



Research Article

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System networks as a resource in L2 writing education

<https://doi.org/10.1515/iral-2024-0064>

Received February 29, 2024; accepted July 9, 2024; published online August 22, 2024

Abstract: This paper argues for the value of system networks as a diagnostic tool in L2 writing education. We report on an investigation of Chinese students learning to write in English over a period of a year in Year 9 of high school, characterizing their choices in the system of MODALITY in different writing tasks over that period, and we also report on an extension of this investigation based on two additional sampling points, Year 12 of high school and Year 3 of university. Our findings indicate that even when we sample L2 texts from three different periods in education, the expansion in the use of the meaning potential embodied in the system of MODALITY is quite limited – as long as we focus on texts from one register. We have also seen from Xuan’s (2015. *A longitudinal study of Chinese high school students learning English based on systemic functional text analysis*. The Hong Kong Polytechnic University PhD thesis) study of Year 9 writing tasks from a few different registers that there was no clear sense of progression throughout the year. The results show that careful selection and ordering of texts from registers that afford learners with complementary opportunities over time to engage with and master different parts of the resources of the system of MODALITY can be recommended in L2 writing education.

Keywords: Systemic Functional Linguistics; L2 writing; MODALITY; system networks

1 Introduction

In this paper, we will report on an investigation of Chinese students learning to write in English over a period of a year in Year 9 of high school, characterizing their choices

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in the system of *MODALITY* in different writing tasks over that period, and we will also report on an extension of this investigation based on two additional sampling points, Year 12 of high school and Year 3 of university. We draw on these investigations to argue for the value of **system networks** as a **diagnostic tool** in L2 writing education.

Naturally, studies of L2 writing education depend crucially on the conception and theory of language. Our work has been guided by Systemic Functional Linguistics (SFL), as developed by M.A.K. Halliday and other linguists since the 1960s. According to SFL, language is a **resource** for making meaning – more specifically for making meaning through text in context. This resource is conceptualized as a **meaning potential**, as articulated by Halliday (1973) and by other systemic functional linguists in subsequent publications. The meaning potential represents what a speaker can mean, and it is actualized or instantiated as s/he makes choices in meaning to produce text in context. Thus texts are sequences of acts of meaning that instantiate the meaning potential. This meaning potential is modelled as a **system network** – a network of systems of two or more terms representing options in meaning (Halliday 2013).

Early language development is most insightfully conceptualized, theorized and described as **learning how to mean** in a number of ontogenetic phases: young children begin this process in the first year of life by constructing a child-tongue or protolanguage in interaction with their immediate caregivers, and, building on this experience, they begin to move into the mother tongue (or tongues) spoken around them in the second year of their lives (Halliday 1975, 2003; Painter 1984, 1999; Torr 1997).¹ This phased development has been described as a gradual expansion of the young child's meaning potential, and it has been represented by means of system networks. Successive system networks “frozen” descriptively at intervals of six weeks enable us to see how the options in meaning expanded and are, at certain points, re-arranged. In principle, the process of learning how to mean is a lifelong undertaking (cf. Matthiessen 2009; Guerra-Lyons 2021, for a longitudinal study of scholarly writing); it certainly continues as children enter institutions of formal education – primary, secondary and tertiary (for primary through secondary, see

¹ Halliday has always been critical of the metaphor of “language acquisition” that began to dominate in the second half of the 1960s and has tended to replace the earlier notion of language development. Instead, of conceptualization language development as acquisition of language “out there”, Halliday and other systemic functional linguists have emphasized that children learn how to mean in interaction with others, critically with more mature meaners. Language learning is thus a constructive process, and “learning” does not imply a conscious process of design. For a powerful critique of the notion of “language acquisition” articulated outside SFL, see Larsen-Freeman (2011, 2015). For SFL and second language development, see e.g. Halliday (1978); Hasan and Perrett (1994); Perrett (2000); Gibbons (2015); Byrnes (2019); Ryshina-Pankova (2019); and in reference to second language writing in particular: Schleppegrell & Colombi (2002); Byrnes (2013).

Christie 2012; Christie and Derewianka 2008); but it also continues in other institutional settings, including those of workplaces. Based on systemic functional studies, McCabe (2021) provides an overview of language development from early childhood to school years, also relating the findings to pedagogical considerations.

At some point during their formal education, children may be presented with the task of learning second or foreign language. If we conceive of learning a second or foreign language as learning how to mean in a “new” language, then it follows that it involves an expansion of the existing meaning learners bring to the task and that, if we have access to longitudinal data, we can investigate this process by means of system networks, studying how learners gradually construct a **multilingual meaning potential** (Bateman et al. 1999; Matthiessen 2018). In certain areas, learners may operate with the same system in their L1 and L2, but they will have to create “partitions” that are specific to the L1 or the L2 resources, as happens with the systems of TENSE and ASPECT, which constitute fundamentally different models of time, when learners move from English to Chinese or the other way around (cf. Matthiessen 2015). As L2 learners continue on their learning paths, they will gradually approximate the meaning potential of the L2 they are learning; this gradual approximation can be investigated by means of system networks. Thus multilingual system networks can support both a version of contrastive analysis for the 21st century and the charting of L2 learner paths in successive systemic profiles of their choices of options.

In this conceptual paper, we will be concerned with one particular use of system networks as a tool or resource in the investigation and practice of L2 education, more specifically L2 writing. In this educational context, system networks can be used in a variety of ways, but we will focus on them as a **diagnostic tool** allowing researchers, and hopefully teachers, to profile L2 learners’ choices in written output in order to determine if there are parts of the systemic potential that they don’t access or areas that they over-use. We will draw on a pioneering study by Gibbons and Markwick-Smith (1992). Like them, we will use Halliday’s description of the system of MODALITY in English (Halliday 1970, 2013: Chapters 4 and 10); but we will work with a longitudinal corpus of L2 writing from a top high school in China (Xuan 2015), supplemented by a sample of writing by Year 3 university students. Drawing on our discussion, we propose an innovative pathway for L2 writing education, emphasizing the importance of the system network and its informed selections of register sequences within L2 curricula.

2 Background

Sketching the background to our study, we will begin by summarizing a pioneering contribution to the investigation of L2 writing conceptualized as mastering the

meaning potential of the L2 – i.e. learning how to mean in a new language (Section 2.1). In their pioneering contribution, Gibbons and Markwick-Smith (1992) focus on the system of MODALITY as an illustration, and since we will also focus on this system, we will then summarize Halliday’s systemic-functional description of modality (Section 2.2). Based on this survey, we can identify a serious gap in the research since Gibbons and Marwick-Smith (1992): essentially there are no longitudinal studies tracing the development of writers in terms of their gradual mastery of the meaning potential of a language. We then set out to fill this gap in Sections 3 and 4.

2.1 Learning how to mean in a new language

L2 learning involves learning how to mean in a “new” language, as we noted above; drawing on their existing L1 meaning potential as a resource, L2 learners develop their meaning potentials in this new language, in constant engagement with text in context that they have the opportunity to engage with. There is a long tradition of foregrounding meaning in L2 education. Wilkins’ (1976) **notional syllabus**, specified in terms of lists of meanings (“Categories for a notional syllabus”, “semantico-grammatical categories”: time, quantity, space, sentential relations; “categories of modal meaning”: modality; “categories of communicative function”: e.g. judgement and evaluation), is usually treated as key contribution, and it clearly is, although the focus on meaning was not new, one interesting early contribution being Hornby (1954: Part 5 “Various concepts and how to express them”).² While the notional syllabus was criticized and has been largely replaced by communicative and task-based approaches, it is still relevant as an interesting source of insight.

Taking Wilkins (1976) as a frame of reference, Gibbons and Markwick-Smith (1992: 39) point out that system networks have a clear advantage over his lists of meanings in that they organize meaning as what we might call **strategic options in meaning**:

To illustrate the nature and use of a Systemic semantic description, the area of modality in English will be used. This area traditionally causes considerable problems for second-language learners, particularly the meaning and use of modal verbs themselves. For comparison one must look at Wilkins (1976: 40–41). It can be seen that Wilkins’ taxonomy is in essence a list, although the numbering indicates more organisation than Brumfit allows. Formal realisations are numerous and are examples only, and no semantic or stylistic differentiation is made among them. Some of the semantic contrasts are embedded in running text. All of this makes it difficult to base teaching on this taxonomy and renders the semantic analysis of error almost impossible.

² Hornby’s (1954) pioneering contribution seems often to have been overlooked; even Wilkins (1976) does not refer to this aspect of this work.

They present the description of the system of MODALITY, which we will return to presently (Section 2.2), and continue (p. 39):

It can be seen that this is a system rather than a list, meeting one of Brumfit's strongest objections [to Wilkins's notional syllable, Xuan & Matthiessen³]. It presents a clear picture of the major choices available in the English modality system. An important difference from Wilkins' model is that several semantic choices must be made simultaneously in order to arrive at a possible formal exponent [i.e. realization, Xuan & Matthiessen]. The left-to-right axis is one of increasing semantic delicacy. In as far as the language system itself can predict acquisition order (this must always be balanced against external demands and psychological factors such as processing constraints), it would predict the acquisition of the left-hand grosser distinctions before the right-hand more delicate semantic distinctions.

This points to the value of the system network as a **cartographic tool** (cf. Matthiessen 1995), a tool for mapping out a language as a resource, system network by system network. In the context of language education, Gibbons and Markwick-Smith (1992) take a step further and show that system networks can be used as a **diagnostic tool** in the analysis of written output by L2 learners in order to create **systemic profiles** of them based on the systemic selections they make and don't make. Such profiles can be compared and contrasted with comparable ones for native writers addressing similar writing tasks.

In their presentation, Gibbons and Markwick-Smith (1992: 41) illustrate their points referring to "two compositions by a Hong Kong secondary school pupil with Cantonese as her mother tongue". Based on their analysis of these two compositions, they arrive at the following findings (p. 43):

In the two compositions by the Hong Kong learner, there is a noticeable and sometimes inappropriate under-use of modality. Some areas of the modality system are reasonably represented however – she does not appear to have problems with adverbial exponents of 'usuality' – she uses *often*, *never*, *always* and *seldom*. Similarly, there are a number of correct uses of **explicit** markers of modality, both **objective** e.g. *it is possible that* and **subjective** e.g. *I think that, I find that*. It is in the **implicit** area – in practice this usually means modal verbs – that the problem is found. Notice, incidentally, the utility of the network display in detecting both developed and underdeveloped areas. Although the learner is of intermediate standard and has an extensive vocabulary, the only modal verb used correctly is *can* ...

This is the **systemic diagnosis** of the compositions by the L2 learners; it is a systemic diagnosis precisely because it profiles the options selected by the learner against the background of the overall system. Based on such systemic diagnoses, researchers or teachers can then continue to a **remedial treatment phase**, exploring "remedies"; Gibbons and Markwick-Smith (1992: 44) write: "Using the system network, then, we are

3 They refer to Brumfit (1979, 1981).

able to show that remedial treatment is required in the ‘subjective implicit’ expression of various types of modality.” Based on Gibbons (1989), they outline a staged “instructional cycle”: Stage 1 – Focusing > Stage 2 – Recognition > Stage 3 – Guided practice > Stage 4 – Application. At each stage, the system network is a crucial tool, serving as the map of the resources to be taught and learned.

2.2 The system of MODALITY

The system of MODALITY in English is part of the interpersonal resources of the language for enacting roles, relations, assessments and values in the context of the tenor of the relationship between speakers and addressees. It has as its systemic domain the clause. The key interpersonal system of the clause is the system of MOOD, the system for realizing semantic speech functions (“speech acts”) in dialogue.

The system of MODALITY is dependent on, and related to, the system of MOOD; it is largely available only in ‘indicative’ clause rather than ‘imperative’ ones, and it is sensitive to the distinction between ‘declarative’ and ‘interrogative’ indicatives. It is in fact part of the interpersonal resources for assessing the information being exchanged by indicative clauses or for qualifying the act of exchange itself. These resources cover a wide range of assessments, including comment on desirability (e.g. *unfortunately*) and veracity (e.g. *frankly*), extending into the lexical zone of lexicogrammar (aspect of which have been described under the heading of “appraisal” in SFL, as in Martin and White 2005). The most highly grammaticalized area in English is that of MODALITY. When we examine resources of interpersonal assessment of information around the languages of the world, we find that certain languages foreground assessment of information through modality (the speaker’s degree of belief in the information) and other languages favour evidentiality (the speaker’s source of the information), and some languages operate with mixed systems (cf. Matthiessen 2004).

Here we will use the description of the system of MODALITY presented in Halliday and Matthiessen (2014: Chapters 4 and 10), which is essentially the same version used by Gibbons and Markwick-Smith (1992) in their study. The systemic description is set out in Figure 1 together with examples constructed for comparison and contrast in the tables to the right representing intersections of systemic terms. This description includes not only the options in modality that are realized by modal operators (auxiliaries) serving as the Finite in the interpersonal structure of the clause, but also options realized by modal adverbs serving as mood Adjuncts, expansions of the verbal group serving as Predicator (e.g. *able to*, *obliged to*) and wordings that are explicitly subjective (e.g. *I think, I’m sure*) and explicitly objective (e.g. *it is probable, it is certain*).

enacted by the speaker as either ‘subjective’ or ‘objective’ in orientation, as with ‘I think’ versus ‘it is probable’ in the case of probability.

- MANIFESTATION (OF ORIENTATION): implicit/explicit. The orientation of assessment as either ‘subjective’ or ‘objective’ may be left ‘implicit’ as with modal operators serving as Finite (e.g. *must*), modal adverbs serving as mood Adjuncts (e.g. *certainly*), modal adjectives and passive modal verbs serving as Predicator (e.g. *able to, obliged to*), or it may be made ‘explicit’ by means of a clause, either a ‘mental’ one (e.g. *I think*) or a ‘relational’ one (e.g. *it is probable*).

(The system of MODALITY is further expanded through grammatical metaphor, as in *the probability that the moon is a balloon, the obligation to wear a mask*. Thus Article 3 of the Universal Declaration of Human Rights says: *Everyone has the right to life, liberty and security of person*, which is a metaphorical variant of something along the lines of *everyone may live, be free and be safe*.⁵) However, while this expansion is significant to learners as they move towards the mastery of certain registers, importantly academic registers, we will not explore it further here.)

As in the case of all semantic and lexicogrammatical systems, the deployment of the options provided by the system of MODALITY varies from one register of language to another according to the nature of the context in which the register operates (see further Section 5). This is obviously of crucial importance to learners since different registers will afford them different opportunities to be exposed to samples of modality and to exercise their own choices in writing and speaking.

3 A longitudinal study of L2 writing development

As background to our study of selections in the system of MODALITY in samples of L2 writing by Year 9 and 12 high school students and Year 3 university students, we will present the central relevant findings in Xuan’s (2015) one-year longitudinal study of writing by Year 9 high school students.

Xuan (2015) analysed their output in terms of the system of MODALITY – among other grammatical systems, categorizing their written compositions throughout the year based on field of activity within context (using the account presented in Matthiessen 2015), as shown in Figure 3 (to be discussed below). His findings are summarized in Figure 2, which shows the relative frequency of the selections of the terms in the system of MODALITY. There was no reference group of native English writers, but his findings seem to indicate to both over-use and under-use of certain

⁵ Interestingly, a version for children retains in English this metaphorical flavour: *Everyone has the right to live, to be free, and to feel safe*. See: <https://www.un.org/en/udhrbook/#10>

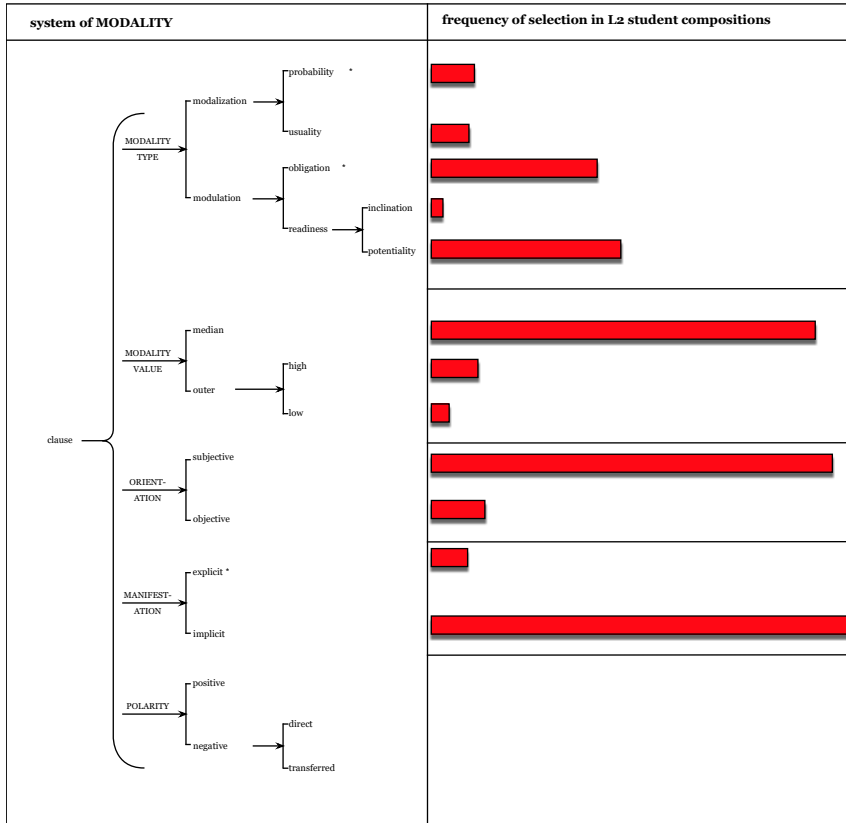


Figure 2: Xuan's (2014) modal analysis of the written output by Chinese high school students learning English over a year of writing.

options in MODALITY (based on the same considerations as in Gibbons and Markwick-Smith 1992).

Figure 2 shows that the Chinese learners' favoured choices were as follows: MODALITY TYPE: 'modulation', either 'obligation' or 'potentiality' & MODALITY VALUE: 'median' & ORIENTATION: 'subjective' & MANIFESTATION: 'implicit'. The most common realizations were the modal operator *can* as Finite: *can*, followed by the modal *should* as Finite – both implicitly subjective. Thus, the learners did not vary their modal selections greatly throughout the year. This can be explained by reference to the writing tasks: they were registerially quite narrow, and there was no obvious principle of registerial progression over the year. The ten writing tasks in the one-year longitudinal sample can be classified according to field of activity within context, as shown in Figure 3. The two most frequent tasks belong to the contexts of

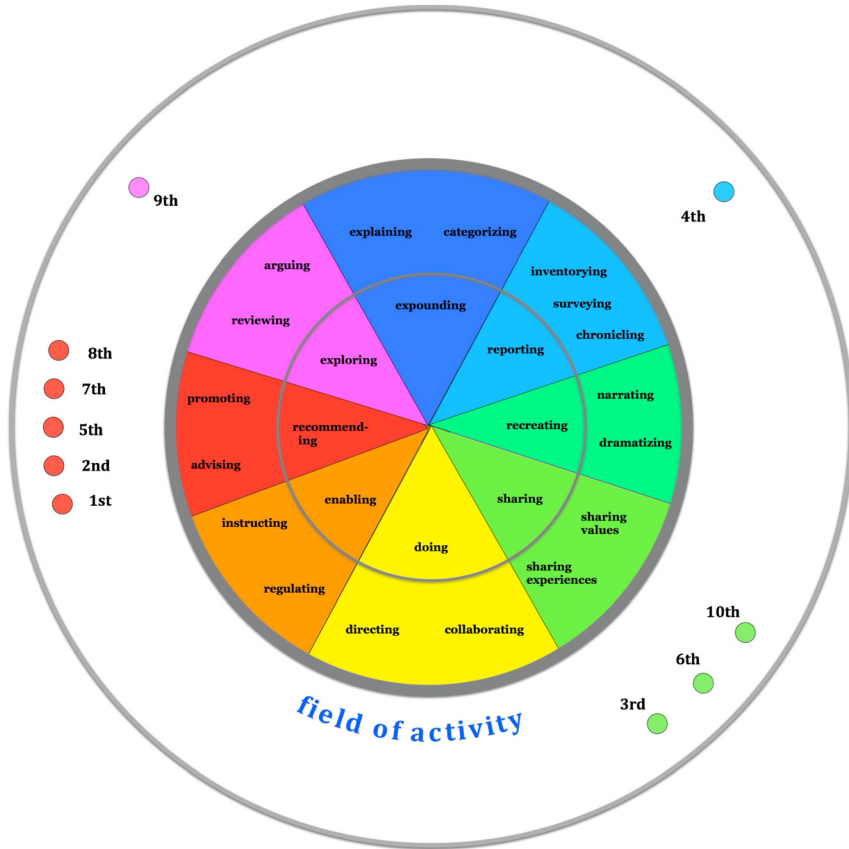


Figure 3: Ten writing tasks given to Chinese high school students studying English over one year sorted according to fields of activity in Xuan's (2014) study.

sharing (3 tasks) and of recommending – more specifically advising (5 tasks). The tasks did not seem to conform to a registerial progression that would have enabled the L2 writers to exercise and master more options within the system of MODALITY.

Xuan's (2015) investigation indicates that system networks that describe linguistic resources can be valuable diagnostic tools not only for monitoring the progress of individually learners but also in tracking whole cohorts of learners longitudinally. The **systemic profiles** produced by learners based on the analysis of their output may suggest not only remedial tasks for individual students or student groups but also to a revision of syllabi and curricula so that they are informed by the selection of registers (cf. Byrnes et al. 2010). Drawing on Xuan's (2015) findings, we can envisage curricular changes taking into account both the complementary

learning opportunities presented by different registers and the progression from one register to another – a sequence produced to enable learners to enhance their mastery of the system based on their engagement with registers where different aspects of the system are used and “put at risk” systematically.

4 Three sampling points: Year 9, Year 12 and university Year 3

4.1 Extended study: methodology and data

So far we have been concerned with the corpus from Xuan’s (2015) study of Year 9 students. Now we turn to the extension of this study to include two more sampling points. The design of our study is a combination of longitudinal and quasi-longitudinal approaches. **Longitudinal** means we adopt data from Xuan (2015)’s project, where he looks at a class of junior year-3 secondary schoolers’ English L2 writing in a high school from mainland China. **Quasi-longitudinal** here means we adopt this design from Quam (2020), Ryshina-Pankova (2011) and Christie and Derewianka (2008) to sample writing tasks of different proficiency levels and select the most representative texts by these learners to track and identify writing development across levels or grades.

The data we collected for this project are thus from three groups of L2 English learners in mainland China, summarized in Table 1. These learners were divided by their level of their English proficiency: group one are 9th Graders, 9 are 12th graders and group three are third-year university undergraduates. The first and second groups of learners are from the same high school in Guangzhou.

The reason for choosing the same school for data collection is that these two groups of learners have similar educational background and learning aptitudes. Other contextual factors, such as teaching context, teachers’ teaching philosophies, and school culture, have been kept as constant as possible so that we can maintain more reliable and comparable data analysis. These learners have 6 h per week of instructed English learning in their school. While 9th graders have a vocabulary of approximately 2,000 words (Xuan 2015), 12th graders have a vocabulary of around 4,000 words. The teaching and learning approach is still a focus-on-forms approach (Xuan and Zhang 2023). That is, most of the learning and teaching focus on explanations of grammatical rules and doing some decontextualized drills, such as, multiple choice or filling in the blanks.

In terms of the university third year undergraduate, they are a group of English majors from a business English programme in an average university in Guangzhou.

Table 1: Characterization of the three groups.

Students				Corpus						
Institution	Year	Vocabulary	Focus	Other features	Texts	Word count	Texts selected for current study	Word count ^a	Vocabulary density	Average words per sentence
High school	Year 9	2,000	Forms	6 hours per week of English instruction, in a top high school in Guangzhou	45	c. 10 K words	5 compositions	812 total words and 246 unique word forms	0.303	11.3
	Year 12	4,000	Forms		25	c. 4.8 K words	5 compositions	976 total words and 339 unique word forms	0.347	11.2
University	Year 3	8,000		Business English programme majors, in an average university in Guangzhou	60	c. 12.2 K words	5 compositions	1,086 total words and 401 unique word forms	0.369	16.0

^aQuantitative measures based on Voyant Tools (<https://voyant-tools.org>).

The reason for choosing an English major is that this group of learners represent the best L2 English learners in the mainland. They attended the four year BA in business English programme in their university. The curriculum concentrates on English proficiency and business English courses respectively. During the data collection period, the participants were in their third year of their university and they had all passed TEM 4 (Test for English Majors). This test is specifically designed to test the English majors in mainland China after two years of learning in their college, aiming to check if the students have attained what have spelt out in the English curriculum. This group of learners have a vocabulary size of around 8,000 words.

Here we will focus on just one register, viz. texts written by students in response to the contextual prompt of producing advisory texts recommending the approach of lifelong learning.

4.2 Analysis: Year 9

The sample of Year 9 student advisory texts on *Lifelong Learning* consists of 5 compositions, totalling around 812 words. The selections in the system of MODALITY shown in Figure 1 above are summarized in Table 2. In terms of the modal systems of MODALITY TYPE and MODALITY VALUE (see Figure 1), there are two favoured selections, viz. ‘obligation’ & ‘median’ and ‘readiness: potentiality’ & ‘low’. The modality of ‘obligation’ selections are split evenly between ‘subjective’ (*should*) and ‘objective’ (*is* + ‘be’ + *important*), whereas the potentiality selections are all ‘subjective’ (realized by the favourite modal operator *can*) (Figure 4). (The most common modal operators are *can* with 22 occurrences and *should* with 12.)

Table 2: Selections in modality, high school: Year 9 (“Lifelong learning”).

Modality value:	Orientation:	Modalization		Modulation		
		Probability	Usuality	Obligation	Readiness	
					Inclination	Potentiality
High	Subjective					
	Objective		3			
Median	Subjective	1		12		
	Objective			12		
Low	Subjective	1				22
	Objective					

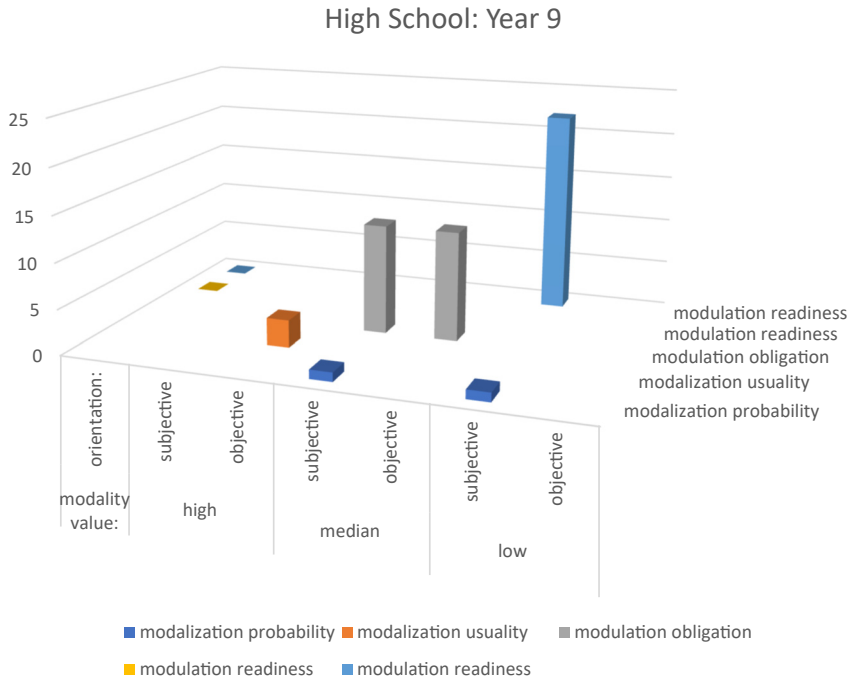


Figure 4: Chart of selections in modality, high school: Year 9 (“Lifelong learning”).

4.3 Analysis: Year 12

The sample of Year 9 student advisory texts on *Lifelong Learning* consists of 5 compositions, totalling around 976 words. The selections in the system of MODALITY shown in Figure 1 above are summarized in Table 3. In terms of MODALITY TYPE and MODALITY VALUE, there are two favoured selections, viz. ‘obligation’ & ‘median’ and ‘readiness: potentiality’ & ‘low’. The modality of ‘obligation’ selections are split between ‘subjective’ (*should*) and ‘objective’ (*is + ‘be’ + important, beneficial; importance, duty*) with a preference for ‘subjective’, whereas the potentiality selections are almost all ‘subjective’ (realized by the favourite modal operator *can*) except for one instance of *be able to* (*Hopefully you are able to enjoy a wonderful lifelong learning.*).

The favoured combination of type and value show up very clearly in the chart in Figure 5. There is one more fairly prominent combination, viz. ‘usuality’ and ‘high’, as with *never* in *we should never stop learning*, where it combines with ‘negative’ polarity and occurs with ‘median’ ‘obligation’. The other combinations do not suggest

Table 3: Selections in modality, high school: Year 12 (“Lifelong learning”).

Modality value:	Orientation:	Modalization		Modulation		
		Probability	Usuality	Obligation	Readiness	
					Inclination	Potentiality
High	Subjective			3	1	
	Objective		10	3		
Median	Subjective	3		12		
	Objective		1	7		
Low	Subjective	1				16
	Objective					

any clear patterns, which is not surprising given the small sample size. However, the modality motif of advisory texts of low potentiality and median obligation is very prominent; but there are also 6 combinations of ‘obligation’ with ‘high’ value, e.g. realized by *must* in *we must keep learning to adapt for the modern society*. (The most common modal operators are *can* [15 tokens] followed by *should* [12 tokens].)

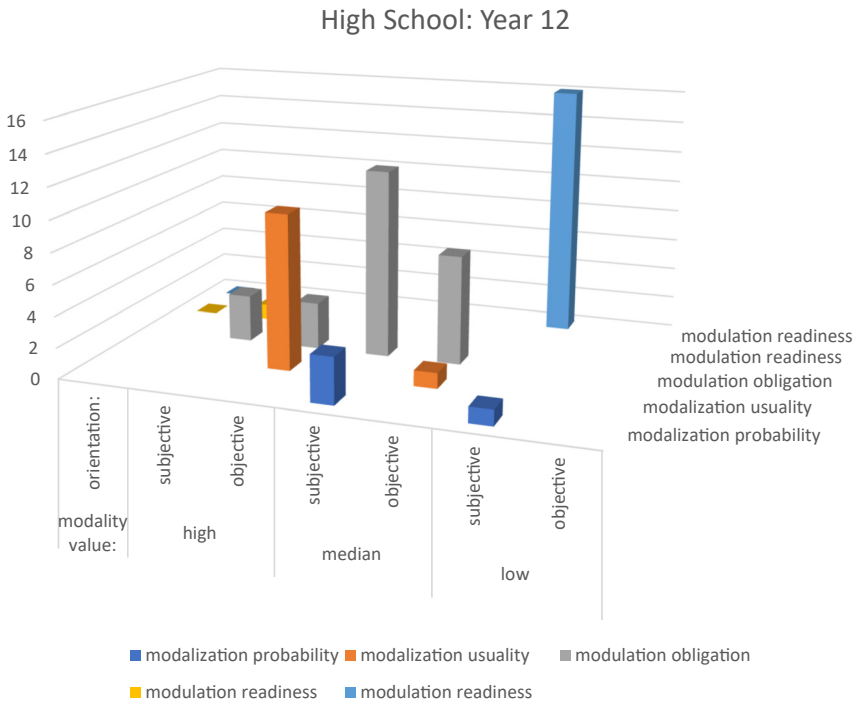


Figure 5: Chart of selections in modality, high school: Year 12 (“Lifelong learning”).

Table 4: Selections in modality, university: Year 3 (“Lifelong learning”).

Modality value:	Orientation:	Modalization		Modulation		
		Probability	Usuality	Obligation	Readiness	
					Inclination	Potentiality
High	Subjective			2		
	Objective		1	3		
Median	Subjective	1		12		
	Objective			9		
Low	Subjective	2				18
	Objective				1	

4.4 Analysis: university, Year 3

The sample of Year 9 student advisory texts on *Lifelong Learning* consists of 5 compositions, totalling around 1,086 words. The selections in the system of modality shown in Figure 1 above are summarized in Table 4. In terms of MODALITY TYPE and MODALITY VALUE, there are two favoured selections, viz. ‘obligation’ & ‘median’ and ‘readiness: potentiality’ & ‘low’. The modality of ‘obligation’ selections are split between ‘subjective’ (mostly *should* but also *have better*) and ‘objective’ (*is + ‘be’ + important, advisable; be supposed to; be beneficial, good*) with a preference for ‘subjective’, whereas the potentiality selections are all ‘subjective’ (realized by the favourite modal operator *can*).

The favoured combination of type and value show up very clearly in the chart in Figure 6. The other combinations do not suggest any clear patterns, which is not surprising given the small sample size. However, the modality motif of advisory texts of low potentiality and median obligation is very prominent; but there are also 5 combinations of ‘obligation’ with ‘high’ value, e.g. realized by *need* in *first and foremost, we need to calculate the concept of lifelong learning for the reason that thinking can direct our actions*. (The most common modal operators are still *can* [17 tokens] and *should* [9 tokens].)

4.5 Comparison of Years 9, 12 and University Year 3

Having presented the analysis of the corpora representing the three sampling points, we can now compare and contrast the selections in the systems of MODALITY TYPE and MODALITY VALUE: see Table 5. The selections are charted in Figure 7.

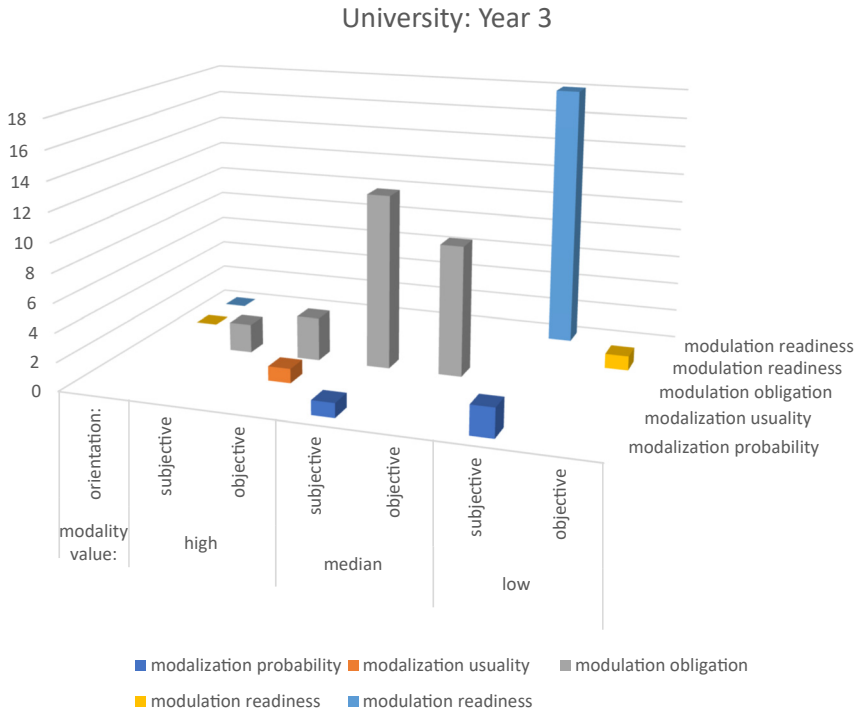


Figure 6: Chart of selections in modality, university: Year 12 (“Lifelong learning”).

The chart in Figure 7 shows clearly that the most prominent patterns remain remarkable similar across the three sampling points: the advisory texts are dominated by median obligation and low potentiality – the combination to be expected in personal advice addressed to a group of people such as friends or classmates. Starting with high school Year 12, there are also some selections of high value obligation, e.g.:

High school, Year 12:

We **must** keep learning to adapt for the modern society.

University, Year 3:

First and foremost, we **need to** calculate the concept of lifelong learning for the reason that thinking can direct our actions.

(The modal operator *must* occurs in the Year 12 and Year 3 samples, but not in the Year 9 one.) It is also worth noting there is an increase in selections of ‘usuality’ in the high school Year 12 sample, but this is not retained in the university Year 3 sample.

Table 5: Selections in the systems of MODALITY TYPE and MODALITY VALUE in the three samples.

	Modalization						Modulation								
	Probability			Usuality			Obligation			Inclination			Potentiality		
	Year 9	Year 12	Year 3	Year 9	Year 12	Year 3	Year 9	Year 12	Year 3	Year 9	Year 12	Year 3	Year 9	Year 12	Year 3
High				3	10	1				6	5				
Median	1	3	1		1		24	19	21						
Low	1	1	2									1	22	16	18

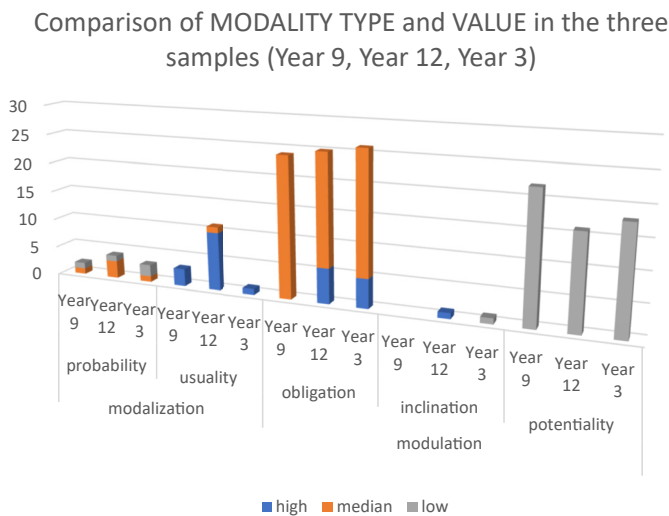


Figure 7: Chart of selections in modality, comparing high school: Years 9 and 12 and university: Year 3 (“Lifelong learning”).

The Year 12 selections of ‘usuality’ are all except one of ‘high’ value, and ‘objective’ in orientation – realized by either *always* or *never* as mood Adjuncts:⁶

Books are **always** our best teachers.
First, **always** be curious.

There are some modal wordings that appear only in the university Year 3 sample as realizations of selections involving ‘obligation’, e.g.:

Second, it is **advisable** that [[our government ought to issue some policies to motivate the public]]
Finally, we **are supposed** to know the importance and essence of lifelong learning

Although some new combinations of modal options occur after Year 9, such as the combination of ‘obligation’ and ‘high’ (in addition to ‘median’), there is no clear indication that the system of MODALITY has been significantly expanded over the three sampling points. To bring out the favourite combinations of modal options against the overall system of MODALITY (Figure 1), we have profiled them in Figure 8. This figure shows clearly how little of the overall potential of modality is taken up by students’ favourite choices. This again points to the importance of the nature of the register in

⁶ Cf. Gibbons & Markwick-Smith’s (1992: 43) comment that the high school student whose compositions they studied did “not appear to have problems with adverbial exponents of ‘usuality’”.

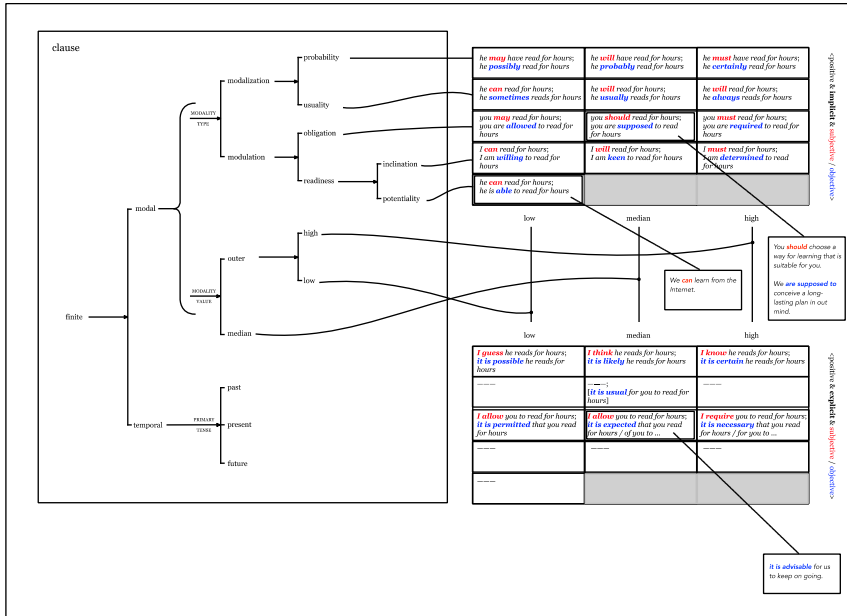


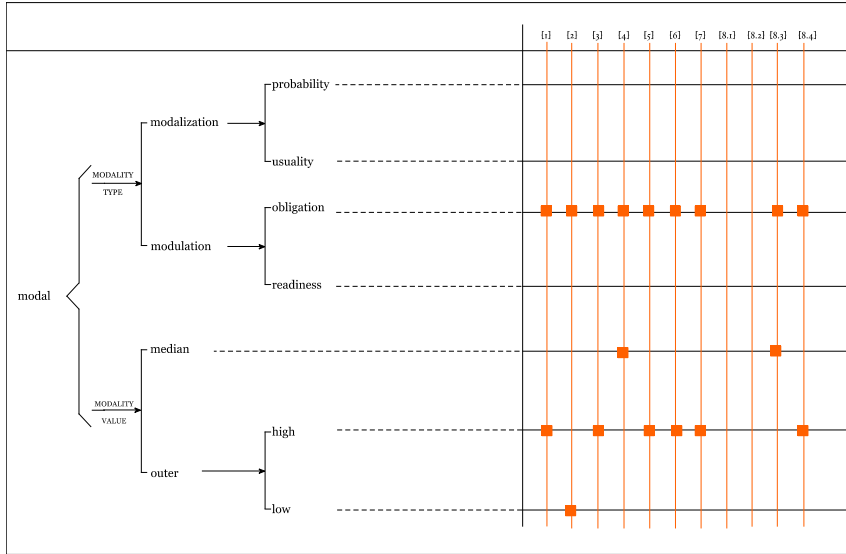
Figure 8: The system of MODALITY with the options favoured by the L2 writers in the “Lifelong Learning” texts in Years 9, 12 and 3.

writing tasks: the modal meanings “at risk” in personal advisory texts addressed to friends and classmates such as “Lifelong learning” are quite limited.

5 The way forward: modality in different registers

As we have seen, even when we sample L2 texts from three different periods in education (Year 9, Year 12 and Year 3), the expansion in the use of the meaning potential embodied in the system of MODALITY is quite limited – as long as we focus on texts from one register, that of written advice about the value of lifelong learning addressed to friends and classmates. We have also seen from Xuan’s (2015) study of Year 9 writing tasks from a few different registers that there was no clear sense of progression throughout the year (cf. Figure 3). The way forward will thus be in the careful selection and ordering of texts from registers that afford learners with complementary opportunities over time to engage with and master different parts of the resources of the system of MODALITY.

For example, if we want students to develop more awareness of and skills in using the modal selections that can combine with ‘obligation’, it would be logical to



3. SCHOOL STAFF

[1] The Association **shall** not exercise any authority over the teaching staff or any matter relating to the control or management of the school. [2] School staff **may** become members of the Association. [3] The Principal of the school, or the Principal's nominee **shall** be a member, ex-officio, of the Association and all its committees.

4. MEMBERSHIP

[4] Membership **will** be open to all parents of pupils attending the school and to all citizens within the school community. [5] The Association **shall** maintain a register of members. [6] A person whose name appears in the register and who has paid the annual subscription **shall** be a member of the Association. [7] The register **shall** be updated after each general meeting by the Secretary or the Secretary's nominee. [8.1] If the name of a person has been omitted from the register [8.2] when that person is otherwise entitled to be a member [8.3] and their name **should** have been recorded in the register, [8.4] then that person **shall** be a member of the Association.

Figure 9: Successive selections in the system of MODALITY in a text regulating a parent-school association.

extend beyond the registerial range depicted in Figure 3, particularly in terms of the field of activity. This expansion could encompass texts functioning within enabling context, regulating kind, such as legal texts that govern the members of an association. Thus, in order to give students a gateway to the part of the system of MODALITY devoted to assignment of ‘obligation’, we might include texts in regulatory contexts – such as laws and legally bindings agreements. For example, consider the text score representing the analysis of an excerpt from the constitution of a parent-school association of a high school in Australia: Figure 9. As the text unfolds, it becomes increasingly clear that it will give students exposure to ‘obligation’ – and that it will give them examples of all three values of ‘obligation’, and, as the realization of ‘high’ obligation, of the most frequent use of the modal operator *shall*, increasingly rare in non-regulatory registers (cf. Leech 2003).

In the same way, we can examine texts from other registers where specific regions within the system of modality are “at risk”. For example, in texts belonging

to registers where general knowledge is expounded or particular knowledge is reported (cf. Figure 3), modal meanings within the region of modalization are “at risk” because the validity of the knowledge being expounded or reported is of great importance, as in the following example from a university textbook in geology:

Large amounts of feldspar in a sandstone **may** imply rapid deposition and burial before chemical weathering **could** decompose the feldspar, or it **might** imply a cold climate [[in which chemical weathering is very slow]].

Here *may* and *might* serve to realize low probability, with an implicit subjective orientation; learners may meet similar examples in the discussion section of journal articles, where different interpretations are considered. (And learners are likely to begin to recognize such selections occurring with the relational lexicogrammar of proof: *indicate, imply, suggest, show, demonstrate, prove* and the like.) But there are many registers where modality may figure prominently in passages of text, as in the following example of dramatized casual conversation (Pinter’s *The Birthday Party*):

MEG. Is Stanley up yet?

PETEY. **I don’t know** || [Ø: whether Stanley is up yet]. Is he [Ø: up yet]?

MEG. **I don’t know** || [Ø: whether Stanley is up yet]. I haven’t seen him down yet.

PETEY. Well then, he **can’t** be up.

MEG. Haven’t you seen him down?

PETEY. I’ve only just come in.

MEG. He **must** be still asleep.

In this short passage, there are four instances of ‘subjective’ orientation in the assessment of ‘modalization: probability’ combined with ‘implicit’ manifestation (*can’t; must*) and ‘explicit’ manifestation (*I don’t know*) and both ‘positive’ and ‘negative’ polarity. This is, of course, not a model for L2 **writing**; but it illustrates the need for examining the **complementarity** of learning opportunities in different registers across writing and speaking.

6 Conclusions

In this paper, we have examined selections in the system of MODALITY in L2 writing framed in terms of successive compositions over time in particular registers, first summarizing aspects of Xuan’s (2015) study of compositions by students in Year 9 of high school of the period of one year, and then reporting on a new study where we take this further for one register to trace selections over two additional one-year samples, viz. Year 12 of high school and Year 3 of university students of English.

While we have concentrated on the system of MODALITY to investigate the amalgamation of temporal and registerial considerations in the potential expansion of resources in L2 writing, it merely serves as an example of approaching L2 writing development paradigmatically. Here, language is viewed as a resource, a network of options in meaning. Additionally, system networks are utilized as diagnostic tools to profile the selections made by students against the overall system. (see Figures 2 and 8). Once the selections made by L2 writers have been profiled against the overall system and potential problems of over- and under-use have been identified, it is possible to design remedies along the lines discussed by Gibbons and Markwick-Smith (1992). We propose that such remedial exercises could be beneficially guided by registerial considerations. This involves identifying writing tasks within registers where students can be introduced to the usage of specific systems that they are less familiar with. This approach provides them with the opportunity to practice and gradually master the relevant parts of the system under focus. (This does, of course, resonate with genre-based pedagogy in L2 education, as illuminated by Byrnes et al. 2010, for advanced university-level L2 writing in German.)

When system networks are used as diagnostic tools, they remain in the hands of teachers (helping them become more autonomous teachers), textbook writers and other educators concerned with the design of materials, syllabi, and curricula. This would still be within the generally accepted approach of communicative language teaching, broadly conceived (including task-based approached and content-based language learning). However, to allude to the topic of “lifelong learning”, we are convinced that they can also play a significant role in empowering L2 learners. Under certain conditions, L2 students may benefit from engaging with some form of system networks – this can also happen if translation skills are added to the activities for advanced language learners (on translation as choice among options of meaning, see Halliday 2012; Matthiessen 2014).

The research we have reported on here certainly needs to be extended in a number of ways. (1) The sample sizes will need to be increased; our study is only a pilot study designed to inform larger-scale studies. (2) The range of registers tracked over Year 9, Year 12 and University Year 3 (or whatever the sampling points are) will need to be wider partly so that it is possible check whether the selections are as “stable” over the sampling points as in our study of personal advisory texts written for friends and classmates. (3) The sample of L2 writers should ideally be supplemented and compared with a comparable sample of L1 writers. (4) The focus on one system should be widened to include systems from all the metafunctions of language. (5) Pairs of languages other than Chinese (L1: mother tongue) and English (L2) must also be examined. (6) The orientation towards L2 learner output in terms

of writing needs to be combined with studies of their input, including textbooks, classroom instruction and interaction, and other relevant aspects of their learning environment.

Research ethics: Not applicable.

Author contributions: The authorship of the sessions is as follows: Session 1 is authored by Christian Matthiessen. Sessions 2 and 4 are co-authored by Winfred XUAN and Christian Matthiessen. Session 3 is solely written by Winfred XUAN, while Sessions 5 and 6 are penned by Christian Matthiessen.

Competing interests: The author(s) state no conflict of interest.

Research funding: None declared.

Data availability: The raw data can be obtained on request from the corresponding author.

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