Historical case study report | Historical case study report |
| Instructive | Historical Q&A exercise | Historical Q&A exercise |
| | History quiz | History quiz |
| | In-class historic essay | In-class historic essay |

produce complete answers with more content. This technique relieves some of the burden on students because their teachers fill in the gaps that they leave in the conversation, especially when an L2 is involved.

Just as output merits attention, so too does input in the discourse. After examining content in secondary school history textbooks, Oteíza (2009) has found that linguistic resources are at times systematically used to hide agentivity when reporting controversial

historical events like coups d'etat. Hence, input also needs to be considered if students are to have a proper understanding of historical categories and facts. Content and language integrated learning history teachers need to strike a balance between primary sources in their original form, without any linguistic adjustments, and other text sources that intervene in historical narratives with discursive devices that make content understandable (Lorenzo 2008).

In the end, the input/output dichotomy in the genre map refers to the concepts of 'sayability' and 'hearability', the communication potential that students can achieve both in class and outside. In Table 6.1, primary source genres are not regarded as input genres in an L2 in the argumentative and expository categories. As mentioned earlier, arguments in a sermon or an edict use language resources way beyond the interlanguage of average bilingual students. Language grading in the form of adjustments is needed, and once completed, the input is no longer a primary source since a historian or narrator has intervened and altered the original text. As this is a well-known fact in historiography, the rendering of history is considered a discursive creation. Another factor in the genre map shown in Table 6.1 is that some input genres in an L2 can be output genres in an L1. Ideally, students reach a sufficiently high level of proficiency in history and their L1 to offer their own account of the past.

All in all, it is possible to design a full programme that stipulates not only the amount of reading and writing that students should perform but also the textual features that they will encounter and will be expected to understand and express. Additionally, a genre map of history can help content teachers in their role as language specialists. It is history teachers who know the purpose of their genres (worldviews, bills of rights, biographies, etc.) and only need to go one step further to understand their role as language teachers – that their genres are infused with content area language to which they cannot turn a blind eye.

## 6.5 Conclusion

It is history that puts events into perspective. During the US-Chinese Talks in 1970, the late Chinese premier was asked what he thought of the success of the French Revolution, to which he famously reposted: 'Too early to say'.[1] This shows the extent to which the past needs to be considered for a

[1] Further information at: www.scmp.com/article/970657/not-letting-facts-ruin-good-story.

correct assessment of the present. Evincing the complexities of the telling of history and its reliance on the construction of discourse, it appears that the quote was misconstrued, for Zhou Enlai was clearly referring not to the French Revolution and the Paris Commune but to the Paris riots of 1968, only two years earlier. The anecdote highlights how complex the discourse of history is: historical accounts, parallel versions, and the intervention of witnesses in the construction of a timely discourse which captured the ethos of an era – here, Chinese eternalism as opposed to Western presentism.

History is far more than a mere recounting of past events. It is impossible for witnesses to remain entirely neutral in their retellings, as their narrative style and cognitive framework inevitably shape how events are presented and interpreted. Moreover, historical events rarely follow a simple, linear progression; actions and developments overlap in time, creating a complex web of cause and effect. The selection of different time frames further influences how these events are understood. Such complexities have contributed to what is known as the 'linguistic turn' in the discipline of history.

History is thus seen as language in action, where language serves both to express and to interpret the past. This emphasis on the textual nature of history (or *textualism*) brings four critical elements of historical discourse into focus. First is *narration*, or the selection and sharing of information, which often involves the use of tropes (metaphorical language) and reification (the depiction of abstract processes as tangible entities). Second is *voice*, which conveys the narrator's identity, perspective, and degree of impartiality, as well as their knowledge of the events. Third is *time*, or how the chronological structure of events is presented. Fourth is *causation*, or how responsibility and agency are attributed, whether through direct association, intervention, or speculation, and whether these causal links are conveyed explicitly or implicitly through the text.

When history is taught in an L2, the interaction between language and content becomes even more sensitive. The language of history is often characterized by ambiguity, with implicit semantic relationships and statements that contain multiple discourse functions at once. For L2 learners to grasp this sophisticated language, adaptations must go beyond the lexical entrainment usually employed for L1 learners.

Furthermore, in both L1 and L2 contexts, students' writing often lacks the advanced CDFs necessary for the discipline of history unless their learning is enhanced by the consistent presentation of rhetorical models and practices. To address this need, two educational tools have been

developed: a comprehensive chart of integrated descriptors for history across the curriculum (Lorenzo et al. 2024) and a genre map for bilingual history teaching (Lorenzo 2013).

This chapter has provided an overview of the twists and turns of the discourse of history and the demands placed on communicators. Those who wish to defend official historical accounts must control the choice of the language in which history is taught. That L2 communities are barred from dominant discourses is not simply an unfortunate fact but also an effective way of controlling societies. This leads to the issue of the ideology of multilingual societies, whose construction should rest on shared discourses.

CHAPTER 7

# *Critical Aspects of Bilingualism*

## 7.1 Introduction

Bilingual education has been a token of distinction since the advent of the first literate civilizations. Aramean multilingual programmes, the teaching of maths in Greek to Roman patricians, and the command of French of Russian monarchs like Catherine the Great – with such a penchant for the intellectual refinement of the Enlightenment that she became the patroness of Voltaire – are early instances of the embracement of prestigious languages at different times in history (Blom 2004).

Multilingual competence is believed to imply the existence of multiple identities, hence the popular representations of bilinguals as individuals with a dual-faceted nature depending on the language in use. However distinctive are the emotions that a language arouses when speakers relate a particular tongue to their innermost experience – the language used to talk to mothers, to pray, to perform additions and subtractions at elementary school, etc. – multilinguals remain, ultimately, singular individuals.

Both integrative and instrumental motifs drive L2 learning (Gardner 2010). The potential of a literate mind in a practical world has been addressed earlier in this book. With the advanced language functions that literacy provides, it is easier to get on in society. The literate not only have a greater ability to meet social challenges and to make more valuable contributions to informed debate but also – in the words of the philosopher – are better protected against irrationalism and commercial exploitation (Steiner 2003). When advanced literacy is achieved in an L2, the potential value of this competence is enhanced in the form of privileged access to specific services and life experiences.

Because of its value as an asset, biliteracy needs to be considered from the broader perspective of social interaction and order. Biliteracy should be assessed within the broader system of opportunities, means of production, and modes of representation that life in society provides. It is in

this social system that languages show how valuable they are for enhancing social status, an asset which can be unevenly distributed across society (Ginsburgh and Weber 2016; Grin et al. 2013).

For critical linguistics, language is a commodity, a form of capital. Whereas cultural capital has influenced sociological theories in the twentieth century and thereafter, the quantification of language capital has been somewhat neglected. In light of this, the intention of this chapter is to contribute to the conceptualization of language capital by exploring the parallels between multilingual skills and more conventional expressions of wealth: currency units, gross domestic product, personal or family income, socioeconomic status (SES) indexes, and so forth (Roth 2019; Van Hest et al. 2023).

As already stated, the social distribution of language as a commodity can be unequal. Linguists have described languages as a resource for meaning-making, while underscoring that some varieties of meaning are not equally distributed (Halliday et al. 2014). Not all segments of society can produce the advanced genres that govern power relations – mortgage bonds in a notary public's office, balance sheets in markets, and response papers in academia. The unequal distribution of resources is widely accepted as a mere fact of life. However, what is more daunting is that such inequality affects a basic resource as language. If that is the case, any chance of egalitarianism will be nipped in the bud.

Bilingualism in society has sparked many a language debate: if legal advice should be provided in the mother tongue of the litigant; if public signage in a market should be in the many languages of a community, including minority tongues; if primary schooling should include migrant languages; or if public resources should be deployed for the well-being and positive self-image of new language communities. Last but not least is the question of whether bilingual education is convenient for all or should be restricted to the elite. All these bilingual debates have influenced the never-ideal sociolinguistic order (Blommaert 2010).

To address these issues, this chapter combines a description of bilingualism with the fundamental principles of sociological analysis. Language plays a role in class stratification, ingroup and outgroup relations, and social network densities, among other sociological factors, and the specific role of biliteracy needs to be approached from this particular angle.

## 7.2 Language Capital

Social status is partly influenced by wealth, including its creation, distribution, and transformation. Languages play a part in this process as evidenced

by the description of the economics of the multilingual workplace (Grin et al. 2013), the dimension of language as a resource (Ginsburgh and Weber 2016), and the value of language as an instrument for creating personal wealth (Chiswick and Miller 1995). Language skills form an important part of human capital as they meet the necessary conditions to do so: they are embodied in people, productive in the labour market, and acquired after a considerable investment of both time and money. This insight holds for general literacy and multiliteracy alike.

Critical linguistics has described language competence as a means of production. In order to favour the stability of the multi-layered social model, the aim of the ruling classes is to control the different means of production, which include literacy in one or several languages. Therefore, a theory of capital as a factor of production certainly has a bearing on the field of education and languages. Bourdieu (1986) defines capital as any means by which an agent appropriates a product of accumulated labour. Thus, economic capital – wealth, property, and so forth – coexists with three additional forms of capital: cultural capital (knowledge, education, manners, etc.), social capital (circles of influence, including family, friends, and acquaintances), and symbolic capital (legitimacy, the recognition of others, etc.) to which an agent has access. Where language stands with respect to these forms of capital and, moreover, whether language capital can exist as a separable, distinctive form of wealth are two issues that have not attracted much academic attention. However, language can plausibly have a place in a theory that extends social value beyond the material realm (Collin 2014).

Language capital is partly cultural: language knowledge, education, and, of course, manners are social signals which everyone – the fully or restricted literate in society – identifies as cultural traits. In the case of bilingualism, a balanced competence is an evident asset in society, as is the acquisition of biculturalism. This is the ability to get along in environments in which different kinds of culturemes prevail – a practice that expands ego boundaries and favours full participation in two communities.

Language capital is also symbolic. Belongingness to socioeconomic circles can be characterized by language features with little communicative value which are expressed to convey that one is in the know – as in professional jargon – or to express allegiance to a cultural group, that is, solidarity markers. In migrant groups in which the use of the community language diminishes from one generation to the next, the elderly cannot realistically expect the young to speak the vernacular fluently. The language's communicative value is lost, but a simple signal may suffice to

show allegiance to and pride for the original cultural bond. 'Why you no salaam me, eh?' can be a typical reprimand to Pakistani youngsters in just about any British city.[1] The expression is simply an indication of not having severed ties with the former community.

However, language capital also has a more tangible, monetary dimension. The parallels between language skills and income demonstrate that, notwithstanding the symbolic effects of language behaviour, language capital also pays off. Indeed, as with other forms of capital, the language kind is also inherited. Socioeconomic status indexes, the most accepted proxy for social class in institutional surveys, include factors which overtly assess the literacy of family members. In these surveys, the education of parents is a major indicator of future wealth.

Other language factors relating to specific parental behaviour, like the amount of time spent conversing with children and the number of books in a household, often correlate with social status. In fact, low parent–child interaction has been shown to correlate with low lexical availability or, in its most extreme form, 'word poverty'. It has been demonstrated that by the age of five, some children in 'impoverished' language environments have heard 32 million fewer words spoken to them than the average child (Wolf 2008).

Deficient family language input also leaves its mark on productive skills. Three-year-olds in such a situation use less than half of the words already spoken by the average child. In a classical study on early language socialization, dinner talk at early ages made an important contribution to later reading literacy (Snow 1977). As in all complex systems, the starting conditions of infant language are critical for understanding language acquisition later on in life and for predicting literacy deficits that can subsequently lead to drop-off problems (Gee 1990). Language poverty is one of the causes of social exclusion. This signifies that language develops at a different pace during the lifetimes of individuals and should therefore be constantly monitored and gauged.

Needless to say, this is not only an individual problem but also a social one. The results of international surveys have estimated the gains to be had from higher literacy levels: bringing the lowest-performing students in the OECD zone up to at least 400 points on the PISA scale, which corresponds roughly to the lower boundary of the PISA baseline Level 2 of proficiency, could imply an aggregate gain of national income in the

[1] See *East is East*, written by Ayub Khan-Din and directed by Damien O'Donnell in 1999.

order of US$200 trillion during the lifetime of the generation born in 2010 (Cummins 2021).

The ultimate effects of literacy are clear and could be even greater when extending the analysis beyond the pre-intermediate literacy level or Level 2 on the PISA scale. Only individuals performing above this level have the ability to put written texts to personal use; in fact, Level 2 only guarantees literate individuals a basic participation in society and does not include more complex cognitive strategies required in daily life, such as making inferences from texts and employing complex genres, which also lead to long-term economic welfare.

Of course, this rationale for language extends beyond the mother tongue to include all the languages in an individual's repertoire. Language research is increasingly more aware of the fact that 'findings concerning bilingualism and the effects of bilingual education are not necessarily transferrable across social class boundaries' (Politzer 1981:4, in Block 2014). Therefore, bilingualism is a core aspect of cultural capital and has a direct impact on individual status in the socioeconomic world; in other words, the position of individuals on the semi-literacy/literacy/biliteracy continuum determines their linguistic capital (a key part of cultural capital) and has a direct impact on their life possibilities. The application of theoretical models of multilingual fluency and income reveals interesting factors relating to social mobility in contemporary societies. Fluency in the dominant language of a society leads to a rise in income of between 5.6 per cent in Australia and 16.9 per cent in the United States. Similarly, for permanent immigrants, the estimated rate of return based on job income varies from 9 to 18 per cent in Australia and from 17 to 34 per cent in the United States (Chiswick and Miller 1995:280). These figures illustrate aspects of the knowledge of the dominant language of a society, as well as its role in the workforce and in the production of goods and services. Likewise, the covariance of language and capital also relates to the lack of it.

Nevertheless, to study inequality, it is first necessary to quantify the commodity in question, in this case, language. As a system, language possesses quantifiable units in the form of words, structures, and components which govern cohesion mechanisms. It is, therefore, essential to delve into the meaning of inequalities, like, for instance, the 'zero' in zerolingual, the 'semi' in semilingual, and the double negation in non-non language.

To this end, two factors need to be considered. Firstly, language units increase across life in an important number of ways. Above the sentence level, development occurs in the acquisition of advanced genres (Biber 1992), in the transition from narrative to expository texts (Grabe 2002), in

discourse complexity (O'Dowd 2012), and in the functional evolution of academic language (Christie 2012). Focusing on the critical years of adolescence, language gains are achieved on several fronts:

- *Length measures*. Factors like the average number of words per text almost triple, with an increase in the average number of sentences and paragraphs per text, resulting in the production of a more mature discourse, according to readability tests.
- *Syntactic complexity*. There is a clear trend towards nominalization, as can be seen in the evolution of densities: the proportion of nouns in texts increases steadily, whereas the incidence of verbs decreases. Similarly, noun phrases evolve: the average number of descendants per noun phrase increases. These new dependency levels are more often than not occupied by modifiers.
- *Lexical richness*. Signals of lexical richness also appear, with the development of lexical density (the proportion between content and function words), lexical diversity (the number of unique words), and lexical sophistication (the proportion of advanced words).
- *Cohesion level*. Even though basic cohesive mechanisms have already appeared by early adolescence, they continue to improve over the years, especially frequency and accuracy in the expression of subordinate meanings, like causal, logical, and adversative/contrastive connectives.

These provide quantifiable units that can help to exploit language capital and which function as linguistic, cultural, and social production factors. These units can therefore be converted into other predictors of SES – the sociological proxy of social class in contemporary societies.

Likewise, as the interdependence hypothesis has foreseen, advances affect all languages and develop in parallel. This is also the case with conceptual fluency (evidenced by a greater ability to construct texts and to generate ideas), syntactic complexity (with particular attention to noun phrases – more adjectives, more modifiers, and less verbal density – and sentence formation – an increase in subordination, followed by a gradual decrease), lexical accuracy (precision in language choice), and cohesion skills (a command of lexical substitution and ellipsis, plus the reference system for semantic unit overlaps).

This abridged multidimensional construct of advanced language development goes to show that capital increases in a similar way for the two languages and that the continuum does not actually refer to how both develop individually but to how advanced parameters develop in a similar

manner in both. Language capital increases in the mother tongue and also in an L2 if given the chance (Granados et al. 2022).

## 7.3 Language and Class

Germane to the concept of language value is the regular distribution of languages, dialects, functions, and forms in the social layers of all societies. That people speak differently is a sociological truism. Early characterizations have been mostly dualistic, drawing a rather discreet line between the 'haves' and 'have-nots', which immediately poses the question of their nature.

Cultural studies have elaborated on this divide with the concept of heteroglossia: the earnest discourse of the powerful is highbrow, explicit, and business-like. In contrast, popular language is carnivalesque, characterized by a multiplicity of meanings and a peculiar relationship with the object in question (Bahktin 1984, Eagleton 2011:157). This distinction highlights the different stances that social groups take towards language. The popular classes assumedly use different discursive modes which include a humoresque, cynical approach to real life, a form of tongue-in-cheek attitude which defies norms. In Bakhtin's words, 'The serious aspects of class culture are official and authoritarian; they are combined with violence, prohibitions, limitations and always contain an element of fear and intimidation. Laughter on the contrary overcomes fear for it knows no inhibitions, no limitations. Its idiom is never used by violence and authority' (Bahktin 1984:90, in Eagleton 2011). The core idea of heteroglossia is that language is not an abstract system but rather takes the shape of its users, determined as they are by their social constraints.

More contemporary approaches to language and class are similarly dualistic. In a classic sociological study of literacy, language distribution is described in terms of 'us versus them', where 'us' represents the popular classes who allegedly display a different language behaviour (Hoggart 1957). Although the approach is rather blunt – there is no serious corpus study or data collection technique and it is impressionistic throughout – this description of social language differences involves many levels of the language system. Popular classes shun complex structures and use basic vocabulary, which includes vulgarisms or words that are inappropriate in any social circle except their own. Paradigmatically, working-class men freely use four-letter words for natural functions, which implies that they are not overly bothered about the kind of impression that their talk makes beyond their inner social circle. The lower classes employ simple words

and structures to express different discourse functions, have difficulty in answering abstract or general questions, and distrust abstractions. Instead, they have a fascination with individual behaviour: 'Working class people, with their roots so strongly in the homely and personal and local, and with little training in more general thinking, are even less likely to be able to bring the two worlds into focus' (Hoggart 1957:105). This very controversial opinion expresses a deficit that the author seems to take for granted.

Furthermore, these classes would have no sense of the past or the future, a disregard for time that could be down to their apparent inability to take a critical stance because of their lack of awareness of historical processes and the impact that the past has on them. This analysis ultimately endorses reception theory, that is, the way in which the media cater to popular culture with cognitively undemanding products like newspapers to attract and maintain the attention of audiences, so they do not have 'to make an effort to think about the weight of a word, or puzzle over a nuance or follow even a moderately complex sentence structure' (Hoggart 1957:200).

This analysis is so rudimentary that it hardly meets the requisites of serious descriptive linguistics; however, the implications for critical language studies in the current age of mass information and language resources for producing fake news should not make us lose sight of the potential of Hoggart's approach. Nonetheless, the most challenging assumption of this line of thought is that language is socially determined, namely, that divisive language behaviour is the expression of social forces whose aim is to establish or guarantee a certain degree of social order and that language distribution is necessary for safeguarding the social ecology. In the very words of the author, it is the result of contemporary forces that produce 'directionless and tamed helots of a machine-minding class' (Hoggart 1957:250).

The social stratification of language goes beyond the simple distinction between two groups (us vs. them). Classical sociolinguistics distinguishes up to four social groups which consistently display varied forms of speech reflecting social processes like upward or downward social mobility, language attrition, and group identification, among other language phenomena. The lower, working, lower-middle, and upper-middle classes differ in their production of language forms, which serve as markers of subgroups and indicate social awareness. The direction of language change can vary according to the rung of the social ladder on which it occurs. If it occurs in lower social strata, it is understood as a change from below, whereas if it occurs in upper social strata, there is a huge awareness of linguistic innovation, and it is called change from above. Whether they be customers requesting information from assistants in one of New York's top

department stores or people from different walks of life – fishermen or holidaymakers – in Martha's Vineyard discussing the weather, variation between social groups is consistent (Labov 2003).

Traditional sociolinguistics originally used lower-order language elements to characterize the social distribution of language – mostly allophones. Nevertheless, the field has since progressed towards more reasonable social aspects including the economic sort, the analysis now focusing on higher-order language skills that better reflect the true value of language as a resource for efficient communication in linguistically complex social circles.

In the analysis of the distribution of higher-order language skills, the issue is not how the upper classes hallow symbolic resources and particular ways of speaking that are socially prestigious, like, for example, elegant pronunciation and the strategic choice of highbrow words and neologisms. Rather, the distribution affects actual resources that can be measured in size (vocabulary), variety (discourse functions), or tongues (languages). These higher-order skills are essential for communicating in ever more complex scenarios in which social networks are increasingly more sophisticated, distant, multilingual, and technologically mediated.

That language distribution is sensitive to class is proven by the fact that language aptitude tests show sharper differences in scores across social layers than those tests which do not use language to measure other cognitive traits. According to Good (2009), when fluid intelligence is measured through non-verbal tests to gauge abstract reasoning, individuals from different social backgrounds obtain similar scores. In his study, however, the scores obtained in a set of language proficiency tests were higher for the sample of privileged students.

Indeed, language proficiency tests have often indicated competence gaps across social classes which were not confirmed in other more general aptitude tests. This supports the main tenet of critical educational linguistics: that the lack of access to formal language (also known as 'elaborated code') puts the socially inferior at a disadvantage when it comes to coping in situations in which the market forces operate, as in professional settings. This assumption is substantiated by further examples, like the claim that as lower-class students are less acquainted with the processing resources for formal language production, their speech features fewer complex verb tenses, passive voice instances, and uncommon adverbs and adjectives. This implies a less autonomous and more dependent style which requires the confirmation of other speakers, a phenomenon known as 'sympathetic circularity'. Their speech is dotted with colloquial comprehension checks like 'You know?' and 'See what I mean?', a less articulate discourse that

places the communication burden firmly on the shoulders of the hearer (see Bernstein 2000 and his review in subsequent studies, like Good 2009).

Still to this day, there is not a full map of sociolects, in the sense of a consistent description of form and function distribution across social classes at different moments during the critical stages of language development, with a few partial exceptions including several studies of childhood (Christie 2012) and mid-adolescence (Uccelli 2023). This shortcoming has been recognized by those performing the first studies on sociolinguistics, who clearly admit that rules or detailed descriptions of the operations of such codes have yet to be established (Bolander and Watts 2009).

These social differences occur in the discursive practice of children from different backgrounds and with varying access to meaningful conversation. The families of high- and low-achieving students differ in at least two aspects. The mothers of high-achieving students address matters with their children in greater depth and at greater length, with these students relating new issues with matters that have already been covered. In contrast, low-achieving students do not ask their mothers question as often. To compensate for a limited vocabulary, children need regular opportunities for meaning negotiation and the use of circumlocutions in everyday speech. Language development rests on reading, speaking, and listening in close circles which many economically disadvantaged families often fail to provide.

Critical sociolinguistics has attempted to paint a full picture of literacy distribution across social classes. Even though this linguistic description is far from complete, differences can be seen across social layers in the number of referential noun phrases, moral evaluative vocabulary, and reliance on textual features (Gee 1990). These differences are used to classify the discursive practices of social and ethnic groups, which in a way anticipates the concept of *racial literacies*. Allegedly different communication styles can be glimpsed between (a) an upper-class solipsism, subjectivism, and individual-moral certainty; (b) a Euro-American working-class/middle-class explicitness, text-loyalty, and reason-giving; and (c) an African American working-class implicitness, group – rather than text – focus, and social-moral emphasis (Gee 1990). The author also draws parallels between his classifications and the ability to cope with easy and moderately difficult literacy experiences, like matching grocery store coupons to a shopping list and locating a piece of information in a newspaper article of average length.

As indicated by the results of Gee's (1990) research, the difference in scores was more acute as tasks got harder, like when test takers were asked to locate and match information from a page of text, to write a letter stating that an error had been made in a department store bill, or to extract

a theme from a poem containing allusions to a familiar subject, like, for example, war. Whereas 78 per cent of whites could perform the task, only 41.4 per cent of Hispanics and 39.9 per cent of African Americans managed to do so. Seen from a different angle, only 41.4 per cent of those who had not finished high school and 23.4 per cent of those who had not gone to high school were able to complete the task.

Gee (1990) describes a complex model with multiple variables, including ethnicity, class, and SES, which have been widely researched, while noting the importance of the covariance between individual variables in the study of social literacy. Ethnicity, with its emphasis on the common history of ethnic groups, the awareness of belonging, and a similar social positioning favoured by explicit or implicit prejudices, leaves a clear mark on literacy. Along with class, race is a core aspect of language ideology, for which reason discourses that shape language proficiency should be examined from the perspective of the racialization of groups, especially in institutions like schools (Zimmerman 2019:40).

Notwithstanding this, class is hardly ever a variable in educational studies with a social purpose, among other reasons because it is hard to operationalize. Although it has often been instrumental in the description of language variation in caste systems in sociolinguistic studies, the Western world lacks a proper conceptualization of class, often blurred by factors like family income or household commodities, which in many cases correlates with social status. This makes social background a less visible construct in analyses and, as a result, research questions about the effects of social starting conditions on social change remain unanswered. A convenient proxy for class, ever-present in educational research, is the SES, which has a fairly strong influence on literacy and biliteracy development (Block 2014; Butler and Le 2018).

The distribution of language is yet another feature that has proven to be consistent across social layers. Additive bilingualism is, of course, represented unevenly across the many layers of society, an issue to which Section 7.4 is devoted.

## 7.4 Critical Bilingualism

An account of bilingualism from the perspective of ideology needs to consider several premises. Firstly, bilingual societies are underpinned by a fabric of power relations which determine the ideology of bilingualism, partly conceptualized in solid data-driven theories, partly sustained in folk theories that are consistent with the social hegemony of the time. Likewise, the social

is economic, so bilingualism needs to be considered in relation to the forces of capital constituting the present cultural model, more precisely in relation to language capital distribution and intergenerational language skills. These precepts form the basis of the ideological framework described later.

### 7.4.1 Linguistic Deficit Theories

With a solid grounding in economic research, deficit theories are often put forward to understand advanced language development, despite the earnest resistance of some schools of thought, uncomfortable with the idea of linguistically deprived individuals. Deficit theories came under fire because of their apparent determinism, which in the opinion of many portrayed the less linguistically able as lacking the quintessential human faculty of language. Deficit theories fell out of grace, especially when class was combined with race and related to poor literacy skills (Adair et al. 2017; Johnson et al. 2020).

For all that, deficit theories emphasize that language resources are scarce in lower social layers, which leads to general learning deficits in students with a low SES. In several European countries, deficit theories prompted empirical studies with the aim of identifying those more socially sensitive language features which occurred less often in the speech of the disadvantaged. They subsequently attempted to relate the lack of language forms to potential meanings that less able students were unable to produce, namely, their 'language barrier' (*Sprachbarriere*) (Ammon 1973; Oeverman 1973).

German critical theory called this approach 'emancipation linguistics', while placing the emphasis on the ability of education to deal with original language deficits caused by social differences. In the closing decades of the twentieth century, this resulted in compensatory education and the passing of legislation that inspired language across the curriculum (on *Bildungsbericht '70*, see García Marcos 2020). Such deficits affect the subject matter of disciplines like maths and history, something that is particularly clear in the case of migrants whose mother tongue differs from that of the medium of instruction.

From a language theory perspective, deficit theories encompass language forms and functions, as well as social outcomes. Bernstein, a trained sociologist, proposed a general theory of language that depicted it as a core factor of all social functions: as a means of communication; as a means of action; as an imaginary experience; as a tool for developing consciousness; as a means of operational thought; as a means of social attribution; and as social action per se (Ammon 1973:20–22).

This view was influential in the creation of functional linguistics and the formulation of 'meaning potential' (Halliday and Hasan 1976:30). Learning a language is tantamount to developing the skills to produce the meanings that describe the 'reality' of a culture and circumscribe what can be signified. The underlying assumption is that the ability to express oneself meaningfully in a language reinforces one's social status. This has led to the creation of movements, like Reading to Learn (Rose and Martin 2012) in Sweden, Australia, and elsewhere, which are striving to enhance the ability to express meaning across all social layers and to raise awareness of the significance of grammatical choices for advanced literacy, often with multilingual populations.

Another aspect of deficit theories is how they understand literacy development. Language competence, as with all resources, can vary over time, sometimes throughout the lifetime of an individual or from generation to generation. International surveys have shown that, in some countries, in early puberty, when students are expected to read narrative texts, linguistic competence levels are usually satisfactory. But later on, when they have to cope with expository texts, deficits begin to emerge. In adulthood, when they are tested with more linguistically demanding argumentative texts, deficits become more acute.

In short, as individuals grow older, they are less prepared to perform adequately in all the social circles in which literacy plays a role (on PIRLS tests at the ages of twelve and fifteen, and PIACC tests at the age of twenty-seven, see OECD 2021a, 2021b). Likewise, intergenerational deficits seem to appear. The literacy scores of younger generations are decreasing with respect to their parents, even in countries with a solid tradition of literacy and benchmark education systems such as the United Kingdom, as measured by reading comprehension standards (Moss 2009). What surveys indicate, therefore, is a potential, if not firmly rooted, ontogenetic, and phylogenetic deficit.

In multilingual environments or contexts characterized by a high language diversity, unequal linguistic competence involves all the languages of an individual's repertoire, regardless of whether this is owing to low L2 levels in advanced education systems or because of the meagre results in migrant integration (for a set of studies covering several European education systems, see Lorenzo and Meyer 2017, 2018). It often takes time for the so-called Refugee, Asylum Seeking and Migrant learners (RASM learners) to gain a command of the mainstream language, meaning that they are taught in a situation of language submersion. Albeit not inclined to hyperbole, the European Commission itself refers to literacy deficits as

'nothing less than a potential catastrophe for European societies' (European Commission 2011:5).

All in all, there is a full awareness of the linguistic deficit/educational deficit/social deficit continuum, which sociometrics has described in detail. At an educational level, language factors (proficiency in a specific language and overall proficiency in reading comprehension) have a critical impact on maths content learning (Prediger et al. 2018). That educational deficits lead to the social sort is a dictum in research. In fact, the SES and cultural index of students are the most important determinants of academic performance (Anghel et al. 2016; Block 2014).

### 7.4.2 *Unequal Distribution of Bilingual Resources*

Language variation is inherent to language use. The actual production of structures, sounds, and words of individuals varies and has a clear symbolic value in society in that these fall into the standard or non-standard category. Even if the communicative value of the difference is null, the personal production of a phoneme, word, or structure function is class sensitive. In classical sociolinguistics, those linguistic variables that acquire social significance can be divided into three categories: stereotypes, markers, and indicators. From a critical language perspective, the systematic differences in the speech of the highest social classes take the shape of a hegemonic grammar that is both distinctive and prestigious. However, the reference grammar characterizing social status can be altered if new social classes come to the fore, thus giving rise to a new normative grammar. It follows from this that language models do not transform societies, but social change brings about considerable transformations in language systems (Ives 2004).

Social bilingualism has always been a mark of distinction. Its benefits are not only symbolic but also instrumental in contemporary societies where, because of globalization, bilingual skills provide immediate access to hitherto exclusive social circles (Athanasiou et al. 2016:214).

This raises the question of how bilingual resources are distributed in contemporary societies. Additive bilingualism, when the L2 is a global lingua franca held in high esteem, as in the case at hand, does not only confer status but is also a useful resource. Educational bilingualism studies have revealed a 'staircase effect' in schools whereby students with a higher SES consistently display better bilingual competence levels than those with a lower SES (Lorenzo et al. 2021). This is consistent with the point that if the school population is divided into four socioeconomic segments (SES 1–4, from low to high SES), as is usually the case in the research literature,

students with an SES 1 obtain the lowest scores in proficiency tests; those with an SES 4, the highest scores; and those in the middle with an SES 2 or SES 3, average scores. In other words, school performance tends to reproduce tiered social structures in a very noticeable manner. The results give credence to the assertion in the critical sociology of language that language structures mirror social structures and point to the social origin of language capital distribution. Furthermore, disciplinary courses have the same distribution, which points to a steady correlation between language competence and content learning – as in history or maths.

Another important aspect is that bilingual education is a limited and costly resource. In monoglot industrialized areas of the Western world, there is a language market for the promotion of bilingualism among the upper classes. In some regions, a large investment is made in shadow education in languages for students with a high SES. One way or another, this results in a sort of segregation that excludes many from multilingual education and, consequently, in the unequal distribution of language resources (for the concentration of the private investment of families in urban areas of Europe and language education in Madrid, see Granados and Lorenzo 2022).

There also seems to be a certain Matthew effect.[2] The application of this economic principle with biblical connotations to non-bilingual education – the mainstream model – would suggest that students with more language capital (SES 4) will acquire even more, whereas those with less (SES 1) will even be deprived of the little that they have. This would certainly be the case not only because the privileged have access to bilingual education and therefore greater skills but also because interaction usually takes place among the most articulate, thus producing an exponential increase in the language resources of those who originally performed better. Additionally, non-bilingual groups run the risk of institutional or self-imposed segregation, with restricted access to exclusive models, lower educational expectations, and inferior input in the medium of instruction in which advanced functions appear less often (Llinares and Evnitskaya 2021; Lorenzo et al. 2021).

### *7.4.3 Cultural Reproduction through Bilingual Schooling*

Another issue relating to language distribution is that of the intergenerational dynamics of language competence. From the advent of the printing press to the contemporary mandate for universal education, the popular

[2] 'For whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them', Matthew 25:29.

classes have gradually become more literate. This same goal has since been established for multilingual competence under the principle of 'languages are for all' (European Commission 2002).

According to traditional sociolinguistics, the acquisition of prestigious phoneme variants is less predictable in the middle classes. The lowest and the highest social classes – equivalent to Types 1 and 4 in Labovian sociolinguistics – are more likely to replicate the production of their equals, whereas it is more probable that those in the middle will try to replicate the language of their higher SES peers, even to the point of outstripping them. As bilingualism is doubtless a clear token of distinction, this pattern may be reproduced, with the middle classes relentlessly pursuing the goal of bilingualism and with the lower classes continuing to be less choosy in this respect.

General sociological analyses could cast some light on cultural reproduction in terms of bilingual competence. For instance, the 'Great Gatsby Curve' illustrates the connection between the concentration of wealth in one generation and the ability of those in the next to improve their lot in life. It offers economic insights into upward social mobility based on the story of the parvenu who gives his name to F. Scott Fitzgerald's famous novel.

Ultimately a method for gauging social mobility in terms of the distribution of resources, the Great Gatsby Curve holds that in unequal societies the children of wealthy parents already have much better opportunities for succeeding in life than children from poor families, affecting access to services (healthcare) and resources (income) and the acquisition of skills (in the case at hand, the language kind). As to bilingual education, no such observation has been made, even though the general perception is that elite bilingualism has never been under threat and that bilingual models come up against much institutional resistance before being implemented across the board (Benabou 2017).

Equality studies indicate that the role of education, especially the language kind, is critical in all facets of social life. Language capital fluctuates over the years and formal language education is the springboard for development and consolidation. Teacher training, attention to the self-worth dynamics of students, and cohesion in planning and implementation ultimately lead to the reduction of socioeconomic differences as determinants of competence.

## 7.5 Case Studies

Bilingual case studies, or real-life examples of multilingual production, reveal the determining factors of language behaviour in social groups, as well as shedding new light on ideological and historical trends. They have

often been used for enquiring into bilingualism, including aspects like the full L2 proficiency of female adult immigrants for their social integration (Bell 2007), attrition in L1 competence in adulthood (Grosjean 2019), the emotional expression of bilinguals (Pavlenko 2009), neurological lateralization for bilingual acquisition in twins (Obler and Gjerlow 1999), and the order of siblings in multilingual families as a predictor for language dominance (Caldas 2008). Among other aspects, these studies have collected and analysed data on individuals, before arriving at a number of conclusions.

The following case studies do not address L2 acquisition, but the sociological aspects of individual bilingual stories in which language choice is used as a cue for social stance-taking.

### *7.5.1 A Touch of Aristocratic Bilingualism for Professional Distinction: Luis Medina, the Commodity Broker, or Luis, the 'Chicken Bloke'*

The aristocracy has often pursued multicultural competence as an expression of social *savoir-faire* and *savoir-être*. Especially in the eighteenth century, avid for foreign cultural experiences, the scions of the British aristocracy embarked on the Grand Tour for the purpose of exploring different European destinations and broadening their horizons. Today, with the decline of the aristocracy, the upper classes have embraced bilingualism as the hallmark of a refined education, which they pursue at foreign boarding schools meeting proper language standards.

In Spain, Luis Medina fits that description to a T. Born into the House of Medinaceli, he is the second son of the former Duke of Medinaceli, an ancient saga of noblemen going back to the eleventh century, when the first of the dynasty was granted large estates on the condition that he relinquish all claims to the Crown of Castile. Ten centuries later, Medina, the second in line to the title, received an elitist education in Jesuit schools and colleges in Spain and the United States, with weekend breaks in Central Manhattan, in his late adolescence.

The House of Medinaceli has had a checkered past. The behaviour of Medina's most recent forebears was socially and morally inappropriate, if not criminal. In the Spanish Civil War, his grandfather came out in support of the rebels, forming part of the Civil Guard, one of the forces responsible for the brutal repression in the rearguard. As for his father, he was tried and sentenced for the kidnapping and corruption of minors. More civilized than the former Dukes of Medinaceli, Medina managed to carve out a career for himself in international commerce, with little more

than his command of English, his very close connections with the jet set, and his good looks.

In 2020, at the height of the COVID-19 pandemic, Medina was contacted by an associate to use his international connections to source much-needed basic medical supplies to combat the lethal virus. Facemasks were in very short supply at hospitals for the protection of health workers, some of whom were being infected by the virus and also laying down their lives in a memorable instance of public service. Amidst the public uproar over their improvisation and the lack of supplies in stock, both the central and regional administrations were prepared to pay through the nose for them.

Despite the fact that it was his first foray into the healthcare industry, Medina managed to contact a Malayan supplier and broker a deal for Madrid City Council. When it was subsequently revealed that he and his associate had charged a commission that was totally disproportionate to the actual cost of the supplies which, moreover, did not meet the standards for the prevention and control of the disease, the scandal broke. In sum, healthcare workers had not only gone about their work with inadequate protection but had also been put at risk.

The political and public scandal that ensued hit the national headlines in highbrow newspapers and tabloids,[3] alike, after Luis Medina had been charged with aggravated fraud, money laundering, forgery, and last but not least asset stripping, for when the judge set bail, the accused had already emptied his bank accounts, safely depositing the funds in some or other offshore tax haven. To make matters worse, he and his associate had used their huge commission to go on a shopping spree, including top-end sports cars and watches, plus a luxury flat and yacht, among other things.

This episode is also of interest as a case study of the exceptional social dividends of bilingual competence. Firstly, it shows how a person with no previous experience can arrange international commercial transactions based on his fluent English alone. Medina acted locally but thought globally, as evidenced by the fact that he invested a sizable part of his earnings in international stocks, specifically those of Phoenix Group Holdings and the Global Dividend Fund. Such is the real scope of academic and professional bilingualism in the financial world.

Also noteworthy is Medina's construction of a professional identity based on his functional bilingual competence. When questioned about his profession during his trial in Spain, he shifted to English and declared

[3] Further information at: www.eldiario.es/politica/video-luis-medina-presenta-juez-broker-pollo-carne-cerdo_1_8941900.html.

that he was a 'commodity broker'. His codeswitching certainly made an impression on all present including his honour, who first hesitated, not really understanding the concept, before requesting a clarification. Shifting to an L2 came as no surprise for the people in court, for the private correspondence between Medina and his associate in the form of WhatsApp messages revealed a consistent strategic use of English, mostly to cause an effect, including standalone interjections, qualifiers, and as before technical jargon which acted like borrowings.

Medina's translanguaging had a dual effect on the judge. On the one hand, it concealed his real activity, namely, that of *comisionista* ('commission agent'), with its unflattering connotations; on the other, it made such an activity, perhaps below a nobleman, sound more glamorous. Furthermore, the identity that he was trying to construct in English contrasted sharply with the opinion that the 'plebs', with whom he usually had dealings, had of him. In those uncultivated circles, he was known by the very vulgar nickname of *Luis, el de los Pollos* (Luis, the 'Chicken Bloke'), the poultry trade being his only known commercial activity hitherto. Both sides, the aristocratic commodity broker and the 'Chicken Bloke', painted a Janus-like picture that reflects the real symbolic and functional uses of professional bilingual competence.

### *7.5.2 Shifting Languages to Shift Allegiances: Bilingual Paulina Degtiarova in the Russian–Ukrainian War Zone*

For bilinguals, language choice in a situation of social strife between language communities is an act of allegiance. This behaviour is at one with the traditional representation of a tongue as the cornerstone of a nation or state. In fact, a sense of belonging to a particular ingroup can be determined by more subtle means than language choice and can involve almost all variants at any language level, as minimal and meaningless as it may seem: the choice of a word, the use of a verb tense, a particular syntactic structure, or even an allophone.

Ingroup markers based on allophones are related to the biblical concept of shibboleth (albeit appearing only once in the Bible, in Judges 12:6). According to the passage, the pronunciation of the Hebrew word 'shibboleth' was used to determine tribal affiliation. Over time, the term has taken on a sociological meaning. Shibboleths are documented in civil war zones where the linguistic differences between the warring parties were limited to different realizations of the same phoneme. In Rwanda, the differences between Hutus and Tutsis, and in the Dominican Republic between

Dominicans and Haitians, were reduced to the phonological distinction of rolling the /r/. This was the factor that indicated to which community a person belonged. In the Dominican Republic, people's pronunciation was tested with particular Spanish words, like *perejil*, which gave its name to the *Parsley Massacre* (1937) ordered by Trujillo (Harvey 2019).

When multilingual populations become embroiled in internal conflicts, language choice is not neutral. Workers in the Basque Country reportedly used to greet one another with a whoop, shunning the use of both Spanish and Basque greetings to avoid confrontation at a time when secessionists were pursued and terror attacks were rampant. Although reactions are rather more subdued in academic multilingualism, as identity is partly influenced by scholarship or professional profile, there are well-known cases of people abandoning their mother tongue, as was the case with Jewish writers during the Second World War, who used German as their L1 but felt much resentment towards the language because of the Holocaust (Klemperer 2013).

This is also the case of Ukrainian-born Paulina Degtiarova, a student of Spanish literature at the University of Odessa (Ukraine) who, in the midst of the conflict with Russia, expressed concerns about the language that she should use, as Russian was her mother tongue, a case study which shows the hazy boundaries of bilingual personalities.

The language landscape in Ukraine is complex. The mother tongue of 67 per cent of the population is Ukrainian, as opposed to the 30 per cent whose L1 is Russian. Russian however has traditionally been regarded as a language of prestige, spoken in academic circles: the language of the *Russkiy Mir* (the Russian World), which traditionally gave a sense of unity to the former Soviet Republics using this language for cultural expression and for performing the sacraments and rites of the Orthodox Church. As a result, even the staunchest defenders of Ukrainian sovereignty, like President Zelenski himself, have struggled with Ukrainian, when Russian is their mother tongue. The new Ukrainian constitution has made a point of depriving Russian of its halo of power and influence and reversing its status, making Ukrainian the language of instruction, the media, and legal documents.

With the outbreak of the war, Paulina was one of the students who decided not to speak Russian again, despite being her L1.[4] She declared that she had pondered long and hard on this decision and that the war had helped her to resolve to use Ukrainian in all facets of life to contribute

[4] Further information at: https://elpais.com/internacional/2022-07-03/las-bombas-de-putin-disparan-el-uso-del-idioma-ucranio-el-ruso-es-mi-lengua-materna-pero-no-pienso-hablarlo-mas.html.

to the national effort. She admits that speaking Ukrainian is a struggle at times and that she has difficulties communicating with her parents, both of whom are Russophones. Her decision recalls that of bilingual writers who expressed contempt for their mother tongue, abandoning it for a new medium of expression from which they, as individuals, could always keep a distance so as to avoid any emotional attachment to it.

### *7.5.3 Spanish Heritage Speaker Barred from Academia: Tiffany Martinez and Racial Literacy*

Spanish is a resilient language in the multilingual United States. Vast expanses of the country, including California, Texas, New Mexico, and Arizona, were Spanish-speaking when they were annexed by the Union by virtue of the Treaty of Guadalupe Hidalgo in 1848. Together with these naturalized citizens, neighbouring countries have provided the United States with a convenient source of labour, in a succession of Spanish-speaking migration waves, over the past two centuries. The Latino minority is gathering momentum as the ethnic group second only to the hegemonic whites. Less bright are the prospects of Spanish as a language, that is, its positioning in a country where it has often been frowned upon for fear of converting the United States into a 'polyglot boarding house'.

Of course, Spanish is used at a community level in the shape of conversational routines, for intergenerational family communication, and for cultural transmission, with a total of 60 million speakers. In addition, Spanish has since gained a foothold in the media and commerce, fields in which the language is seen in a positive light because of its market value. However, the spread of Spanish in the country has encountered resistance in academia. It is certainly used in immersion models in infant and primary school but not so in middle or high school when academic language is really developed. Consequently, Latinos gradually abandon Spanish as they progress through school to the point that students with a college degree speak the language less than highschoolers and these less than those with elementary education. Latinos are therefore expected to pay the price of 'Englishization' and turn their backs on bilingualism, which they mostly do and very often gladly (Potowski 2018b).

A much more sensitive issue is whether – as is apparently the case – overt or covert language policies are implemented for the purpose of social exclusion. Latino movements have often claimed that there are discriminatory language practices, such as school segregation in low-quality bilingual programmes or poor-quality teaching provision favouring school failure

among Spanish-speaking students (Pew Institute Research s.f.; Salgado-Robles and Lorenzo 2025). The case study at hand exemplifies more subtle manoeuvres relating to the language, accent, and/or racial features of Latinos (Zimmerman 2019).

In October 2016, the sociology student Tiffany Martinez submitted a semester paper – a literature review – at Suffolk University in Boston (United States). The paper was returned to her with corrections, which the professor also voiced in public in the middle of the class. The revision notes assessed not so much the content or the ability to produce insightful comments on complex sociological theories but also the young author's academic language. More precisely, what the professor made clear was her deep-seated belief that academic language was far beyond the capabilities of Tiffany, as with all Latino students. The comments in the margins expressed her view that 'this is not your language'. Furthermore, she circled the word 'hence' in the text and added 'this is not your word'. More poignantly, she went to say, 'Please go back and indicate from where you cut and pasted this', in a blatant accusation of plagiarism.

The student felt outraged and victimized and voiced her feelings in a personal blog post duly entitled 'Academia, love me back'. It was not long before it caught the attention of the community and other scholarly circles. Here, she expressed,

> As a first-generation college student, first generation U.S. citizen, and aspiring professor I have confronted a number of obstacles in order to earn every accomplishment and award I have accumulated. In the face of struggle, I have persevered and continuously produced content that is of high calibre. And further: For years I have spent ample time dissecting the internalized racism that causes me to doubt myself, my abilities, and my aspirations (Martínez 2016).

It is noteworthy that the teacher was not playing the role of a native language competence examiner or a curator of language purity since the essay had no academic flaws; rather, it was the fact that the language style way surpassed the low expectations that she had for students with Tiffany's ethnic background. It is therefore an excellent example of racial literacy in which prestige sociolects of an academic nature are not expected from a cultural group, such as Latinos (Zimmerman 2019).

All this also begs the question of how the professor established the limits of the appropriateness of language use for Latinos; in other words, her expectations of a migrant's language level and the discourse functions that were supposedly beyond her grasp. As indicated by the teacher, the use of the word 'hence' surpassed those limits. 'Hence' is a transitional adverb

that indicates that a conclusion has been reached. It is closely related to academic functions like stance-taking, the epitome of rational thinking, and advanced understanding based on proven information. Her corrections of Tiffany's essay paper illustrate her reaction against the acquisition of advanced skills by bilingual minority groups, even when expressed in the dominant language, an exemplary case of the type of microaggressions suffered by heritage speakers far too often.

This simple anecdote highlights the social forces restricting the presence of the mother tongue of heritage speakers, in this case Latinos, on a daily basis, thus undermining their bilingualism and relegating their L1 to the close family circle. As has been made clear, these speakers are the target of constant put-downs relating to their language, in combination with other markers of identity such as their ethnicity, race, or immigrant status. These aggressions have been systematically linked to lower self-esteem, perceived stress, depression, and anxiety detected in a number of social groups (Lui and Quezada 2019). Moreover, it is also possible that conservative forces in academia aim to hamper their social promotion, drawing a linguistic line that they are not expected to cross in either language. Considered as academic language 'trespassers', these bilinguals have to make double the effort to get on in life.

## 7.6 Conclusion

Bourdieu (1986) defines capital as any means by which an agent appropriates a product of accumulated labour. Thus, economic capital – wealth, property, and so forth – coexists with three additional forms of capital: cultural capital (knowledge, education, manners, etc.), social capital (circles of influence, including family, friends, and acquaintances), and symbolic capital (legitimacy, the recognition of others, etc.) to which an agent has access.

Language is therefore a commodity, a form of capital (both cultural and symbolic). As such, its social distribution can be unequal. From a critical linguistics perspective, the ruling classes seek to control the different means of production, which include literacy in one or several languages. Not all segments of society are granted the ability to produce the advanced genres that govern power relations – mortgage bonds in a notary public's office, balance sheets in markets, and response papers in academia.

Language capital also has a more tangible, monetary dimension. Socioeconomic status indexes, the most accepted proxy for social class in institutional surveys, include factors which overtly assess the literacy of

family members. With a solid grounding in economic research, deficit theories emphasize that language resources are scarce in lower social layers, which leads to general learning deficits in students with a low SES. This linguistic deficit/educational deficit/social deficit continuum has been well documented in sociometric research.

This raises the question of how bilingual resources are distributed in contemporary societies. In this regard, two principles seem to prevail. First, the *Matthew effect* posits that students with greater language capital tend to accumulate even more, while those with less are further deprived, since interactions generally favour the most articulate, leading to an exponential growth in language resources for high-performing individuals. Second, the *Great Gatsby Curve*, which posits that in unequal societies the children of wealthy parents already have much better opportunities for succeeding in life than children from poor families. This would explain why bilingual models come up against much institutional resistance before being implemented across the board.

To illustrate these ideas, three case studies of bilingualism have been analysed. These examples range from an aristocrat who leveraged biliteracy to become an international broker, to a Russian-speaking Ukrainian who abandoned her native language to demonstrate allegiance, to a Spanish heritage speaker in the United States whose English command retains elite distrust. Each case highlights the critical role of biliteracy in shaping social power dynamics, revealing how language profoundly influences relationships of power and status.

Critical bilingualism brings to light issues of language equality and distribution as resources for accessing otherwise inaccessible social networks. The real question in this regard is the way in which modern society regards language as a resource in the era of globalization. The question remains if bilingualism qualifies as a form of 'specific egalitarianism', namely, as just one of many scarce commodities which should be equally distributed. In other words, the question is whether languages are really for all, as with other basic civil rights, like free movement and access to work, in advanced societies (on specific egalitarianism, see Atkinson 2018:36).

Research on capital distribution in the contemporary world has made it clear that the distribution of knowledge and skills is central to increasing productivity as a whole and reducing inequalities. This main force of convergence – knowledge diffusion – is only partly natural and spontaneous: it depends largely on the education policies implemented, on the access to appropriate training and qualifications and on the institutions created in this field (Piketty 2014:40–42). Convergence may take place in educational

bilingualism by means of quality schooling and language-sensitive actions across the curriculum.

Finally, bilingual policies need to be interpreted in the realm of ideology, hence serving legitimate political goals, as the result of justifiable political action. Bilingualism for all has come under fire from the media. Editorials and news items have drawn attention to the alleged perils of extending bilingual networks. These language debates have been formulated on the basis of cognitive (L2 immersion can produce delays in writing, for instance) or educational arguments (bilingual programmes can lead to school failure). However, these arguments only refer to the spread of bilingual networks so as to encompass ample school populations, for bilingualism is taken for granted in elite schooling. This doublespeak calls for the serious reflection of linguists and social scientists who, in the name of progressive language policies, often undermine the interests of the less affluent.

CHAPTER 8

# *Conclusion and Final Thoughts*

Language, often regarded as a mental organ in modern linguistics, evolves naturally within individuals over the course of their lives. Given that it develops over time, its acquisition is not clear-cut, despite the inadequate labels of 'haves' and 'have-nots' employed to distinguish fluent from non-fluent speakers in school systems. Rather, language develops gradually in parallel with cognitive maturation. Similarly, bilingual acquisition is not a binary process either, for proficiency in an L2 or L3 is the result of self-expression in communicative situations.

This book has focused on one particular aspect of multilingualism: academic communication. All acts of natural communication are ordered to some extent and academic language is no exception, for it is characterized by an orderly structure with regular patterns. It is possible to grammaticalize history, mathematics, and any other school subject, thereby facilitating the acquisition of their knowledge structures through the identification of their formal regularities and structural consistencies. An awareness of such patterns helps to gain proficiency in both an L1 and an L2. The acquisition of academic language is expedited by focusing on the syntactic structures, lexis, and discourse patterns that the disciplines impose on grammar. Fluency is, therefore, impossible without consistent and repeated practice.

Education has been under the impression that disciplines are learned independently of the language used to teach them. Although the importance of language competence in content learning is clear, research has yet to establish exact correspondences between language and content, which are often called the 'language muscles', for maths, history, or science. According to international standards, a major cause of poor academic performance in any discipline is the incomplete development of forms and structures, words and functions. Some efforts are now being made to describe this competence at different levels and to write descriptors for expressive thresholds or expertise.

In essence, bilingual academic language represents a dual process of translation, whereby colloquial language is translated into the academic expression of ideas, and an L1 is translated into an L2. All aspects of human consciousness, from the most basic to the most sophisticated, from the expression of qualia to propositional attitudes, follow predictable language patterns. Accordingly, over half of this book is devoted to establishing the fundamental principles underpinning the main regularities in lexis, syntax, and discourse.

In the current era, it is imperative that educational institutions address the presence of multilingualism in their student populations. Since the beginning of the twentieth century, communication has become a global phenomenon requiring the use of multiple languages. A lack of proficiency in a global language results in restricted access to fundamental social rights, a limited participation in international circles, and diminished social skills and cultural enrichment. Equity is a fundamental aspect of international education and L2 learning, a significant indicator of social stratification. A persistent phenomenon throughout history, future international PISA tests, also measuring L2 competence, will surely demonstrate its continued relevance.

Yet twentieth-century history has shown that, as George Steiner put it, 'people do not have roots, they have feet' (Ordine 2023), and that during their travels, they may encounter regions where other languages are spoken. As nations expect their citizens to be loyal to the official language, however, there is little room for multilingualism. Instead of taking advantage of diversity, rules are imposed to shore up the conservative rationale of one nation, one people, one language.

Multilingualism expands cultural boundaries, social *savoir-faire* and *savoir-être*, cognitive flexibility and even aptitude. Despite the fact that all these benefits have been demonstrated by solid bilingual research, linguistic diversity can disturb the status quo. US presidential candidate Kamala Harris, a progressive leader, made it clear in her first campaign speech that she would always work 'on behalf of the people, on behalf of every American, regardless of party, race, gender or the language your grandmother speaks'.[1] But there is still the question of those who have retained their heritage language, 'the language their grandmother speaks', but have also added the mainstream language to their repertoire. In this connection, multilingualism is regarded as a transitional quirk, rather than a gift, skill or sign of intellectual sophistication.

[1] Further information at: www.nytimes.com/2024/08/23/us/politics/kamala-harris-speech-transcript.html.

In the social sciences, it is difficult to draw definitive conclusions. As new circumstances emerge, impressions and ideas mutate. Nevertheless, there are some basic principles that language planners and stakeholders, in general, can adopt in the implementation of bilingual education:

1. An L2 does not undermine an L1. Learning an L2 does not interfere with learning the mother tongue. Languages do not compete in the mental structures of individuals but coexist as they emerge in the mind from a blank slate. Moreover, learning an L2 enhances the development of the dominant language. In bilingual environments, linguistic awareness increases, and there is a transfer of cognitive strategies common to all languages.
2. Content-based instruction in L2 learning in any subject area is not necessarily detrimental to content learning. Content may be initially covered more slowly as learners become familiar with the new language, but in multilingual situations, learning tends to go deeper if language scaffolding is practised. Bilingual education focuses on depth rather than on breadth and actually often fosters more critical skills than monolingual education.
3. Bilingual schools need resources: a bilingual school plaque does not make a school bilingual. Bilingualism in education depends largely on having good bilingual teachers. In an ideal world, those teachers would possess all the mandatory skills and language planners would not rush headlong into the quicksand of multilingual education without the necessary human resources. The international mobility of teachers and the linguistic excellence of staff should enable bilingual networks to spread and put an end to the L2 deficit, however acute it may be.

Given the huge gap existing between the academic multilingual few and the monolingual general public, one might wonder about the weight of the economic factor in the social distribution of language. Intergenerational economic insights may be relevant to the study of multilingualism, as social classes seem to be rather closed when it comes to advanced multilingual learning. Measures describing intergenerational dynamics, such as the Gini coefficient or the Great Gatsby Curve, could be applied to language competence with an eye to approaching the discussion of multilingual education from a greater number of perspectives, including a precise formulation of language capital, how it is distributed and how it is used more covertly than overtly.

# *References*


Aarssen, J. (1996). *Relating events in two languages: Acquisition of cohesive devices by Turkish-Dutch bilingual children at school age*. Tilburg University Press.

Abdel-Lah Ali, H. (2020). *Valoración del dariya ceutí. Construyendo un tercer espacio transcultural como alternativa al "multicomunitarismo" excluyente*. Universidad de Granada. http://hdl.handle.net/10481/62907.

Acevedo, C., Lövstedt, Ann-Christin, & Rose, D. (2009). *Will the implementation of Reading to Learn in Stockholm schools accelerate literacy learning for disadvantaged students and close the achievement gap?* https://doi.org/10.13140/RG.2.2.12012.69762.

Achugar, M. (2009). Designing environments for teaching and learning history in multilingual contexts. *Critical Inquiry in Language Studies*, *6*(1–2), 39–62. https://doi.org/10.1080/15427580802679377.

Achugar, M., & Carpenter, B. D. (2014). Tracking movement toward academic language in multilingual classrooms. *Journal of English for Academic Purposes*, *14*, 60–71. https://doi.org/10.1016/j.jeap.2013.12.002.

Adair, J. K., Colegrove, K. S.-S., & McManus, M. E. (2017). How the word gap argument negatively impacts young children of Latinx immigrants' conceptualizations of learning. *Harvard Educational Review*, *87*(3), 309–334. https://doi.org/10.17763/1943-5045-87.3.309.

Adam, J.-M. (1992). *Les textes: Types et prototypes: Récit, description, argumentation, explication et dialogue* (3. éd., revue et corrigée). Nathan.

Adger, C. T., Snow, C. E., & Christian, D. (Eds.). (2018). *What teachers need to know about language* (2.ª ed.). Multilingual Matters. https://doi.org/10.21832/9781788920193.

Adwan, S., & Bar-On, D. (2003). *Learning each other's narrative: Palestinians and Israelis*. Peace Research Institute in the Middle East.

Aitchison, J. (2012). *Words in the mind: An introduction to the mental lexicon* (4th ed.). Wiley-Blackwell.

Alba Quiñones, V., Vázquez, G., & Lorenzo, F. (2018). El desarrollo del español académico en los programas para estudiantes universitarios internacionales: Las funciones discursivas superiores. *Journal of Spanish Language Teaching*, *5*(2), 115–124. https://doi.org/10.1080/23247797.2018.1538323.

Allen, M. S., Kertoy, M. K., Sherblom, J. C., & Pettit, J. M. (1994). Children's narrative productions: A comparison of personal event and fictional

stories. *Applied Psycholinguistics*, *15*(2), 149–176. https://doi.org/10.1017/S0142716400005300.

Ambridge, B., & Lieven, E. V. M. (2011). *Child language acquisition: Contrasting theoretical approaches* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511975073.

Ammon, U. (1973). *Dialekt, soziale ungleichheit und schule* (2., überarbeitete Aufl). Beltz.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A Revision of Bloom's taxonomy of educational objectives*. Longman.

Anderson, R. C., & Freebody, P. (1981). Vocabulary knowledge. In J. Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 77–117). International Reading Association.

Anghel, B., Cabrales, A., & Carro, J. M. (2016). Evaluating a bilingual education program in Spain: The impact beyond foreign language learning. *Economic Inquiry*, *54*(2), 1202–1223. https://doi.org/10.1111/ecin.12305.

Arnold, J. (Ed.). (1999). *Affect in language learning*. Cambridge University Press.

Aryadoust, V. (2016). Understanding the growth of ESL paragraph writing skills and its relationships with linguistic features. *Educational Psychology*, *36*(10), 1742–1770. https://doi.org/10.1080/01443410.2014.950946.

Athanasiou, E., Moreno-Ternero, J. D., & Weber, S. (2016). Language learning and communicative benefits. In V. Ginsburgh & S. Weber (Eds.), *The Palgrave handbook of economics and language* (pp. 212–230). Palgrave Macmillan UK. https://doi.org/10.1007/978-1-137-32505-1_8.

Atkinson, A. B. (2018). *Inequality: What can be done?* (Paperback edition). Harvard University Press.

August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second-language learners: Report of the national literacy panel on language minority children and youth*. Lawrence Erlbaum Associates Publishers.

Ayora Esteban, M. C. (2008). La situación sociolingüística de Ceuta: Un caso de lenguas en contacto. *Tonos digital: esRevista de estudios filológicos, 16*. www.um.es/tonosdigital/znum16/secciones/tritonos1-Ceuta.htm.

Baetens Beardsmore, H. (1995). European models of bilingual education: Practice, theory and development. In O. García & C. Baker (Eds.), *Policy and practice in bilingual education: A reader extending the foundations* (pp. 139–151). Multilingual Matters. https://doi.org/10.1080/01434632.1993.9994523.

Bahktin, M. M. (1984). *Rabelais and his world* (H. Iswolsky, Trad.; Repr.). Indiana Univ. Pr.

Bailey, A. L., & Butler, F. A. (2003). *An evidentiary framework for operationalizing academic language for broad application to K-12 education: A design document, CSE report*. For full text: www. https://eric.ed.gov/?id=ED483026.

Bailey, N., Madden, C., & Krashen, S. D. (1974). Is there a «natural sequence» in adult second language learning? *Language Learning*, *24*(2), 235–243. https://doi.org/10.1111/j.1467-1770.1974.tb00505.x.

Bakhtin, M. M. (1986). The problem of speech genres. In M. M. Bakhtin, M. Holquist, & C. Emerson (Eds.), *Speech genres and other late essays* (1st ed., pp. 60–102). University of Texas Press.

Balota, D. A., Yap, M. J., Hutchison, K. A., Cortese, M. J., Kessler, B., Loftis, B., Neely, J. H., Nelson, D. L., Simpson, G. B., & Treiman, R. (2007). The English lexicon project. *Behavior Research Methods*, *39*(3), 445–459. https://doi.org/10.3758/BF03193014.

Banerjee, J., Franceschina, F., & Smith, A. M. (2007). Documenting features of written language production typical at different IELTS band score levels. *IELTS Research Reports*, *7*, 1–69.

Barber, H. A., Otten, L. J., Kousta, S.-T., & Vigliocco, G. (2013). Concreteness in word processing: ERP and behavioral effects in a lexical decision task. *Brain and Language*, *125*(1), 47–53. https://doi.org/10.1016/j.bandl.2013.01.005.

Barcoft, J., Sunderman, G., & Schmitt, N. (2011). Lexis. In J. Simpson (Ed.), *The Routledge handbook of applied linguistics* (pp. 571–583). Taylor & Francis Group.

Barthes, R. (1968). *Writing degree zero* ([1st American ed.].). Hill and Wang.

Barwell, R., Clarkson, P., Halai, A., Kazima, M., Moschkovich, J., Planas, N., Phakeng, M. S., Valero, P., & Villavicencio Ubillús, M. (Eds.). (2016). *Mathematics education and language diversity: The 21st ICMI study*. Springer International Publishing. https://doi.org/10.1007/978-3-319-14511-2.

Bauer, L., & Trudgill, P. (Eds.). (1998). *Language myths*. Penguin Books.

Bauer-Marschallinger, S. (2022). *CLIL with a capital I: Using cognitive discourse functions to integrate content and language learning in CLIL history education*. University of Vienna.

Beacco, J. C. (2010). Items for a description of linguistic competence in the language of schooling necessary for learning/teaching history (in secondary education). In *Language and school subjects: Linguistic dimensions of knowledge building in school curricula* (Vol. 1). Council of Europe. https://rm.coe.int/16805a1a29.

Bell, N. D. (2007). Safe territory? The humorous narratives of bilingual women. *Research on Language & Social Interaction*, *40*(2–3), 199–225. https://doi.org/10.1080/08351810701354656.

Bello, I. (2016). Cognitive implications of nominalizations in the advancement of scientific discourse. *International Journal of English Studies*, *16*(2), 1. https://doi.org/10.6018/ijes/2016/2/262921.

Benabou, R. (2017). *Discussion of Durlauf and Sheshadriśì «Understanding the Great Gatsby Curve»*. Princeton University and NBER.

Bengoetxea, K., González-Dios, I., & Aguirregoitia, A. (2020). AzterTest: Open source linguistic and stylistic analysis tool. *Procesamiento Del Lenguaje Natural*, 61–68. https://doi.org/10.26342/2020-64-7.

Berman, R. A. (2014). Setting the narrative scene: How children begin to tell a story. In K. E. Nelson, A. Aksu-Ko, C. E. Johnson, & A. Aksu-Koc (Eds.), *Children's language: Volume 10: Developing narrative and discourse competence* (0 ed., pp. 1–30). Psychology Press. www.taylorfrancis.com/books/9781135668037.

Berman, R. A., & Nir, B. (2010). The lexicon in writing–speech-differentiation. *Written Language & Literacy*, *13*(2), 183–205. https://doi.org/10.1075/wll.13.2.01ber.

Berman, R. A., & Nir-sagiv, B. (2007). Comparing narrative and expository text construction across adolescence: A developmental paradox. *Discourse Processes*, *43*(2), 79–120. https://doi.org/10.1080/01638530709336894.

Berninger, V. W., Nagy, W., & Beers, S. (2011). Child writers' construction and reconstruction of single sentences and construction of multi-sentence texts: Contributions of syntax and transcription to translation. *Reading and Writing*, *24*(2), 151–182. https://doi.org/10.1007/s11145-010-9262-y.

Bernstein, B. B. (2000). *Pedagogy, symbolic control, and identity: Theory, research, critique* (Rev. ed). Rowman & Littlefield Publishers.

Bestgen, Y. (2017). Beyond single-word measures: L2 writing assessment, lexical richness and formulaic competence. *System*, *69*, 65–78. https://doi.org/10.1016/j.system.2017.08.004.

Bhatia, V. K. (1993). *Analysing genre: Language use in professional settings*. Longman.

Bhatia, V. K. (2002). Applied genre analysis: analytical advances and pedagogical procedures. In A. M. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 279–283). L. Erlbaum.

Bialystok, E. (2017). The bilingual adaptation: How minds accommodate experience. *Psychological Bulletin*, *143*(3), 233–262. https://doi.org/10.1037/bul0000099.

Bialystok, E., & Martin, M. M. (2004). Attention and inhibition in bilingual children: Evidence from the dimensional change card sort task. *Developmental Science*, *7*(3), 325–339. https://doi.org/10.1111/j.1467-7687.2004.00351.x.

Biber, D. (1992). The multi-dimensional approach to linguistic analyses of genre variation: An overview of methodology and findings. *Computers and the Humanities*, *26*(5–6), 331–345. https://doi.org/10.1007/BF00136979.

Biber, D., Davies, M., Jones, J. K., & Tracy-Ventura, N. (2006). Spoken and written register variation in Spanish: A multi-dimensional analysis. *Corpora*, *1*(1), 1–37. https://doi.org/10.3366/cor.2006.1.1.1.

Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *The Longman grammar of spoken and written English*. Longman.

Biggs, J. B., & Tang, C. S. (with Society for Research into Higher Education). (2011). *Teaching for quality learning at university: What the student does* (4th ed.). McGraw-Hill, Society for Research into Higher Education & Open University Press.

Billingsley, M. K. (2009). Proust and the Squid: The story and science of the reading brain. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(12), 1202–1203. https://doi.org/10.1097/01.chi.0000360558.88531.3f.

Blank, M. (2001). Classroom discourse: A key to literacy. In K. G. Butler & E. R. Silliman (Eds.), *Speaking, reading, and writing in children with language learning disabilities: New paradigms in research and practice* (0 ed., pp. 151–174). Psychology Press. https://doi.org/10.4324/9781410604040.

Bley-Vroman, R. (1983). The comparative fallacy in interlanguage studies: The case of systematicity. *Language Learning*, *33*(1), 1–17. https://doi.org/10.1111/j.1467-1770.1983.tb00983.x.

Block, D. (2014). *Social class in applied linguistics* (1. publ). Routledge.

Blom, P. (2004). *Encyclopédie: The triumph of reason in an unreasonable age*. Fourth Estate.

Blommaert, J. (2010). *The sociolinguistics of globalization* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511845307.

Bloom, B. S., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives; the classification of educational goals*. Longmans.

Bock, K., & Levelt, W. J. M. (1994). Language production: Grammatical encoding. In M. A. Gernsbacher (Ed.), *Handbook of psycholinguistics* (pp. 945–984). Academic Press.

Bolander, B., & Watts, R. J. (2009). Re-reading and rehabilitating Basil Bernstein. *Multilingua – Journal of Cross-Cultural and Interlanguage Communication*, *28*(2–3), 143–173. https://doi.org/10.1515/mult.2009.008.

Borgonovi, F., Pokropek, A., Keslair, F., Gauly, B., & Paccagnella, M. (2017). *Youth in transition: How do some of the cohorts participating in PISA fare in PIAAC?* (OECD Education Working Papers 155). https://doi.org/10.1787/51479ec2-en.

Bosworth, Y. (2019). Gender inclusivity in the linguistic landscape of Parisian universities. *The French Review*, *93*(2), 175–196. https://doi.org/10.1353/tfr.2019.0014.

Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood.

Breeze, R., & Dafouz, E. (2017). Constructing complex cognitive discourse functions in higher education: An exploratory study of exam answers in Spanish- and English-medium instruction settings. *System*, *70*, 81–91. https://doi.org/10.1016/j.system.2017.09.024.

Breeze, R., & Gerns Jiménez-Villarejo, P. (2019). Building literacies in secondary school history: The specific contribution of academic writing support. *EuroAmerican Journal of Applied Linguistics and Languages*, *6*(1), 21–36. https://doi.org/10.21283/2376905X.10.149.

Breidbach, S., Bach, G., & Wolff, D. (Eds.). (2002). *Bilingualer Sachfachunterricht: Didaktik, Lehrer-/Lernerforschung und Bildungspolitik im Spannungsfeld von Theorie und Empirie. Mehrsprachigkeit in Schule und Unterricht: Vol. 1*. Lang.

Brown, R. (1973). *A first language: The early stages*. Harvard University Press. https://doi.org/10.4159/harvard.9780674732469.

Browne, C. (2012). Word knowledge. In R. Peterson (Ed.), *The Routledge encyclopedia of second language acquisition* (pp. 691–694). Taylor & Francis Group.

Bruce, I. (2008). *Academic Writing and Genre: A Systematic Analysis* (1st ed.). Bloomsbury Publishing Plc.

Brumfit, C. (1984). *Communicative methodology in language teaching: The roles of fluency and accuracy*. Cambridge University Press.

Bulté, B., & Housen, A. (2012). Defining and operationalising L2 complexity. In A. Housen, F. Kuiken, & I. Vedder (Eds.), *Language learning & language teaching* (Vol. 32, pp. 21–46). John Benjamins Publishing Company. https://doi.org/10.1075/lllt.32.02bul.

Bulté, B., & Housen, A. (2014). Conceptualizing and measuring short-term changes in L2 writing complexity. *Journal of Second Language Writing*, *26*, 42–65. https://doi.org/10.1016/j.jslw.2014.09.005.

Busch, B., Aziza, J., & Tjoutuku, A. (2006). *Language biographies for multilingual learning*. PRAESA. https://books.google.es/books?id=Q9qRtwAACAAJ.

Butler, Y. G., & Le, V.-N. (2018). A longitudinal investigation of parental social-economic status (SES) and young students' learning of English as a foreign language. *System*, *73*, 4–15. https://doi.org/10.1016/j.system.2017.07.005.

Byram, M., & Tost-Planet, M. A. (2000). *Social identity and the European dimension: Intercultural competence through foreign language learning*. Council of Europe Publishing. https://books.google.es/books?id=zFwIiTsXwR4C.

Caldas, S. J. (2008). Changing bilingual self-perceptions from early adolescence to early adulthood: Empirical evidence from a mixed-methods case study. *Applied Linguistics*, *29*(2), 290–311. https://doi.org/10.1093/applin/amm020.

Caro, K., & Rosado, N. (2017). Lexis, lexical competence and lexical knowledge: A review. *Journal of Language Teaching and Research*, *8*(2), 205. https://doi.org/10.17507/jltr.0802.01.

Carrard, P. (1992). *Poetics of the new history*. John Hopkins University Press.

Carretero, M., & Van Alphen, F. (2014). Do master narratives change among high school students? A characterization of how national history is represented. *Cognition and Instruction*, *32*(3), 290–312. https://doi.org/10.1080/07370008.2014.919298.

Cazden, C. B. (1968). The Acquisition of noun and verb inflections. *Child Development*, *39*(2), 433–448. https://doi.org/10.2307/1126956.

Chapelle, C. A. (1994). Are C-tests valid measures for L2 vocabulary research? *Second Language Research*, *10*(2), 157–187. https://doi.org/10.1177/026765839401000203.

Chaudron, C. (1983). Simplification of input: Topic reinstatements and their effects on L2 learners' recognition and recall. *TESOL Quarterly*, *17*(3), 437–458.

Chen, X., Alexopoulou, T., & Tsimpli, I. (2021). Automatic extraction of subordinate clauses and its application in second language acquisition research. *Behavior Research Methods*, *53*(2), 803–817. https://doi.org/10.3758/s13428-020-01456-7.

Chen, Y.-H., & Baker, P. (2014). Investigating criterial discourse features across second language development: Lexical bundles in rated learner essays, CEFR B1, B2 and C1. *Applied Linguistics*, *37*(6), 849–880. https://doi.org/10.1093/applin/amu065.

Chiswick, B. R., & Miller, P. W. (1995). The endogeneity between language and earnings: International analyses. *Journal of Labor Economics*, *13*(2), 246–288.

Chomsky, N. (1957). *Syntactic structures*. *De Gruyter*. https://doi.org/10.1515/9783112316009.

Christie, F. (1991). Literacy in Australia. *Annual Review of Applied Linguistics*, *12*, 142–155. https://doi.org/10.1017/S0267190500002191.

Christie, F. (2002). *Classroom discourse analysis: A functional perspective*. Continuum.

Christie, F. (2012). *Language education throughout the school years: A functional perspective*. Wiley-Blackwell.

Coffin, C. (2006a). *Historical discourse: The language of time, cause, and evaluation*. Continuum.

Coffin, C. (2006b). Reconstructing «personal time» as «collective time»: Learning the discourse of history. In R. Whittaker, A. McCabe, & M. O'Donnell

(Eds.), *Language and literacy: Functional approaches* (pp. 1–45). Continuum. www.continuumbooks.com/Books/detail.aspx?Re….

Collin, R. (2014). A Bernsteinian analysis of content area literacy. *Journal of Literacy Research*, *46*(3), 306–329. https://doi.org/10.1177/1086296X14552178.

Coltheart, M. (1981). The MRC psycholinguistic database. *The Quarterly Journal of Experimental Psychology Section A*, *33*(4), 497–505. https://doi.org/10.1080/14640748108400805.

Cook, V., & Li, W. (Eds.). (2016). *The Cambridge handbook of linguistic multi-competence*. Cambridge University Press.

Cooper, R. L. (1990). *Language planning and social change* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511620812.

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, *34*(2), 213. https://doi.org/10.2307/3587951.

Coyle, D. (2006). Developing CLIL: Towards a theory of practice. In N. Figueras (Ed.), *CLIL in Catalonia: From theory to practice* (pp. 5–29). Barcelona, Spain: APAC.

Cristofori, I., Cohen-Zimerman, S., & Grafman, J. (2019). Executive functions. In *Handbook of clinical neurology* (Vol. 163, pp. 197–219). Elsevier. https://doi.org/10.1016/B978-0-12-804281-6.00011-2.

Crossley, S. A. (2020). Linguistic features in writing quality and development: An overview. *Journal of Writing Research*, *11*(3), 415–443. https://doi.org/10.17239/jowr-2020.11.03.01.

Crossley, S. A., Cai, Z., & McNamara, D. S. (2012). Syntagmatic, paradigmatic, and automatic ngram approaches to assessing essay quality. In P. M. McCarthy & G. M. Youngblood (Eds.), *Proceedings of the 25th International Florida Artificial Intelligence Research Society Conference, FLAIRS-25* (pp. 214–219). The AAAI Press.

Crossley, S. A., Kyle, K., & McNamara, D. S. (2016a). The development and use of cohesive devices in L2 writing and their relations to judgments of essay quality. *Journal of Second Language Writing*, *32*, 1–16. https://doi.org/10.1016/j.jslw.2016.01.003.

Crossley, S. A., Kyle, K., & McNamara, D. S. (2016b). The tool for the automatic analysis of text cohesion (TAACO): Automatic assessment of local, global, and text cohesion. *Behavior Research Methods*, *48*(4), 1227–1237. https://doi.org/10.3758/s13428-015-0651-7.

Crossley, S. A., & McNamara, D. S. (2012). Predicting second language writing proficiency: The roles of cohesion and linguistic sophistication. *Journal of Research in Reading*, *35*(2), 115–135. https://doi.org/10.1111/j.1467-9817.2010.01449.x.

Crossley, S. A., & McNamara, D. S. (2014). Does writing development equal writing quality? A computational investigation of syntactic complexity in L2 learners. *Journal of Second Language Writing*, *26*, 66–79. https://doi.org/10.1016/j.jslw.2014.09.006.

Crossley, S. A., Roscoe, R., & McNamara, D. S. (2011). Predicting human scores of essay quality using computational indices of linguistic and textual features. In G. Biswas, S. Bull, J. Kay, & A. Mitrovic (Eds.), *Artificial intelligence in*

*education* (Vol. 6738, pp. 438–440). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-21869-9_62.

Crossley, S. A., Roscoe, R. D., McNamara, D. S., & Graesser, A. (2011) Predicting human scores of essay quality using computational indices of linguistic and textual features. In G. Biswas, S. Bull, J. Kay, and A. Mitrovic (Eds.), *Proceedings of the 15th International Conference on Artificial Intelligence in Education* (pp. 438–440). New York: Springer. https://doi.org/10.1007/978-3-642-21869-9_62.

Crossley, S. A., Salsbury, T., & McNamara, D. S. (2010a). The development of semantic relations in second language speakers: A case for Latent Semantic Analysis. *Vigo International Journal of Applied Linguistics*, *7*, 55–74.

Crossley, S. A., Salsbury, T., & McNamara, D. S. (2012). Predicting the proficiency level of language learners using lexical indices. *Language Testing*, *29*(2), 243–263. https://doi.org/10.1177/0265532211419331.

Crossley, S. A., Salsbury, T., McNamara, D. S., & Jarvis, S. (2011). Predicting lexical proficiency in language learner texts using computational indices. *Language Testing*, *28*(4), 561–580. https://doi.org/10.1177/0265532210378031.

Crossley, S. A., & Skalicky, S. (2019). Examining lexical development in second language learners: An approximate replication of Salsbury, Crossley & McNamara (2011). *Language Teaching*, *52*(3), 385–405. https://doi.org/10.1017/S0261444817000362.

Crossley, S. A., Weston, J. L., McLain Sullivan, S. T., & McNamara, D. S. (2011). The development of writing proficiency as a function of grade level: A linguistic analysis. *Written Communication*, *28*(3), 282–311. https://doi.org/10.1177/0741088311410188.

Crossley, S. A., & McNamara, D. (2010). Cohesion, coherence, and expert evaluations of writing proficiency. *Proceedings of the Annual Meeting of the Cognitive Science Society*, *32*(32). https://escholarship.org/uc/item/6n5908qx.

Crossley, S. A., & McNamara, D. (2011). Text coherence and judgments of essay quality: Models of quality and coherence. *Proceedings of the Annual Meeting of the Cognitive Science Society*, *33*(33). https://escholarship.org/uc/item/5cp1x9r2.

Crossley, S. A., & McNamara, D. (2016). Say more and be more coherent: How text elaboration and cohesion can increase writing quality. *Journal of Writing Research*, *7*(3), 351–370. https://doi.org/10.17239/jowr-2016.07.03.02.

Crossley, S. A., Salsbury, T., & McNamara, D. (2010b). The development of polysemy and frequency use in English Second Language speakers. *Language Learning*, *60*(3), 573–605. https://doi.org/10.1111/j.1467-9922.2010.00568.x.

Crowhurst, M. (1987). Cohesion in argument and narration at three grade levels. *Research in the Teaching of English*, *21*(2), 185–201.

Cummins, J. (1978). Educational implications of mother tongue maintenance in minority-language groups. *The Canadian Modern Language Review*, *34*(3), 395–416. https://doi.org/10.3138/cmlr.34.3.395.

Cummins, J. (1980). The entry and exit fallacy in Bilingual Education. *NABE Journal*, *4*(3), 25–59. https://doi.org/10.1080/08855072.1980.10668382.

Cummins, J. (1981). Empirical and theoretical underpinnings of bilingual education. *The Journal of Education*, *163*(1), 16–29. https://doi.org/10.1177/002205748116300104.

Cummins, J. (2000). *Language, power and pedagogy: Bilingual children in the crossfire*. Multilingual Matters. https://doi.org/10.21832/9781853596773.

Cummins, J. (2008). BICS and CALP: Empirical and theoretical status of the distinction. In N. H. Hornberger (Ed.), *Encyclopedia of Language and Education* (pp. 487–499). Springer US. https://doi.org/10.1007/978-0-387-30424-3_36.

Cummins, J. (2021). *Rethinking the education of multilingual learners: A critical analysis of theoretical concepts*. Multilingual Matters.

Cummins, J., & Swain, M. (2014). *Bilingualism in education* (0 ed.). Routledge. https://doi.org/10.4324/9781315835877.

Daller, M., Turlik, J., & Weir, I. (2013). Chapter 7. Vocabulary acquisition and the learning curve. In S. Jarvis & M. Daller (Eds.), *Studies in Bilingualism* (Vol. 47, pp. 185–218). John Benjamins Publishing Company. https://doi.org/10.1075/sibil.47.09ch7.

Dalton-Puffer, C. (2007). *Discourse in content and language integrated learning (CLIL) classrooms*. John Benjamins Pub.

Dalton-Puffer, C. (2013). A construct of cognitive discourse functions for conceptualising content-language integration in CLIL and multilingual education. *European Journal of Applied Linguistics*, *1*(2), 216–253. https://doi.org/10.1515/eujal-2013-0011.

Dalton-Puffer, C., & Bauer-Marschallinger, S. (2019). Cognitive Discourse Functions meet historical competences: Towards an integrated pedagogy in CLIL history education. *Journal of Immersion and Content-Based Language Education*, *7*(1), 30–60. https://doi.org/10.1075/jicb.17017.dal.

Dalton-Puffer, C., Bauer-Marschallinger, S., Brückl-Mackey, K., Hofmann, V., Hopf, J., Kröss, L., & Lechner, L. (2018). Cognitive discourse functions in Austrian CLIL lessons: Towards an empirical validation of the CDF Construct. *European Journal of Applied Linguistics*, *6*(1), 5–29. https://doi.org/10.1515/eujal-2017-0028.

Dalton-Puffer, C., & Smit, U. (2012). *Empirical perspectives on CLIL classroom discourse*. Peter Lang.

Davies, N. F. (1979). Teaching language as communication. *System*, *7*(3), 228–230. https://doi.org/10.1016/0346-251X(79)90008-3.

De Beaugrande, R., & Dressler, W. U. (1981). *Introduction to text linguistics*. Longman.

De Bot, K., Lowie, W., & Verspoor, M. (2007). A dynamic systems theory approach to second language acquisition. *Bilingualism: Language and Cognition*, *10*(1), 7–21. https://doi.org/10.1017/S1366728906002732.

De Villiers, J. G., & De Villiers, P. A. (1973). A cross-sectional study of the acquisition of grammatical morphemes in child speech. *Journal of Psycholinguistic Research*, *2*(3), 267–278. https://doi.org/10.1007/BF01067106.

Deane, P., & Quinlan, Th. (2010). What automated analyses of corpora can tell us about students' writing skills. *Journal of Writing Research*, *2*(2), 151–177. https://doi.org/10.17239/jowr-2010.02.02.4.

deBoer, M. (2020). Teacher-based assessment of learner-led interactions in CLIL: The power of cognitive discourse functions. In M. deBoer & D. Leontjev (Eds.), *Assessment and learning in content and language integrated learning*

*(CLIL) classrooms* (pp. 229–251). Springer International Publishing. https://doi.org/10.1007/978-3-030-54128-6_10.

Declerck, M., Wen, Y., Snell, J., Meade, G., & Grainger, J. (2020). Unified syntax in the bilingual mind. *Psychonomic Bulletin & Review*, *27*(1), 149–154. https://doi.org/10.3758/s13423-019-01666-x.

Delu, Z., & Rushan, L. (2023). *New research on cohesion and coherence in linguistics*. Routledge.

Deutscher, G. (2009). "Overall complexity": A wild goose chase? In G. Sampson, D. Gil, & P. Trudgill (Eds.), *Language complexity as an evolving variable* (pp. 243–251). Oxford University Press. https://doi.org/10.1093/oso/9780199545216.003.0017.

Díaz Barriga, F., García, J. A., & Toral, P. (2008). La compresión de la noción de tiempo histórico en estudiantes mexicanos de Primaria y Bachillerato. *Culture and Education, Cultura y Educación*, *20*(2), 143–160.

Dóczi, B. (2019). An overview of conceptual models and theories of lexical representation in the mental lexicon. In S. Webb (Ed.), *The Routledge handbook of vocabulary studies* (pp. 46–65). Routledge.

Dóczi, B., & Kormos, J. (2016). *Longitudinal developments in vocabulary knowledge and lexical organization*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190210274.001.0001.

Doiz, A., & Lasagabaster, D. (2021). An analysis of the use of cognitive discourse functions in English-medium history teaching at university. *English for Specific Purposes*, *62*, 58–69. https://doi.org/10.1016/j.esp.2020.12.002.

Dörnyei, Z., & Kormos, J. (1998). Problem-Solving: Mechanisms in L2 communication: A psycholinguistic perspective. *Studies in Second Language Acquisition*, *20*(3), 349–385. JSTOR.

Douglas, S. R. (2013). The lexical breadth of undergraduate novice level writing competency. *Canadian Journal of Applied Linguistics*, *16*(1), 152–170.

Dulay, H. C., & Burt, M. K. (1973). Should we teach children syntax? *Language Learning*, *23*(2), 245–258. https://doi.org/10.1111/j.1467-1770.1973.tb00659.x.

Dulay, H. C., & Burt, M. K. (1974). Natural sequences in child second language acquisition. *Language Learning*, *24*(1), 37–53. https://doi.org/10.1111/j.1467-1770.1974.tb00234.x.

Durrant, P., & Brenchley, M. (2022). The development of academic collocations in children's writing. In P. Szudarski & S. Barclay (Eds.), *Vocabulary theory, patterning and teaching*. Multilingual Matters.

Durrant, P., Brenchley, M., & McCallum, L. (2021). *Understanding development and proficiency in writing: Quantitative corpus linguistic approaches* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/9781108770101.

Durrant, P., & Schmitt, N. (2009). To what extent do native and non-native writers make use of collocations? *IRAL – International Review of Applied Linguistics in Language Teaching*, *47*(2), 157–177. https://doi.org/10.1515/iral.2009.007.

Dworin, J. E. (2004). Insights into English-Spanish biliteracy development among elementary school students. *Journal of Hispanic Higher Education*, *2*(2), 181–202. https://doi.org/10.1177/1538192702250621.

Eagleman, D. (2012). *Incognito: The secret lives of the brain*. Knopf Doubleday Publishing Group.
Eagleton, T. (2011). *Why Marx was right*. Yale University Press.
Echevarría, J., Vogt, M., & Short, D. (2017). *Making content comprehensible for English learners: The SIOP Model* (5th ed.). Pearson.
Eco, U. (1997). *The search for the perfect language* (1. publ. in paperback).
Eco, U. (2018). *Contra el fascismo / Against fascism*. Lumen.
Eggins, S., & Martin, J. R. (2003). El contexto como género: Una perspectiva lingüística funciona. *Revista Signos*, *36*(54). https://doi.org/10.4067/S0718-09342003005400005.
Elliot, A. J. (1981). *Child language*. Cambridge University Press.
Ellis, N. C. (2002). Frequency effects in language processing. A review with implications for implicit and explicit language acquisition. *Studies in Second Language Acquisition*, *24*(2), 143–188. https://doi.org/10.1017/S0272263102002024.
Ellis, N. C. (2012). Formulaic language and second language acquisition: Zipf and the phrasal teddy bear. *Annual Review of Applied Linguistics*, *32*, 17–44. https://doi.org/10.1017/S0267190512000025.
Ellis, R. (2003). *Task-based language learning and teaching* (7. print). Oxford University Press.
Ellis, R. (2008). *The study of second language acquisition* (2. ed., [9. Nachdr.]). Oxford University Press.
Ellis, R., & Barkhuizen, G. P. (2005). *Analysing learner language*. Oxford University Press.
European Commission. (2002). *Language, diversity, citizenship: Policies for plurilingualism in Europe*. Council of Europe.
European Commission. (2011). *Teaching reading in Europe: Contexts, policies and practices*. Education, Audiovisual and Culture Executive Agency.
Evans, V., Bergen, B. K., & Zinken, J. (2007). The cognitive linguistics enterprise: An overview. In V. Evans, B. K. Bergen, & J. Zinken (Eds.), *The cognitive linguistics reader* (pp. 2–36). Equinox.
Evnitskaya, N., & Dalton-Puffer, C. (2023). Cognitive discourse functions in CLIL classrooms: Eliciting and analysing students' oral categorizations in science and history. *International Journal of Bilingual Education and Bilingualism*, *26*(3), 311–330. https://doi.org/10.1080/13670050.2020.1804824.
Fang, Z. (2006). The language demands of science reading in middle school. *International Journal of Science Education*, *28*(5), 491–520. https://doi.org/10.1080/09500690500339092.
Feez, S., & Joyce, H. (1998). *Text-based syllabus design*. Macquarie University.
Feinauer, E., Hall-Kenyon, K. M., & Everson, K. C. (2017). Rethinking the linguistic threshold hypothesis: Modeling the linguistic threshold among young Spanish–English bilinguals. *Bilingualism: Language and Cognition*, *20*(5), 886–902. https://doi.org/10.1017/S1366728916000626.
Fellbaum, C. (Ed.). (1998). *WordNet: An electronic lexical database*. The MIT Press. https://doi.org/10.7551/mitpress/7287.001.0001.

Fellbaum, C. (2005). WordNet and wordnets. In K. Brown (Ed.), *Encyclopedia of language and linguistics* (2nd ed., pp. 665–670). Elsevier.

Ferris, D. R. (1994). Lexical and syntactic features of ESL writing by students at different levels of L2 proficiency. *TESOL Quarterly*, *28*(2), 414. https://doi.org/10.2307/3587446.

Firth, J. R. (1957). *Studies in linguistic analysis*. Philological Society.

Fishman, J. A., & García, O. (Eds.). (2010). *Handbook of language and ethnic identity* (2nd ed.). Oxford University Press.

Fitzgerald, J. C. (2011). *Comprehending historical narratives: Exploring the relationship between causal language and students' mental representations of history*. University of Pittsburgh.

Flores, N., & García, O. (2017). A critical review of bilingual education in the United States: From basements and pride to boutiques and profit. *Annual Review of Applied Linguistics*, *37*, 14–29. https://doi.org/10.1017/S0267190517000162.

Flowerdew, J. (2014). *Academic discourse* (0 ed.). Routledge. https://doi.org/10.4324/9781315838069.

Flowerdew, L. (2015). Data-driven learning and language learning theories: Whither the twain shall meet. In A. Leńko-Szymańska & A. Boulton (Eds.), *Studies in corpus linguistics* (Vol. 69, pp. 15–36). John Benjamins Publishing Company. https://doi.org/10.1075/scl.69.02flo.

Folse, K. S. (2004). Myths about teaching and learning second language vocabulary: What recent research says. *TESL Reporter*, *37*(2), 1–13.

Foucault, M. (1969). *The archaeology of knowledge*. Routledge.

García, O., & Wei, L. (2014). *Translanguaging: Language, bilingualism and education*. Palgrave Macmillan.

García Castaño, F. J., Granados Martínez, A., & García-Cano Torrico, M. (1997). *Educación: ¿Integración o exclusión de la diversidad cultural?* (1st ed.). Laboratorio de Estudios Interculturales, Universidad de Granada.

García Marcos, F. (2020). La recepción de Bernstein en Alemania. *Refracción: revista sobre lingüística materialista*, *2*, 16.

Gardner, R. C. (2010). *Motivation and second language acquisition: The socio-educational model*. Peter Lang.

Gardner, S., Nesi, H., & Biber, D. (2019). Discipline, level, genre: Integrating situational perspectives in a New MD analysis of university student writing. *Applied Linguistics*, *40*(4), 646–674. https://doi.org/10.1093/applin/amy005.

Garrity, S., Aquino-Sterling, C. R., Van Liew, C., & Day, A. (2018). Beliefs about bilingualism, bilingual education, and dual language development of early childhood preservice teachers raised in a Prop 227 environment. *International Journal of Bilingual Education and Bilingualism*, *21*(2), 179–196. https://doi.org/10.1080/13670050.2016.1148113.

Gee, J. P. (1990). *Social linguistics and literacies: Ideology in discourses*. Routledge.

Genc, Z. S. (2018). Structural approach. In J. I. Liontas (Ed.), *The TESOL encyclopedia of English language teaching* (1.ª ed., pp. 1–6). Wiley. https://doi.org/10.1002/9781118784235.eelt0164.

Genesee, F. (1989). Early bilingual development: One language or two? *Journal of Child Language*, *16*(1), 161–179. https://doi.org/10.1017/S0305000900013490.
Genesee, F., Lindholm-Leary, K., Saunders, B., & Christian, D. (2006). *Educating English language learners: A synthesis of research evidence* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511499913.
Genette, G. (1980). *Narrative discourse. An essay in method*. Blackwell.
Gillham, B. (Ed.). (1986). *The language of school subjects*. Heinemann Educational Books.
Ginsburgh, V., & Weber, S. (Eds.). (2016). *The Palgrave handbook of the economics and language*. Palgrave Macmillan.
Giora, R. (1985). Notes towards a theory of Text Coherence. *Poetics Today*, *6*(4), 699. https://doi.org/10.2307/1771962.
González-Fernández, B., & Schmitt, N. (2020). Word knowledge: Exploring the relationships and order of acquisition of vocabulary knowledge components. *Applied Linguistics*, *41*(4), 481–505. https://doi.org/10.1093/applin/amy057.
Good, D. (2009). Pause for thought: Why Bernstein was not a psycholinguist. *Multilingua – Journal of Cross-Cultural and Interlanguage Communication*, *28*(2–3), 175–193. https://doi.org/10.1515/mult.2009.009.
Grabe, W. (2002). Narrative and expository macro-genres. In A. M. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 249–268). Lawrence Erlbaum Associates.
Graesser, A. C., & McNamara, D. S. (2011). Computational analyses of multilevel discourse comprehension. *Topics in Cognitive Science*, *3*(2), 371–398. https://doi.org/10.1111/j.1756-8765.2010.01081.x.
Graesser, A. C., McNamara, D. S., & Kulikowich, J. M. (2011). Coh-Metrix: Providing multilevel analyses of text characteristics. *Educational Researcher*, *40*(5), 223–234. https://doi.org/10.3102/0013189X11413260.
Graesser, A. C., McNamara, D. S., & Louwerse, M. M. (2003). What do readers need to learn in order to process coherence relations in narrative and expository text. In A. P. Sweet & C. E. Snow (Eds.), *Rethinking reading comprehension* (pp. 82–98). Guilford Press.
Granados, A. (2021). Análisis computacional de corpus de español avanzado: Claves para una descripción. In F. Lorenzo, V. De Alba Quiñones, & O. Cruz Moya (Eds.), *El desarrollo del español académico en L2 y LE. Perspectivas desde la educación bilingüe* (pp. 137–166). Peter Lang B. https://doi.org/10.3726/b18461.
Granados, A., López-Jiménez, M. D., & Lorenzo, F. (2022). A longitudinal study of L2 historical writing: Lexical richness and writing proficiency in Content and Language Integrated Learning. *Ibérica*, *43*, 129–154. https://doi.org/10.17398/2340-2784.43.129.
Granados, A., & Lorenzo, F. (2021). English L2 connectives in academic bilingual discourse: A longitudinal computerised analysis of a learner corpus. *Revista Signos*, *54*(106), 626–644. https://doi.org/10.4067/S0718-09342021000200626.
Granados, A., & Lorenzo, F. (2022). A tale of two cities: The ideological debate on equity in bilingual schooling. *AILA Review*, *35*(2), 203–226. https://doi.org/10.1075/aila.22019.gra.

Granados, A., & Lorenzo, F. (2024). A functional description of disciplinary literacy in history: Applications of the Common European Framework of Reference for Languages to content and language integrated learning courses. In J. Huettner & C. Dalton-Puffer (Eds.), *Building disciplinary literacies in content and language integrated learning*. Routledge.

Granados, A., Lorenzo-Espejo, A., & Lorenzo, F. (2022). Evidence for the interdependence hypothesis: A longitudinal study of biliteracy development in a CLIL/bilingual setting. *International Journal of Bilingual Education and Bilingualism*, *25*(8), 3005–3021. https://doi.org/10.1080/13670050.2021.2001428.

Granados, A., Lorenzo-Espejo, A., & Lorenzo, F. (2023). A portrait of academic literacy in mid-adolescence: A computational longitudinal account of cognitive academic language proficiency during secondary school. *Language and Education*, *37*(3), 288–307. https://doi.org/10.1080/09500782.2022.2079951.

Grant, L., & Ginther, A. (2000). Using computer-tagged linguistic features to describe L2 writing differences. *Journal of Second Language Writing*, *9*(2), 123–145. https://doi.org/10.1016/S1060-3743(00)00019-9.

Greene, J. P. (1997). A meta-analysis of the Rossell and Baker review of bilingual education research. *Bilingual Research Journal*, *21*(2–3), 103–122. https://doi.org/10.1080/15235882.1997.10668656.

Gregg, K. R. (2001). Learnability and second language acquisition theory. In P. Robinson (Ed.), *Cognition and second language instruction* (1.ª ed., pp. 152–180). Cambridge University Press. https://doi.org/10.1017/CBO9781139524780.008.

Gregg, K. R. (2003). SLA theory: Construction and assessment. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* (1.ª ed., pp. 830–865). Wiley. https://doi.org/10.1002/9780470756492.ch23.

Gregori-Signes, C., & Clavel-Arroitia, B. (2015). Analysing lexical density and lexical diversity in university students' written discourse. *Procedia – Social and Behavioral Sciences*, *198*, 546–556. https://doi.org/10.1016/j.sbspro.2015.07.477.

Grillo, L. (2011). *Scribam ipse de me*: The personality of the narrator in Caesar's *Bellum Civile*. *American Journal of Philology*, *132*(2), 243–271. https://doi.org/10.1353/ajp.2011.0013.

Grin, F., Sfreddo, C., & Vaillancourt, F. (2013). *The economics of the multilingual workplace*. Routledge.

Grosjean, F. (2001). *Life with two languages: An introduction to bilingualism* (11.ª ed.). Harvard University Press.

Grosjean, F. (2019). *A journey in languages and cultures: The life of a bicultural bilingual* (1.ª ed.). Oxford University Press. https://doi.org/10.1093/oso/9780198754947.001.0001.

Grundy, J. G. (2020). The effects of bilingualism on executive functions: An updated quantitative analysis. *Journal of Cultural Cognitive Science*, *4*(2), 177–199. https://doi.org/10.1007/s41809-020-00062-5.

Guo, L., Crossley, S. A., & McNamara, D. S. (2013). Predicting human judgments of essay quality in both integrated and independent second language writing samples: A comparison study. *Assessing Writing*, *18*(3), 218–238. https://doi.org/10.1016/j.asw.2013.05.002.

Habermas, J. (2007). *The theory of communicative action, volume 1: Reason and the rationalization of society (T. MacCarthy, Trad.)*. Beacon.
Halliday, M. A. K. (1990). Spoken and written language (2. ed., 2. impr). Oxford University Press.
Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English* (0 ed.). Routledge. https://doi.org/10.4324/9781315836010.
Halliday, M. A. K., Matthiessen, C. M. I. M., Halliday, M., & Matthiessen, C. (2014). *An introduction to functional grammar* (0 ed.). Routledge. https://doi.org/10.4324/9780203783771.
Hall-Mills, S., & Apel, K. (2015). Linguistic feature development across grades and genre in elementary writing. *Language, Speech, and Hearing Services in Schools*, *46*(3), 242–255. https://doi.org/10.1044/2015_LSHSS-14-0043.
Hammerly, H. (1991). *Fluency and accuracy: Toward balance in language teaching and learning*. Multilingual Matters.
Harari, Y. N. (2024). *Nexus: A brief history of information networks from the Stone Age to AI* (1st edition). Random House.
Harmon, Z. & Kapatsinski, V. (2017). "Putting old tools to novel uses: The role of form accessibility in semantic extension". *Cognitive Psychology* 98, 22–44. https://doi.org/10.1016/j.cogpsych.2017.08.002.
Hartsuiker, R. J., & Bernolet, S. (2017). The development of shared syntax in second language learning. *Bilingualism: Language and Cognition*, *20*(2), 219–234. https://doi.org/10.1017/S1366728915000164.
Hartsuiker, R. J., Pickering, M. J., & Veltkamp, E. (2004). Is syntax separate or shared between languages?: Cross-linguistic syntactic priming in Spanish-English bilinguals. *Psychological Science*, *15*(6), 409–414. https://doi.org/10.1111/j.0956-7976.2004.00693.x.
Harvey, O. (2019). *«Life hung on a word»: Shibboleths and genocide in Danticat's the farming of bones, Wiesel's night, and Courtemanche's a Sunday at the pool in Kigali*. Thesis, East Carolina University. https://thescholarship.ecu.edu/handle/10342/7588.
Haswell, R. H. (2000). Documenting improvement in college writing: A longitudinal approach. *Written Communication*, *17*(3), 307–352. https://doi.org/10.1177/0741088300017003001.
Hatch, E. M. (1992). *Discourse and language education*. Cambridge University Press.
Hatzidaki, A., Branigan, H. P., & Pickering, M. J. (2011). Co-activation of syntax in bilingual language production. *Cognitive Psychology*, *62*(2), 123–150. https://doi.org/10.1016/j.cogpsych.2010.10.002.
Havelock, E. A. (1986). *The muse learns to write: Reflections on orality and literacy from antiquity to the present*. Yale University Press.
Heller, M. (2011). *Paths to post-nationalism: A critical ethnography of language and identity*. Oxford University Press.
Herget, D., Dalton, B., Kinney, S., Smith, W. Z., Wilson, D., & Rogers, J. (2019). *U.S. PIRLS and ePIRLS 2016 Technical report and user's guide*. National Center for Education Statistics. U.S. Department of Education.
Hickmann, M. (2003). *Children's discourse: Person, space and time across languages*. Cambridge University Press.

Hobbs, J. R. (1979). Coherence and coreference. *Cognitive Science*, *3*(1), 67–90. https://doi.org/10.1207/s15516709cog0301_4.
Hobsbawm, E. J. (1997). *On history (reprint)*. Abacus.
Hoggart, R. (1957). *The uses of literacy* (new ed.). Penguin.
Holliday, A. (2018). Native-speakerism. In J. I. Liontas (Ed.), *The TESOL encyclopedia of English language teaching* (1.ª ed., pp. 1–7). Wiley. https://doi.org/10.1002/9781118784235.eelt0027.
Holm, J. A. (2000). *An introduction to pidgin and creoles*. Cambridge University Press.
Holme, R. (2012). Emergentism, connectionism and complexity. In J. Herschensohn & M. Young-Scholten (Eds.), *The Cambridge handbook of second language acquisition* (1.ª ed., pp. 605–626). Cambridge University Press. https://doi.org/10.1017/CBO9781139051729.035.
Hornberger, N. H. (1990). Creating successful learning contexts for bilingual literacy. *Teachers College Record*, *92*(2), 212–229.
Hornberger, N. H. (2004). The continua of biliteracy and the bilingual educator: Educational linguistics in practice. *International Journal of Bilingual Education and Bilingualism*, *7*(2–3), 155–171. https://doi.org/10.1080/13670050408667806.
Hornberger, N. H., & Skilton-Sylvester, E. (2000). Revisiting the continua of biliteracy: International and critical perspectives. *Language and Education*, *14*(2), 96–122. https://doi.org/10.1080/09500780008666781.
Hou, J., Loerts, H., & Verspoor, M. H. (2018). Chunk use and development in advanced Chinese L2 learners of English. *Language Teaching Research*, *22*(2), 148–168. https://doi.org/10.1177/1362168816662290.
Housen, A., De Clercq, B., Kuiken, F., & Vedder, I. (2019). Multiple approaches to complexity in second language research. *Second Language Research*, *35*(1), 3–21. https://doi.org/10.1177/0267658318809765.
Housen, A., & Kuiken, F. (2009). Complexity, accuracy, and fluency in second language acquisition. *Applied Linguistics*, *30*(4), 461–473. https://doi.org/10.1093/applin/amp048.
Housen, A., Kuiken, F., & Vedder, I. (2012). Complexity, accuracy and fluency: Definitions, measurement and research. In A. Housen, F. Kuiken, & I. Vedder (Eds.), *Language learning & language teaching* (Vol. 32, pp. 1–20). John Benjamins Publishing Company. https://doi.org/10.1075/lllt.32.01hou.
Huang, J., Pickering, M. J., Chen, X., Cai, Z., Wang, S., & Branigan, H. P. (2019). Does language similarity affect representational integration? *Cognition*, *185*, 83–90. https://doi.org/10.1016/j.cognition.2019.01.005.
Huddleston, R., & Pullum, G. K. (2002). *The Cambridge grammar of the English language* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/9781316423530.
Hulstijn, J. H. (2011). Language proficiency in native and nonnative speakers: An agenda for research and suggestions for second-language assessment. *Language Assessment Quarterly*, *8*(3), 229–249. https://doi.org/10.1080/15434303.2011.565844.
Hulstijn, J. H. (2015). *Language proficiency in native and non-native speakers: Theory and research* (Vol. 41). John Benjamins Publishing Company. https://doi.org/10.1075/lllt.41.

Hunt, K. W. (1965). *Grammatical structures written at three grade levels. NCTE research report No. 3*. https://eric.ed.gov/?id=ED113735.

Hunt, K. W. (1970). Syntactic maturity in schoolchildren and adults. *Monographs of the Society for Research in Child Development*, *35*(1), iii. https://doi.org/10.2307/1165818.

Huntington, S. P. (1996). *The clash of civilizations and the remaking of world order*. Simon & Schuster.

Husein, R., & Pulungan, A. H. (2016). Chapter 9. Discussion. In *Sumber Belajar Penunjang PLPG2016 Bahasa Inggris [supporting learning resources for PLPG2016 English]*. Kementerian Pendidikan Dan Kebudayaan Direktorat Jenderal Guru Dan Tenaga Kependidikan. https://imadesujana.files.wordpress.com/2016/10/157_bab-9-discussion.pdf.

Hüttner, J. I. (2007). *Academic writing in a foreign language: An extended genre analysis of student texts*. Peter Lang.

Hyland, K. (2002). 6. Genre: Language, context, and literacy. *Annual Review of Applied Linguistics*, *22*, 113–135. https://doi.org/10.1017/S0267190502000065.

Hyland, K. (2004). *Genre and second language writing*. University of Michigan Press.

Hyland, K. (2006). Disciplinary differences: Language variation in academic discourses. In K. Hyland & M. Bondi (Eds.), *Academic discourse across disciplines* (pp. 17–45). Peter Lang.

Hyland, K. (2011). Academic discourse. In K. Hyland & Paltridge, B. (Eds.), *Continuum companion to discourse analysis* (pp. 171–184). Continuum.

Hymes, D. H. (1972). On communicative competence. In J. B. Pride & J. Holmes (Eds.), *Sociolinguistics: Selected readings* (pp. 269–293). Penguin.

Hyon, S. (1996). Genre in three traditions: Implications for ESL. *TESOL Quarterly*, *30*(4), 693. https://doi.org/10.2307/3587930.

Ivanic, R., & McEnery, T. (2000). *Lancaster corpus of children's project writing* [Learner Corpus]. www.lancaster.ac.uk/fass/projects/lever/.

Ives, P. (2004). *Gramsci's politics of language: Engaging the Bakhtin Circle and the Frankfurt School*. University of Toronto Press. https://doi.org/10.3138/9781442675490.

Jackson, H., & Zé Amvela, E. (2000). *Words, meaning, and vocabulary: An introduction to modern English lexicology*. Continuum.

Jacob, G., Katsika, K., Family, N., & Allen, S. E. M. (2017). The role of constituent order and level of embedding in cross-linguistic structural priming. *Bilingualism: Language and Cognition*, *20*(2), 269–282. https://doi.org/10.1017/S1366728916000717.

Jafarpur, A. (1991). Cohesiveness as a basis for evaluating compositions. *System*, *19*(4), 459–465. https://doi.org/10.1016/0346-251X(91)90026-L.

Jakobson, R. (1960). Closing statement: Linguistics and poetics. In T. A. Sebeok (Ed.), *Style in language* (pp. 350–377). MIT Press.

Jakonen, T., & Morton, T. (2015). Epistemic search sequences in peer interaction in a content-based language classroom. *Applied Linguistics*, *36*(1), 73–94. https://doi.org/10.1093/applin/amt031.

Jarvis, S. (2002). Short texts, best-fitting curves and new measures of lexical diversity. *Language Testing*, *19*(1), 57–84. https://doi.org/10.1191/0265532202lt220oa.
Jarvis, S. (2013). Capturing the diversity in lexical diversity. *Language Learning*, *63*(s1), 87–106. https://doi.org/10.1111/j.1467-9922.2012.00739.x.
Jarvis, S. (2017). Grounding lexical diversity in human judgments. *Language Testing*, *34*(4), 537–553. https://doi.org/10.1177/0265532217710632.
Jaspers, J. (2011). Talking like a 'zerolingual': Ambiguous linguistic caricatures at an urban secondary school. *Journal of Pragmatics*, *43*(5), 1264–1278. https://doi.org/10.1016/j.pragma.2010.05.012.
Jaworski, A., & Coupland, N. (Eds.). (1999). *The discourse reader*. Routledge.
Jiménez Castillo, J. (2005). Redefinición del analfabetismo: El analfabetismo funcional. *Revista de educación*, *338*, 273–294.
Jiménez Gámez, R. Á. (2012). Diversidad cultural y lingüística, identidad e inmigración: Algunas conclusiones y propuestas desde la investigación educativa. (Cultural and Linguistic diversity, identity and immigration: Some considers and proposals from educative research). *Revista educación inclusiva*, *5*(1), 139–156.
Johns, A. M. (Ed.). (2002). *Genre in the classroom: Multiple perspectives*. L. Erlbaum.
Johnson, D. C., Johnson, E. J., & Hetrick, D. (2020). Normalization of language deficit ideology for a new generation of minoritized U.S. youth. *Social Semiotics*, *30*(4), 591–606. https://doi.org/10.1080/10350330.2020.1766210.
Johnson, D. W. (1981). Student-student interaction: The neglected variable in education. *Educational Researcher*, *10*(1), 5–10. https://doi.org/10.3102/0013189X010001005.
Jonker, L. C., Berlejung, A., & Cornelius, I. (Eds.). (2021). *Multilingualism in ancient contexts* (1.ª ed.). African Sun Media; JSTOR. www.jstor.org/stable/j.ctv1nzfzjo.
Juknevičienė, R. (2009). Lexical bundles in learner language: Lithuanian learners vs. native speakers. *Kalbotyra*, *61*(3), 61–72. https://doi.org/10.15388/Klbt.2009.7638.
Karmiloff-smith, A. (1985). Language and cognitive processes from a developmental perspective. *Language and Cognitive Processes*, *1*(1), 61–85. https://doi.org/10.1080/01690968508402071.
Kim, M., & Crossley, S. A. (2018). Modeling second language writing quality: A structural equation investigation of lexical, syntactic, and cohesive features in source-based and independent writing. *Assessing Writing*, *37*, 39–56. https://doi.org/10.1016/j.asw.2018.03.002.
Klemperer, V. (2013). *The language of the Third Reich: LTI Lingua Tertii Imperii: A philologist's notebook (Bloomsbury Revelations edition)*. Bloomsbury Academic.
Koshik, I. (2002). Designedly incomplete utterances: A pedagogical practice for eliciting knowledge displays in error correction sequences. *Research on Language & Social Interaction*, *35*(3), 277–309. https://doi.org/10.1207/S15327973RLSI3503_2.
Krauze, E. (2022). *Spinoza en el Parque México: Conversaciones con José María Lassalle*. Tusquets Editores.

Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.

Kroll, J. F., & Ma, F. (2017). The bilingual lexicon. In E. M. Fernández & H. S. Cairns (Eds.), *Handbook of psycolinguistics* (pp. 294–319). Wiley-Blackwell Publications.

Kroll, J. F., & Stewart, E. (1994). Category interference in translation and picture naming: Evidence for asymmetric connections between bilingual memory representations. *Journal of Memory and Language*, *33*(2), 149–174. https://doi.org/10.1006/jmla.1994.1008.

Kupersmitt, J., Yifat, R., & Blum-Kulka, S. (2014). The development of coherence and cohesion in monolingual and sequential bilingual children's narratives: Same or different? *Narrative Inquiry*, *24*(1), 40–76. https://doi.org/10.1075/ni.24.1.03kup.

Kyle, K., & Crossley, S. A. (2016). The relationship between lexical sophistication and independent and source-based writing. *Journal of Second Language Writing*, *34*, 12–24. https://doi.org/10.1016/j.jslw.2016.10.003.

Kyle, K., & Crossley, S. A. (2015). Automatically assessing lexical sophistication: Indices, tools, findings, and application. *TESOL Quarterly*, *49*(4), 757–786. https://doi.org/10.1002/tesq.194.

Kyle, K., & Crossley, S. A. (2018). Measuring syntactic complexity in L2 writing using fine-grained clausal and phrasal indices. *The Modern Language Journal*, *102*(2), 333–349. https://doi.org/10.1111/modl.12468.

Kyle, K., & Crossley, S. A. (2021). *NLP for the Social Sciences*. www.linguisticanalysistools.org.

Kyle, K., Crossley, S. A., & Berger, C. (2018). The tool for the automatic analysis of lexical sophistication (TAALES): Version 2.0. *Behavior Research Methods*, *50*(3), 1030–1046. https://doi.org/10.3758/s13428-017-0924-4.

Labov, W. (2003). Some sociolinguistic principles. In C. B. Paulston & G. R. Tucker (Eds.), *Sociolinguistics: The essential readings* (pp. 234–250). Blackwell Pub.

Lahuerta Martínez, A. C. (2018). Analysis of syntactic complexity in secondary education EFL writers at different proficiency levels. *Assessing Writing*, *35*, 1–11. https://doi.org/10.1016/j.asw.2017.11.002.

Larsen-Freeman, D., & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford University Press.

Laufer, B. (1998). The development of passive and active vocabulary in a second language: Same or different? *Applied Linguistics*, *19*(2), 255–271. https://doi.org/10.1093/applin/19.2.255.

Laufer, B., & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, *16*(3), 307–322. https://doi.org/10.1093/applin/16.3.307.

Leah Espada-Gustilo. (2011). Linguistic features that impact essay scores: A corpus linguistic analysis of ESL writing in three proficiency levels. *The Southeast Asian Journal of English Language Studies*, *17*(1), 55–64.

Leeman, J. (2014). Critical approaches to teaching Spanish as a local-foreign language. In M. Lacorte (Ed.), *The Routledge handbook of Hispanic applied linguistics* (pp. 275–292). Routledge.

Lemke, J. L. (1993). *Talking science: Language, learning, and values* (2. print). Ablex Publ.

Levelt, W. J. M. (Ed.). (1993). *Lexical access in speech production*. Blackwell.

Levelt, W. J. M. (1999). Models of word production. *Trends in Cognitive Sciences*, *3*(6), 223–232. https://doi.org/10.1016/S1364-6613(99)01319-4.

Li, J., & Schmitt, N. (2009). The acquisition of lexical phrases in academic writing: A longitudinal case study. *Journal of Second Language Writing*, *18*(2), 85–102. https://doi.org/10.1016/j.jslw.2009.02.001.

Libben, G. (2017). The quantum metaphor and the organization of words in the mind. *Journal of Cultural Cognitive Science*, *1*(1), 49–55. https://doi.org/10.1007/s41809-017-0003-5.

Liew, E. M. (1996). Developmental interdependence hypothesis revisited in the Brunei classroom. *Journal of Multilingual and Multicultural Development*, *17*(2–4), 195–204. https://doi.org/10.1080/01434639608666271.

Lin, A. M. Y. (2010). Curriculum: Foreign language learning. In *International encyclopedia of education* (pp. 428–434). Elsevier. https://doi.org/10.1016/B978-0-08-044894-7.00082-8.

Linneweber-Lammerskitten, H. (2010). Items for a description of linguistic competence in the language of schooling necessary for learning/teaching mathematics (in secondary education). In *Language and school subjects: Linguistic dimensions of knowledge building in school curricula* (Vol. 4). Council of Europe. https://rm.coe.int/16806adb7e.

Lippi-Green, R. (2012). *English with an Accent: Language, ideology, and discrimination in the United States* (2.ª ed.). Routledge. https://doi.org/10.4324/9780203348802.

Lippitz, W. (1983). The child's understanding of time. *Phenomenology + Pedagogy*, 172–180. https://doi.org/10.29173/pandp14873.

Lledó, E. (2011). *Lenguaje e historia*. Dykinson.

Llinares, A., & Evnitskaya, N. (2021). Classroom interaction in CLIL programs: Offering opportunities or fostering inequalities? *TESOL Quarterly*, *55*(2), 366–397. https://doi.org/10.1002/tesq.607.

Llinares, A., & Morton, T. (2010). Historical explanations as situated practice in content and language integrated learning. *Classroom Discourse*, *1*(1), 46–65. https://doi.org/10.1080/19463011003750681.

Llinares, A., Morton, T., & Whittaker, R. (2012). *The roles of language in CLIL*. Cambridge University Press.

Llinares, A., & Nikula, T. (2023). CLIL students' production of cognitive discourse functions: Comparing Finnish and Spanish contexts. *Language and Education*, 1–20. https://doi.org/10.1080/09500782.2023.2211049.

Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In *Handbook of second language acquisition* (pp. 413–468). Elsevier. https://doi.org/10.1016/B978-012589042-7/50015-3.

Lorenzo, F. (2007). An analytical framework of language integration in L2 content-based courses: The European dimension. *Language and Education*, *21*(6), 502–514. https://doi.org/10.2167/le708.0.

Lorenzo, F. (2008). Instructional discourse in bilingual settings. An empirical study of linguistic. Adjustments in content and language integrated learning. *Language Learning Journal*, *36*(1), 21–33. https://doi.org/10.1080/09571730801988470.

Lorenzo, F. (2010). Communication linguistics: The genre-based multilingual curriculum. *Revista signos*, *43*(74), 391–410. https://doi.org/10.4067/S0718-09342010000500001.

Lorenzo, F. (2013). Genre-based curricula: Multilingual academic literacy in content and language integrated learning. *International Journal of Bilingual Education and Bilingualism*, *16*(3), 375–388. https://doi.org/10.1080/13670050.2013.777391.

Lorenzo, F. (2016). Communicative language competence: Strategies for reading literacy enhancement in PISA tests. *Revista de Educación*, *374*, 141–158. https://doi.org/10.4438/1988-592X-RE-2016-374-329.

Lorenzo, F. (2017). Historical literacy in bilingual settings: Cognitive academic language in CLIL history narratives. *Linguistics and Education*, *37*, 32–41. https://doi.org/10.1016/j.linged.2016.11.002.

Lorenzo, F., Cvikić, L., Llinares, A., de Boer, M., Adadan, E., Arias-Hermoso, R., Bagalová, D., Ćaleta, M., Demirkol Orak, S., Evnitskaya, N., Glasnović Gracin, D., Granados, A., Guzmán-Alcón, I., Kasprzak, M., Lehesvuori, S., Miloshevska, L., Özdemir, H., Piacentini, V., del Pozo, E., … Ting, T. (2024). *Assessing disciplinary literacy with CEFR descriptors: History, Mathematics and Science* [Application/pdf]. CLIL Network for Languages in Education – European Union. https://phaidra.univie.ac.at/o:2082900.

Lorenzo, F., & Dalton-Puffer, C. (2016). 2. Historical Literacy in CLIL: Telling the past in a second language. In T. Nikula, E. Dafouz, P. Moore, & U. Smit (Eds.), *Conceptualising integration in CLIL and multilingual education* (pp. 55–72). Multilingual Matters. https://doi.org/10.21832/9781783096145-006.

Lorenzo, F., Granados, A., & Ávila, I. (2019). The development of cognitive academic language proficiency in multilingual education: Evidence of a longitudinal study on the language of history. *Journal of English for Academic Purposes*, *41*, 100767. https://doi.org/10.1016/j.jeap.2019.06.010.

Lorenzo, F., Granados, A., & Rico, N. (2021). Equity in bilingual education: Socioeconomic status and content and language integrated learning in monolingual Southern Europe. *Applied Linguistics*, *42*(3), 393–413. https://doi.org/10.1093/applin/amaa037.

Lorenzo, F., & Meyer, O. (2017). Languages of schooling: Explorations into disciplinary literacies: an Introduction. *European Journal of Applied Linguistics*, *5*(2), 153–156. https://doi.org/10.1515/eujal-2017-0025.

Lorenzo, F., & Meyer, O. (2018). Languages of Schooling: Language competence and educational success. *European Journal of Applied Linguistics*, *6*(1), 1–3. https://doi.org/10.1515/eujal-2017-0033.

Lorenzo, F., & Rodríguez, L. (2014). Onset and expansion of L2 cognitive academic language proficiency in bilingual settings: CALP in CLIL. *System*, *47*, 64–72. https://doi.org/10.1016/j.system.2014.09.016.

Low, D. E. (2017). Not to be «Destoried»: How an academically marginalized student employs comics and multimodal authorship to claim a counter-identity. *The Journal of Literature, Literacy, and the Arts, Research Strand*, *4*(2), 6–56.

Lozano Hernández, J. (2015). *El discurso histórico*. Sequitur.

Lu, X. (2010). Automatic analysis of syntactic complexity in second language writing. *International Journal of Corpus Linguistics*, *15*(4), 474–496. https://doi.org/10.1075/ijcl.15.4.02lu.

Lucchini, S. (2009). Semilingualism: A concept to be revived for a new linguistic policy? In B. Cornillie, J. Lambert, P. Swiggers, & Societas Linguistica Europaea (Eds.), *Linguistic identities, language shift and language policy in Europe* (pp. 61–71). Peeters.

Lui, P. P., & Quezada, L. (2019). Associations between microaggression and adjustment outcomes: A meta-analytic and narrative review. *Psychological Bulletin*, *145*(1), 45–78. https://doi.org/10.1037/bul0000172.

MacSwan, J. (2000). The threshold hypothesis, semilingualism, and other contributions to a deficit view of linguistic minorities. *Hispanic Journal of Behavioral Sciences*, *22*(1), 3–45. https://doi.org/10.1177/0739986300221001.

MacSwan, J., & Rolstad, K. (2003). Linguistic diversity, schooling, and social class: Rethinking our conception of language proficiency in language minority education. In C. B. Paulston & G. R. Tucker (Eds.), *Sociolinguistics: The essential readings* (pp. 329–340). Wiley-Blackwell.

Malvern, D., Richards, B. J., Chipere, N., & Duran, P. (2004). *Lexical diversity and language development: Quantification and assessment*. Palgrave Macmillan.

Margutti, P. (2010). On designedly incomplete utterances: What counts as learning for teachers and students in primary classroom Interaction. *Research on Language & Social Interaction*, *43*(4), 315–345. https://doi.org/10.1080/08351813.2010.497629.

Martin, J., Maton, K., & Matruglio, E. (2010). Historical cosmologies: Epistemology and axiology in Australian secondary school history discourse. *Revista signos*, *43*(74), 433–463. https://doi.org/10.4067/S0718-09342010000500003.

Martin, J. R., & Rose, D. (2003). *Working with discourse: Meaning beyond the clause*. Continuum.

Martin, J. R., & White, P. R. R. (2005). *The language of evaluation*. Palgrave Macmillan UK. https://doi.org/10.1057/9780230511910.

Martínez, T. (2016, octubre 27). Academia, love me back. *Tiffany Martínez: Words & art from an optimist*. https://vivatiffany.wordpress.com/2016/10/27/academia-love-me-back/.

Mazgutova, D., & Kormos, J. (2015). Syntactic and lexical development in an intensive English for Academic Purposes Programme. *Journal of Second Language Writing*, *29*, 3–15. https://doi.org/10.1016/j.jslw.2015.06.004.

McCabe, A. (2021). *A functional linguistic perspective on developing language*. Routledge, Taylor & Francis Group.

McCarthy, P. M., & Jarvis, S. (2010). MTLD, vocd-D, and HD-D: A validation study of sophisticated approaches to lexical diversity assessment. *Behavior Research Methods*, *42*(2), 381–392. https://doi.org/10.3758/BRM.42.2.381.

McCawley, J. D. (1998). *The syntactic phenomena of English* (2nd ed.). University of Chicago Press.

McDonald, S. A., & Shillcock, R. C. (2001). Rethinking the word frequency effect: The neglected role of distributional information in lexical processing. *Language and Speech*, *44*(3), 295–322. https://doi.org/10.1177/00238309010440030101.

McNamara, D. S., Crossley, S. A., & McCarthy, P. M. (2010). Linguistic features of writing quality. *Written Communication*, *27*(1), 57–86. https://doi.org/10.1177/0741088309351547.

McNamara, D. S., Crossley, S. A., & Roscoe, R. (2013). Natural language processing in an intelligent writing strategy tutoring system. *Behavior Research Methods*, *45*(2), 499–515. https://doi.org/10.3758/s13428-012-0258-1.

McNamara, D. S., Graesser, A. C., McCarthy, P. M., & Cai, Z. (2014). *Automated evaluation of text and discourse with Coh-Metrix* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511894664.

De Mejía, A.-M. (2002). *Power, prestige and bilingualism: International perspectives on elite bilingual education*. Multilingual Matters.

Melchers, G., Shaw, P., & Sundkvist, P. (2019). *World Englishes* (3.a ed.). Routledge. https://doi.org/10.4324/9781351042581.

Menken, K., & Kleyn, T. (2010). The long-term impact of subtractive schooling in the educational experiences of secondary English language learners. *International Journal of Bilingual Education and Bilingualism*, *13*(4), 399–417. https://doi.org/10.1080/13670050903370143.

Mercer, N. (2000). *Words and minds: How we use language to think together*. Routledge.

Mesa, M. C. (2000). *Motivación hacia el aprendizaje y estilos atributivos sobre las causas de éxito/fracaso escolar en un contexto multicultural*. Universidad de Granada.

Miller, J. L. (2011). *Accented America: The cultural politics of multilingual modernism*. Oxford University Press.

Moe, E., Härmälä, M., Kristmanson, P. L., Pascoal, J., & Ramonienė, M. (2015). *Language skills for successful subject learning. CEFR-linked descriptors for mathematics and history/civics*. ECML. Council of Europe.

Mohan, B., & Slater, T. (2005). A functional perspective on the critical 'theory/practice' relation in teaching language and science. *Linguistics and Education*, *16*(2), 151–172. https://doi.org/10.1016/j.linged.2006.01.008.

Morgan, G. (2000). Discourse cohesion in sign and speech. *International Journal of Bilingualism*, *4*(3), 279–300. https://doi.org/10.1177/13670069000040030101.

Morin, E. (1972). Avant-propos – L'événement. *Communications*, *18*, 3–5.

Moschkovich, J. N. (2015). Academic literacy in mathematics for English learners. *The Journal of Mathematical Behavior*, *40*, 43–62. https://doi.org/10.1016/j.jmathb.2015.01.005.

Moss, G. (2009). The politics of literacy in the context of large-scale education reform. *Research Papers in Education*, *24*(2), 155–174. https://doi.org/10.1080/02671520902867093.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *PIRLS 2006 International report: IEA's progress in international reading literacy study in primary schools in 40 countries*. TIMSS and PIRLS International Study Center, Lynch School of Education, Boston College.

Mullis, I., Von Davier, M., Foy, P., Fishbein, B., Reynolds, K., & Wry, E. (2023). *PIRLS 2021 international results in reading*. TIMSS & PIRLS International Study Center. https://doi.org/10.6017/lse.tpisc.tr2103.kb5342.

Musumeci, D. (1996). Teacher-learner negotiation in content-based instruction: Communication at cross-purposes? *Applied Linguistics*, *17*(3), 286–325. https://doi.org/10.1093/applin/17.3.286.

Myers-Scotton, C. (1997). *Duelling languages: Grammatical structure in codeswitching (Repr)*. Clarendon.

Myers-Scotton, C. (2002). *Contact linguistics*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198299530.001.0001.

Myhill, D. (2006). Talk, talk, talk: Teaching and learning in whole class discourse. *Research Papers in Education*, *21*(1), 19–41. https://doi.org/10.1080/02671520500445425.

Myhill, D. (2008). Towards a linguistic model of sentence development in writing. *Language and Education*, *22*(5), 271–288. https://doi.org/10.1080/09500780802152655.

Nashaat-Sobhy, N., & Llinares, A. (2023). CLIL students' definitions of historical terms. *International Journal of Bilingual Education and Bilingualism*, *26*(3), 331–344. https://doi.org/10.1080/13670050.2020.1798868.

Nassaji, H., & Wells, G. (2000). What's the use of «triadic dialogue»?: An investigation of teacher-student interaction. *Applied Linguistics*, *21*(3), 376–406. https://doi.org/10.1093/applin/21.3.376.

Nation, I. S. P. (2006). *Learning vocabulary in another language* (8. print). Cambridge University Press.

Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press.

Nation, I. S. P. & Teachers of English to Speakers of Other Languages (Eds.). (1994). *New ways in teaching vocabulary*. Teachers of English to Speakers of Other Languages.

Nikula, T., & Moore, P. (2019). Exploring translanguaging in CLIL. *International Journal of Bilingual Education and Bilingualism*, *22*(2), 237–249. https://doi.org/10.1080/13670050.2016.1254151.

Nokes, J. D. (2013). *Building students' historical literacies: Learning to read and reason with historical texts and evidence* (2nd ed.). Routledge.

Norris, J. M., & Ortega, L. (2009). Towards an organic approach to investigating CAF in instructed SLA: The case of complexity. *Applied Linguistics*, *30*(4), 555–578. https://doi.org/10.1093/applin/amp044.

Obler, L. K., & Gjerlow, K. (1999). *Language and the brain*. Cambridge University Press.

O'Donnell, M. (2008). Demonstration of the UAM CorpusTool for text and image annotation. *Proceedings of the 46th Annual Meeting of the Association for*

*Computational Linguistics on Human Language Technologies Demo Session – HLT '08*, 13–16. https://doi.org/10.3115/1564144.1564148.
O'Dowd, E. (2012). The development of linguistic complexity: A functional continuum. *Language Teaching*, *45*(3), 329–346. https://doi.org/10.1017/S0261444810000510.
OECD. (2011). *Lessons from PISA for the United States*. OECD. https://doi.org/10.1787/9789264096660-en.
OECD. (2013). *OECD skills outlook 2013: First results from the survey of adult skills*. OECD Publishing. https://doi.org/10.1787/9789264204256-en.
OECD. (2021a). *21st-Century readers: Developing literacy skills in a digital world*. OECD.
OECD. (2021b). *OECD skills outlook 2021: Learning for life*. OECD. https://doi.org/10.1787/0ae365b4-en.
Oevermann, U. (1973). *Sprache und soziale Herkunft: Ein Beitrag zur Analyse schichtenspezifischer Sozialisationsprozesse und ihrer Bedeutung für den Schulerfolg* (3. Aufl., 21.-27. Tsd). Suhrkamp.
O'Grady, W. (2018). 3. Syntax and acquisition: The emergentist story. In C. Wright, T. Piske, & M. Young-Scholten (Eds.), *Mind Matters in SLA* (pp. 35–51). Multilingual Matters. https://doi.org/10.21832/9781788921626-005.
O'Halloran, K. L. (2015). The language of learning mathematics: A multimodal perspective. *The Journal of Mathematical Behavior*, *40*, 63–74. https://doi.org/10.1016/j.jmathb.2014.09.002.
Ohlrogge, A. (2009). Formulaic expressions in intermediate EFL writing assessment. In R. Corrigan, E. A. Moravcsik, H. Ouali, & K. Wheatley (Eds.), *Typological studies in language* (Vol. 83, p. 375). John Benjamins Publishing Company. https://doi.org/10.1075/tsl.83.07ohl.
Olinghouse, N. G., & Wilson, J. (2013). The relationship between vocabulary and writing quality in three genres. *Reading and Writing*, *26*(1), 45–65. https://doi.org/10.1007/s11145-012-9392-5.
Operstein, N. (2017). The syntactic structures of Lingua Franca in the Dictionnaire de la langue franque. *Italian Journal of Linguistics*, *29*(2), 87–130. https://doi.org/10.26346/1120-2726-111.
Ordine, N. (2023). *George Steiner, el huésped incómodo: Entrevista póstuma y otras conversaciones* (J. Bayod, Trad.). Acantilado.
Orellana, M. F., Ek, L. D., & Hernández, A. (1999). Bilingual education in an immigrant community: Proposition 227 in California. *International Journal of Bilingual Education and Bilingualism*, *2*(2), 114–130. https://doi.org/10.1080/13670059908667683.
Ortega, L. (2020). The study of heritage language development from a bilingualism and social justice perspective. *Language Learning*, *70*(S1), 15–53. https://doi.org/10.1111/lang.12347.
Orwell, G. (1949). *Nineteen eighty-four*. Harcourt, Brace & Co.
Oteíza, T. (2009). Solidaridad ideológica en el discurso de la historia: Tensión entre orientaciones monoglósicas y heteroglósicas. *Revista Signos*, *42*(70). https://doi.org/10.4067/S0718-09342009000200004.

Otheguy, R., & Zentella, A. C. (2012). *Spanish in New York: Language contact, dialectal leveling, and structural continuity*. Oxford University Press.

Padró, L., & Stanilovsky, E. (2012). FreeLing 3.0: Towards wider multilinguality. In N. Calzolari, K. Choukri, T. Declerck, M. U. Doğan, B. Maegaard, J. Mariani, A. Moreno, J. Odijk, & S. Piperidis (Eds.), *Proceedings of the Eighth International Conference on Language Resources and Evaluation (LREC'12)* (pp. 2473–2479). European Language Resources Association (ELRA). www.lrec-conf.org/proceedings/lrec2012/pdf/430_Paper.pdf.

Pallotti, G. (2015). A simple view of linguistic complexity. *Second Language Research*, *31*(1), 117–134. https://doi.org/10.1177/0267658314536435.

Parkinson, J., & Musgrave, J. (2014). Development of noun phrase complexity in the writing of English for Academic Purposes students. *Journal of English for Academic Purposes*, *14*, 48–59. https://doi.org/10.1016/j.jeap.2013.12.001.

Parodi, G. (2006). El Grial: Computational interface for the annotation and interrogation of corpora in Spanish. *RLA. Revista de lingüística teórica y aplicada*, *44*(2), 91–115. https://doi.org/10.4067/S0718-48832006000200007.

Pascual y Cabo, D., & De La Rosa-Prada, J. (2015). Understanding the Spanish heritage language speaker/learner. *EuroAmerican Journal of Applied Linguistics and Languages*, *2*(2), 1–10. https://doi.org/10.21283/2376905X.3.67.

Pavlenko, A. (2009). Conceptual representation in the bilingual lexicon and second language vocabulary learning. In A. Pavlenko (Ed.), *The bilingual mental lexicon: Interdisciplinary approaches* (pp. 125–160). Multilingual Matters.

Pearl, J., & Mackenzie, D. (2019). *The book of why*. Penguin. www.penguin.co.uk/books/289825/the-book-of-why-by-judea-pearl-and-dana-mackenzie/9780141982410.

Pennycook, A. (2004). Performativity and language studies. *Critical Inquiry in Language Studies*, *1*(1), 1–19. https://doi.org/10.1207/s15427595cils0101_1.

Pérez-Paredes, P., & Díez-Bedmar, M. B. (2012). The use of intensifying adverbs in learner writing. In Y. Tono, Y. Kawaguchi, & M. Minegishi (Eds.), *Tokyo University of Foreign Studies* (Vol. 4, pp. 105–124). John Benjamins Publishing Company. https://doi.org/10.1075/tufs.4.11per.

Pérez, M. Á., Lorenzo, F., & Pavón, V. (2016). European bilingual models beyond "lingua franca": Key findings from CLIL French programs. *Language Policy*, *15*(4), 485–504. https://doi.org/10.1007/s10993-015-9386-7.

Peters, M. A. (2008). Academic writing, genres and philosophy. *Educational Philosophy and Theory*, *40*(7), 819–831. https://doi.org/10.1111/j.1469-5812.2008.00511.x.

Pew Research Center. (s. f.). *Hispanics/Latinos & Language – Research and data*. Recuperado 19 de enero de 2024, de www.pewresearch.org/topic/race-ethnicity/racial-ethnic-groups/hispanics-latinos/hispanic-latino-demographics/hispanics-latinos-and-language/.

Pieper, I. (2010). Items for a description of linguistic competence in the language of schooling necessary for learning/teaching literature (end of compulsory education). In *Language and school subjects: Linguistic dimensions of knowledge building in school curricula* (Vol. 3). Council of Europe.

Piketty, T. (2014). *Capital in the twenty-first century*. The Belknap Press of Harvard University Press.

Piller, I. (2016). *Linguistic diversity and social justice: An introduction to applied sociolinguistics*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199937240.001.0001.

Pinker, S. (1995). *The language instinct: The new science of language and mind*. Penguin.

Pinker, S. (2007). *The stuff of thought: Language as a window into human nature*. Viking.

Polio, C. (2012). The relevance of second language acquisition theory to the written error correction debate. *Journal of Second Language Writing*, *21*(4), 375–389. https://doi.org/10.1016/j.jslw.2012.09.004.

Politzer, R. L. (1981). *Social class and bilingual education: Issues and contradictions*. California State University, Los Angeles. Evaluation, Dissemination and Assessment Center.

Poteau, C. E. (2019). Intercultural competence development via service-learning in Spanish for the professions. *Revista Signos*, *52*(101), 1013–1032. https://doi.org/10.4067/S0718-09342019000301013.

Potowski, K. (2018a). Spanish as a heritage/minority language. In K. Potowski (Ed.), *The Routledge handbook of Spanish as a heritage language* (1.ª ed., pp. 1–14). Routledge. https://doi.org/10.4324/9781315735139-1.

Potowski, K. (Ed.). (2018b). *The Routledge handbook of Spanish as a heritage language*. Routledge. https://doi.org/10.4324/9781315735139.

Poulisse, N., & Bongaerts, T. (1994). First language use in second language production. *Applied Linguistics*, *15*(1), 36–57. https://doi.org/10.1093/applin/15.1.36.

Poyatos, F. (2002). *Nonverbal communication across disciplines*. J. Benjamins Pub. Co.

Prediger, S., Wilhelm, N., Büchter, A., Gürsoy, E., & Benholz, C. (2018). Language proficiency and mathematics achievement: Empirical study of language-induced obstacles in a high stakes test, the central exam ZP10. *Journal Für Mathematik-Didaktik*, *39*(S1), 1–26. https://doi.org/10.1007/s13138-018-0126-3.

Preston, D. R. (1989). *Sociolinguistics and second language acquisition*. B. Blackwell.

Qin, W., & Uccelli, P. (2016). Same language, different functions: A cross-genre analysis of Chinese EFL learners' writing performance. *Journal of Second Language Writing*, *33*, 3–17. https://doi.org/10.1016/j.jslw.2016.06.001.

Qualifications and Curriculum Authority. (1999). *Technical accuracy in writing in GCSE English: Research findings*. Qualifications and Curriculum Authority.

Quirk, R., Greenbaum, S., Leech, G. N., & Svartvik, J. (Eds.). (1985). *A comprehensive grammar of the English language* (11. impr). Longman.

Quispesaravia, A., Perez, W., Sobrevilla Cabezudo, M., & Alva-Manchego, F. (2016). Coh-Metrix-Esp: A complexity analysis tool for documents written in Spanish. In N. Calzolari, K. Choukri, T. Declerck, S. Goggi, M. Grobelnik, B. Maegaard, J. Mariani, H. Mazo, A. Moreno, J. Odijk, & S. Piperidis (Eds.), *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC'16)* (pp. 4694–4698). European Language Resources Association (ELRA). https://aclanthology.org/L16-1745.

Ravid, D. (2005). Emergence of linguistic complexity in later language development: Evidence from expository text construction. In D. D. Ravid & H. B.-Z. Shyldkrot (Eds.), *Perspectives on language and language development* (pp. 337–355). Springer US. https://doi.org/10.1007/1-4020-7911-7_25.

Ravid, D., & Berman, R. A. (2010). Developing noun phrase complexity at school age: A text-embedded cross-linguistic analysis. *First Language*, *30*(1), 3–26. https://doi.org/10.1177/0142723709350531.

Ribeiro De Mello, H. (2014). Methodological issues for spontaneous speech corpora compilation: The case of C-ORAL-BRASIL. In T. Raso & H. Mello (Eds.), *Studies in corpus linguistics* (Vol. 61, pp. 27–68). John Benjamins Publishing Company. https://doi.org/10.1075/scl.61.01mel.

Ricoeur, P. (2016). *Hermeneutics and the human sciences: Essays on language, action and interpretation* (J. B. Thompson, Ed.; 1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781316534984.

Rimmon-Kenan, S. (2002). *Narrative fiction: Contemporary poetics*. Routledge.

Robinson, P., & Gilabert, R. (2007). Task complexity, the cognition hypothesis and second language learning and performance. *IRAL – International Review of Applied Linguistics in Language Teaching*, *45*(3). https://doi.org/10.1515/iral.2007.007.

Rodriguez, E., & Brandl, A. (2019). Knowledge of tense, aspect and mood in heritage language speakers: The case of hybrid Spanish for business courses. *Proceedings of the Florida Linguistics Yearly Meeting*, *6*(1), 64–75.

Rodriguez, R. (2004). *Hunger of memory: The education of Richard Rodriguez; an autobiography* (Bantam mass market reprint, 34. print). Bantam Books.

Rodriguez, Y. (2019). Spanish-Guarani diglossia in colonial Paraguay: A language undertaking. In B. Weber (Ed.), *The linguistic heritage of colonial practice* (pp. 153–168). De Gruyter. https://doi.org/10.1515/9783110623710-008.

Rolstad, K. (2017). Second language instructional competence. *International Journal of Bilingual Education and Bilingualism*, *20*(5), 497–509. https://doi.org/10.1080/13670050.2015.1057101.

Rolstad, K., Mahoney, K., & Glass, G. V. (2005). The big picture: A meta-analysis of program effectiveness research on English language learners. *Educational Policy*, *19*(4), 572–594. https://doi.org/10.1177/0895904805278067.

Rose, D., & Martin, J. R. (2012). *Learning to write, reading to learn: Genre, knowledge and pedagogy in the Sydney school*. Equinox Pub.

Roth, S. (2019). Linguistic capital and inequality in aid relations. *Sociological Research Online*, *24*(1), 38–54. https://doi.org/10.1177/1360780418803958.

Saito, K., Webb, S., Trofimovich, P., & Isaacs, T. (2016). Lexical profiles of comprehensible second language speech. *Studies in Second Language Acquisition*, *38*(4), 677–701. https://doi.org/10.1017/S0272263115000297.

Salgado-Robles, F., & Lamboy, E. M. (2019). The learning and teaching of Spanish as a heritage language through community service-learning in New York City. *Revista Signos*, *52*(101), 1055–1075. https://doi.org/10.4067/S0718-09342019000301055.

Salgado-Robles, F., & Lorenzo, F. (2025). Spanish for specific purposes for heritage learners. In B. Lafford, L. Sánchez-López, A. Ferreira, & B. Arnó Macià

(Eds.), *The Routledge handbook on Spanish for specific purposes* (pp. 317–331). Routledge. https://doi.org/10.4324/9781003057604-26.

Salsbury, T., Crossley, S. A., & McNamara, D. S. (2011). Psycholinguistic word information in second language oral discourse. *Second Language Research*, *27*(3), 343–360. https://doi.org/10.1177/0267658310395851.

Sánchez Fernández, S. (2010). *El abandono escolar temprano en las ciudades de Ceuta y Melilla*. Ministerio de Educación.

Sandbank, A. (2001). On the interplay of genre and writing conventions in early text writing. In L. Tolchinsky (Ed.), *Developmental aspects in learning to write* (Vol. 8, pp. 55–75). Springer Netherlands. https://doi.org/10.1007/978-94-010-0734-4_4.

Sanders, T., & Pander Maat, H. (2006). Cohesion and coherence: Linguistic approaches. In *Encyclopedia of language & linguistics* (pp. 591–595). Elsevier. https://doi.org/10.1016/B0-08-044854-2/00497-1.

Santos, V. D. O., Verspoor, M. H., & Nerbonne, J. (2012). Identifying important factors in essay grading using machine learning. In D. Tsagiri, S. Papdima-Sophocleus, & S. Ioannu-Georgiou (Eds.), *International experiences in language testing and assessment: Selected papers in memory of Pavlos Pavlou* (pp. 259–309). Peter Lang. www.semanticscholar.org/paper/Identifying-Important-Factors-in-Essay-Grading-Santos-Verspoor/5a7a9a347b2d17092df252ae1ff378341d50fd74.

Saukkonen, P. (2003). How to define and describe genres and styles. *Folia Linguistica*, *37*(3–4). https://doi.org/10.1515/flin.2003.37.3-4.399.

Schegloff, E. A. (1987). Some sources of misunderstanding in talk-in-interaction. *Linguistics*, *25*(1). https://doi.org/10.1515/ling.1987.25.1.201.

Schegloff, E. A. (2000). Overlapping talk and the organization of turn-taking for conversation. *Language in Society*, *29*(1), 1–63. https://doi.org/10.1017/S0047404500001019.

Schiffrin, D., Tannen, D., & Hamilton, H. E. (Eds.). (2005). *The handbook of discourse analysis* (1.ª ed.). Wiley. https://doi.org/10.1002/9780470753460.

Schleppegrell, M. (2004). *The language of schooling: A functional linguistics perspective*. Lawrence Erlbaum Associates.

Schleppegrell, M., & De Oliveira, L. C. (2006). An integrated language and content approach for history teachers. *Journal of English for Academic Purposes*, *5*(4), 254–268. https://doi.org/10.1016/j.jeap.2006.08.003.

Schleppegrell, M. J. (2009). Language and literacy: Functional approaches. *Language in Society*, *38*(2), 273–274. https://doi.org/10.1017/S0047404509090411.

Schmitt, N. (2014). Size and depth of vocabulary knowledge: What the research shows. *Language Learning*, *64*(4), 913–951. https://doi.org/10.1111/lang.12077.

Schoonen, R., Snellings, P., Stevenson, M., & Gelderen, A. V. (2009). Chapter 3. Towards a blueprint of the foreign language writer: The linguistic and cognitive demands of foreign language writing. In R. Manchón (Ed.), *Writing in foreign language contexts* (pp. 77–101). Multilingual Matters. https://doi.org/10.21832/9781847691859-007.

Seedhouse, P. (2004). Series editor's foreword. *Language Learning*, *54*(S1). https://doi.org/10.1111/j.1467-9922.2004.00266.x.

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review*, *78*(1), 40–59. https://doi.org/10.17763/haer.78.1.v62444321p602101.

Shih, A., & Ma, M. (2012). Profiling EFL learners' writing performance by syntactic complexity: A corpus-based study. In Y. Tono, Y. Kawaguchi, & M. Minegishi (Eds.), *Tokyo University of Foreign Studies* (Vol. 4, pp. 125–138). John Benjamins Publishing Company. https://doi.org/10.1075/tufs.4.12shi.

Shin, J., & Christianson, K. (2012). Structural priming and second language learning. *Language Learning*, *62*(3), 931–964. https://doi.org/10.1111/j.1467-9922.2011.00657.x.

Simpson, J. (Ed.). (2013). *The Routledge handbook of applied linguistics* (1. publ. in paperback). Routledge.

Siyanova-Chanturia, A., & Pellicer-Sanchez, A. (Eds.). (2018). *Understanding formulaic language: A second language acquisition perspective*. Routledge.

Skehan, P. (1998). *A cognitive approach to language learning* (1. publ., 6. impr). Oxford University Press.

Skehan, P. (2003). Task-based instruction. *Language Teaching*, *36*(1), 1–14. https://doi.org/10.1017/S026144480200188X.

Skutnabb-Kangas, T. (1981). *Bilingualism or not: The education of minorities*. Multilingual Matters.

Slavin, R. E., & Cheung, A. (2005). A synthesis of research on language of reading instruction for English language learners. *Review of Educational Research*, *75*(2), 247–284. https://doi.org/10.3102/00346543075002247.

Smith, M. S., Truscott, J., & Hawkins, R. (2012). Explaining change in transition grammars. In J. Herschensohn & M. Young-Scholten (Eds.), *The Cambridge handbook of second language acquisition* (1.ª ed., pp. 560–580). Cambridge University Press. https://doi.org/10.1017/CBO9781139051729.033.

Snow, C. E. (1977). The development of conversation between mothers and babies. *Journal of Child Language*, *4*(1), 1–22. https://doi.org/10.1017/S0305000900000453.

Snow, C. E., & Uccelli, P. (2009). The challenge of academic language. In D. R. Olson & N. Torrance (Eds.), *The Cambridge handbook of literacy* (pp. 112–133). Cambridge University Press. https://doi.org/10.1017/CBO9780511609664.008.

Spöttl, C., & McCarthy, M. (2004). Comparing knowledge of formulaic sequences across L1, L2, L3, and L4. In N. Schmitt (Ed.), *Language learning & language teaching* (Vol. 9, pp. 191–225). John Benjamins Publishing Company. https://doi.org/10.1075/lllt.9.11spo.

Staples, S., & Reppen, R. (2016). Understanding first-year L2 writing: A lexico-grammatical analysis across L1s, genres, and language ratings. *Journal of Second Language Writing*, *32*, 17–35. https://doi.org/10.1016/j.jslw.2016.02.002.

Steiner, G. (1972). *Extraterritorial: Papers on literature and the language revolution*. Faber and Faber.

Steiner, G. (2003). *Lessons of the masters*. Harvard University Press.

Stubbs, M. (1983). *Discourse analysis: The sociolinguistic analysis of natural language* (Reprinted). Basil Blackwell.

Sun, Y. (2020). Cohesion and coherence studies: Development, chaos and application. *Social Sciences*, *9*(4), 113. https://doi.org/10.11648/j.ss.20200904.15.

Swales, J. M. (2004). *Research genres: Explorations and applications* (1.ª ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781139524827.

Swan, M. (2010). Grammar. In *The Routledge handbook of applied linguistics*. Routledge. https://doi.org/10.4324/9780203835654.ch39.

Tanskanen, S.-K. (2006). *Collaborating towards coherence: Lexical cohesion in English discourse* (Vol. 146). John Benjamins Publishing Company. https://doi.org/10.1075/pbns.146.

Taylor, C., & Marchi, A. (Eds.). (2018). *Corpus approaches to discourse: A critical review*. Routledge.

Tedick, D. J., & Lyster, R. (2020). *Scaffolding language development in immersion and dual language classrooms*. Routledge, Taylor & Francis Group.

The "Five Graces Group", Beckner, C., Blythe, R., Bybee, J., Christiansen, M. H., Croft, W., Ellis, N. C., Holland, J., Ke, J., Larsen-Freeman, D., & Schoenemann, T. (2009). Language is a complex adaptive system: Position paper. *Language Learning*, *59*(s1), 1–26. https://doi.org/10.1111/j.1467-9922.2009.00533.x.

Tolchinsky, L. (2004). The nature and scope of later language development. In R. A. Berman (Ed.), *Trends in language acquisition research* (Vol. 3, pp. 233–248). John Benjamins Publishing Company. https://doi.org/10.1075/tilar.3.15tol.

Tomasello, M. (2005). *Constructing a language: A usage-based theory of language acquisition* (1. Harvard University Press paperback ed). Harvard University Press.

Torras, M. R., & Celaya, M. L. (2001). Age-related differences in the development of written production. An empirical study of EFL school learners'. *International Journal of English Studies*, *1*(2), 103–126.

Treffers-Daller, J., Parslow, P., & Williams, S. (2018). Back to basics: How measures of lexical diversity can help discriminate between CEFR Levels. *Applied Linguistics*, *39*(3), 302–327. https://doi.org/10.1093/applin/amv060.

Truscott, J. (1999). The case for "The Case Against Grammar Correction in L2 Writing Classes": A response to Ferris. *Journal of Second Language Writing*, *8*(2), 111–122. https://doi.org/10.1016/S1060-3743(99)80124-6.

Turque, B. (2011, septiembre 7). Can D.C. keep middle schoolers from 'teetering on the ninth-grade cliff'? *The Washington Post*. www.washingtonpost.com/blogs/dc-schools-insider/post/can-dc-keep-middle-schoolers-from-teetering-on-the-ninth-grade-cliff/2011/09/07/gIQAvASbAK_blog.html.

Uccelli, P. (2023). Midadolescents' language learning at school: Toward more just and scientifically rigorous practices in research and education. *Language Learning*, *73*(S2), 182–221. https://doi.org/10.1111/lang.12558.

Uccelli, P., Dobbs, C. L., & Scott, J. (2013). Mastering academic language: Organization and stance in the persuasive writing of High School students. *Written Communication*, *30*(1), 36–62. https://doi.org/10.1177/0741088312469013.

Vainikka, A., & Young-Scholten, M. (1994). Direct access to X'-Theory: Evidence from Korean and Turkish adults learning German. In T. Hoekstra & B. D. Schwartz

(Eds.), *Language acquisition and language disorders* (Vol. 8, p. 265). John Benjamins Publishing Company. https://doi.org/10.1075/lald.8.13vai.

Vajjala, S. (2018). Automated assessment of non-native learner essays: Investigating the role of linguistic features. *International Journal of Artificial Intelligence in Education*, *28*(1), 79–105. https://doi.org/10.1007/s40593-017-0142-3.

Valdés, G. (2001). Heritage language students: Profiles and possibilities. In J. K. Peyton, D. A. Ranard, & S. McGinnis (Eds.), *Heritage languages in America: Preserving a national resource* (pp. 37–77). Center for Applied Linguistics & Delta System.

Van Beuningen, C. (2010). Corrective feedback in L2 writing: Theoretical perspectives, empirical insights, and future directions. *International Journal of English Studies*, *10*(2), 1. https://doi.org/10.6018/ijes/2010/2/119171.

Van Dijk, T. A. (1977). *Text and context: Explorations in the semantics and pragmatics of discourse* (1st paperback ed.). Longman.

Van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. Academic Press.

Van Drie, J., Braaksma, M., & Van Boxtel, C. (2015). Writing in history: Effects of writing instruction on historical reasoning and text quality. *Journal of Writing Research*, *7*(1), 123–156. https://doi.org/10.17239/jowr-2015.07.01.06.

Van Hest, E., De Wilde, J., & Van Hoof, S. (2023). Language policy at an abortion clinic: Linguistic capital and agency in treatment decision-making. *Language Policy*, 22(2), 133–153. https://doi.org/10.1007/s10993-023-09648-5.

Van Patten, B. (2003). *From input to output: A teacher's guide to second language acquisition*. McGraw-Hill.

Vanderbeke, M., & Wilden, E. (2017). Sachfachliche Diskursfähigkeit durch fremdsprachliche affordances in bilingualen Schülerlaborprojekten. *Zeitschrift für Fremdsprachenforschung: ZFF*, *28*(1), 3–27.

Vanhove, J., Bonvin, A., Lambelet, A., & Berthele, R. (2019). Predicting human lexical richness ratings of short French, German, and Portuguese texts using text-based indices. *Journal of Writing Research*, *10*(3), 499–525. https://doi.org/10.17239/jowr-2019.10.03.04.

Venegas, R. (2006). La similitud léxico-semántica en artículos de investigación científica en español: Una aproximación desde el Análisis Semántico Latente. *Revista Signos*, *39*(60), 75–106. https://doi.org/10.4067/S0718-09342006000100004.

Verhoeven, L., Aparici, M., Cahana-Amitay, D., Van Hell, J. G., Kriz, S., & Viguié-Simon, A. (2002). Clause packaging in writing and speech: A cross-linguistic developmental analysis. *Written Language & Literacy*, *5*(2), 135–161. https://doi.org/10.1075/wll.5.2.02ver.

Verspoor, M., Lowie, W., Chan, H. P., & Vahtrick, L. (2017). Linguistic complexity in second language development: Variability and variation at advanced stages. *Recherches en didactique des langues et des cultures*, *14*(1). https://doi.org/10.4000/rdlc.1450.

Verspoor, M., Schmid, M. S., & Xu, X. (2012). A dynamic usage based perspective on L2 writing. *Journal of Second Language Writing*, *21*(3), 239–263. https://doi.org/10.1016/j.jslw.2012.03.007.

Verspoor, M., & Schmitt, N. (2012). Language and the lexicon in SLA. In P. Robinson (Ed.), *The Routledge encyclopedia of second language acquisition* (pp. 353–360). Taylor & Francis Group.

Vidakovic, I., & Barker, F. (2010). Use of words and multi-word units in skills for life writing examinations. *University of Cambridge ESOL Examinations Research Notes*, *41*, 7–14.

Villarreal, H. (1981). Reading and Spanish for native speakers. In G. Valdés, A. G. Lozano, & R. García-Moya (Eds.), *Teaching Spanish to the Hispanic bilingual: Issues, aims, and methods* (pp. 157–165). Teachers College, Columbia University.

Vollmer, H. J. (2007). *Language and communication in the learning and teaching of science in secondary schools*. Language Policy Division, Council of Europe.

Vollmer, H. J. (2010). Items for a description of linguistic competence in the language of schooling necessary for learning/teaching sciences (at the end of compulsory education). In *Language and school subjects: Linguistic dimensions of knowledge building in school curricula* (Vol. 2). Council of Europe.

Voss, J. F., & Carretero, M. (Eds.). (1998). *Learning and reasoning in history*. Woburn.

Wakabayashi, S. (2011). Generative grammar. In J. Simpson (Ed.), *The Routledge handbook of applied linguistics*. Routledge.

Webb, S. (Ed.). (2020). *The Routledge handbook of vocabulary studies*. New York.

Weber, J. (2009). Bilingual education in the 21st century: A global perspective. *Journal of Sociolinguistics*, *13*(4), 569–573. https://doi.org/10.1111/j.1467-9841.2009.00423_7.x.

Weigle, S. C. (2002). *Assessing writing* (1.a ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511732997.

Welch, K. E. (1990). *The contemporary reception of classical rhetoric: Appropriations of ancient discourse*. L. Erlbaum.

White, H. V. (1973). *Metahistory: The historical imagination in nineteenth-century Europe*. Johns Hopkins University Press.

White, H. V. (1987). *The content of the form: Narrative discourse and historical representation*. Johns Hopkins University Press.

White, H. V. (2010). *The fiction of narrative: Essays on history, literature, and theory, 1957–2007*. Johns Hopkins University Press.

Whittaker, R., & McCabe, A. (2023). Expressing evaluation across disciplines in primary and secondary CLIL writing: A longitudinal study. *International Journal of Bilingual Education and Bilingualism*, *26*(3), 345–362. https://doi.org/10.1080/13670050.2020.1798869.

Whittaker, R., O'Donnell, M., & McCabe, A. (Eds.). (2008). *Language and literacy: Functional approaches*. Continuum.

Widdowson, H. G. (1978). *Teaching language as communication*. Oxford University Press.

Wineburg, S. (1998). Reading Abraham Lincoln: An expert/expert study in the interpretation of historical texts. *Cognitive Science*, *22*(3), 319–346. https://doi.org/10.1207/s15516709cog2203_3.

Wolf, M. (2008). *Proust and the squid: The story and science of the reading brain*. Harper Perennial.

Wolfe-Quintero, K., Inagaki, S., & Kim, H.-Y. (1998). *Second language development in writing: Measures of fluency, accuracy, & complexity*. Second Language Teaching & Curriculum Center, University of Hawaii at Manoa.

Wong, W. (2005). *Input enhancement: From theory and research to the classroom*. McGraw-Hill.

Wray, A. (Ed.). (2002). *The transition to language*. Oxford University Press. https://doi.org/10.1093/oso/9780199250653.001.0001.

Wray, A. (2018). Concluding question: Why don't second language learners more proactively target formulaic sequences? In A. Siyanova-Chanturia & A. Pellicer-Sánchez (Eds.), *Understanding formulaic language* (pp. 248–269). Routledge.

Yamamoto, M. (Ed.). (2021). *Contemporary studies in bilingualism and multilingualism*. SAGE reference.

Yamashita, H., & Chang, F. (2001). "Long before short" preference in the production of a head-final language. *Cognition*, *81*(2), B45–B55. https://doi.org/10.1016/S0010-0277(01)00121-4.

Yang, W., & Sun, Y. (2012). The use of cohesive devices in argumentative writing by Chinese EFL learners at different proficiency levels. *Linguistics and Education*, *23*(1), 31–48. https://doi.org/10.1016/j.linged.2011.09.004.

Yano, Y., Long, M. H., & Ross, S. (1994). The effects of simplified and elaborated texts on foreign language reading comprehension. *Language Learning*, *44*(2), 189–219. https://doi.org/10.1111/j.1467-1770.1994.tb01100.x.

Yilmaz, K. (2007). Historical empathy and its implications for classroom practices in schools. *The History Teacher*, *40*(3), 331–337.

Yoon, H.-J. (2017). Linguistic complexity in L2 writing revisited: Issues of topic, proficiency, and construct multidimensionality. *System*, *66*, 130–141. https://doi.org/10.1016/j.system.2017.03.007.

Yu, G. (2010). Lexical diversity in writing and speaking task performances. *Applied Linguistics*, *31*(2), 236–259. https://doi.org/10.1093/applin/amp024.

Zheng, Y. (2016). The complex, dynamic development of L2 lexical use: A longitudinal study on Chinese learners of English. *System*, *56*, 40–53. https://doi.org/10.1016/j.system.2015.11.007.

Zimmerman, E. S. (2019). *Racioliteracies: Race and subjectivity in the teaching of Spanish to bilingual Latinx students*. University of Pennsylvania.

Zoltán, L. (2013). *Cohesion and writing quality: Exploring the construct of cohesion in euro examinations*. University of Pécs. http://pea.lib.pte.hu/handle/pea/15440.

Zwiers, J. (2008). *Building academic language: Essential practices for content classrooms, grades 5–12* (1st ed.). Jossey-Bass; International Reading Association.

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