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Language, people, classrooms, world: Blending disparate theories for united language education practices

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Abstract

With a forward-looking and problem-solving mindset, this article aims to combine theoretical knowledge and empirical evidence from different schools of thought in the field of second language (L2) learning and teaching—namely, instructed second language acquisition, generative linguistics, and an ecological perspective that includes multiple frameworks. Acknowledging numerous fundamental differences in our theoretical and methodological perspectives on how to conduct research, we are united on two fronts: First, we believe that researchers with differing theoretical commitments can and should work together to advance L2 research. Second, differing theoretical beliefs are potentially of limited relevance to those who will implement our pedagogical suggestions, that is, practitioners. In this article, we first present our individual perspectives regarding L2 learning and teaching (Perspective 1 by Michel and Sato, Perspective 2 by Alexopoulou, and Perspective 3 by Thorne and Hellermann). In the final section of the article, we unite our voices by prioritizing the educational practices upon which we agree, including the fact that all L2 learners bring their individual backgrounds into the classroom, the necessity of L2 use for L2 learning, and the role of L2 education for people's overall quality of life.

KEYWORDS
equitable education, evidence-based practice, generative linguistics, instructed second language acquisition, intertheoretical approach, socio-materialism

Three researchers walk into a classroom. One is an instructed second language acquisition (ISLA) researcher, another is a generative linguist, the third is a researcher focused primarily on embodied interaction. The teacher says: "What an honor to have researchers in our class! What can I do for you?" The ISLA researcher tells her to manipulate her students' cognitive processes and consider implicit knowledge as the goal of instruction. The generative linguist tells her to consider the parameters of her students' first language (L1) and how this may affect the developmental sequence of acquisition of the second language (L2). The interaction researcher tells her to emphasize that the L2 is used as a semiotic resource to meaningfully engage with people and the world. The teacher becomes increasingly confused and the researchers increasingly frustrated. The researchers go back to their universities feeling irrelevant and the teacher continues to teach without getting actionable pedagogical advice from the researchers.

In this scenario, four issues are addressed: First, researchers tend to operate within a particular theoretical framework, and some fundamental differences across theories seem to be irreconcilable. Consequently, researchers rarely provide collective pedagogical implications drawn from different theoretical paradigms. Also, their evidence-based pedagogical implications are often too narrow or broad to implement in the complex learning environment of the classroom. Second, because of the differences in their perspectives, researchers from different theoretical and methodological paradigms rarely collaborate with one another, which is unhelpful for the advancement of our scientific understanding of second language acquisition and teaching (SLA/T) and for applying research to classroom teaching. As such, we are fortunate to have this collaborative opportunity: It was even better that the editors of the current guest-edited issue grouped us together, as this pushed us to look for convergent goals among our diverse group of theoretical perspectives. Third, while researchers tend to intellectualize practical teaching issues by relying on philosophical arguments and statistical methods, many teachers are not trained to interpret researchers' abstract findings and arguments and incorporate them into practical teaching techniques and materials. Fourth, both researchers and teachers tend to assume that knowledge is created and owned by researchers while teachers are recipients of knowledge. This belief may exacerbate the inequity of the research–practice relationship when practitioners and researchers withhold or technically express their professional knowledge and experience that otherwise could be used to enhance student learning in an equitable manner.

In this article, we will address these issues by, first, presenting our own theoretical perspectives and empirical research in separate sections (Perspective 1 by Michel and Sato, Perspective 2 by Alexopoulou, and Perspective 3 by Thorne and Hellermann), before uniting our voices and discussing what this unique collaboration can offer to L2 education. In acknowledging some (fundamental) differences in our beliefs, we propose the following five overarching frameworks as useful premises for both researchers and practitioners to achieve the shared goal of ameliorating student learning processes and outcomes. Each of these frameworks may not be unique or novel, yet we consider them imperative in combatting the current decline in the interest in becoming L2 teachers as well as the increasing belief that technology will successfully replace L2 communication. Our uniting perspectives are:

1. L2 research should contribute to L2 education;
2. The goal of L2 education is L2 learning;
3. L2 learning benefits one's life;
4. L2 learners bring their individual backgrounds into classrooms; and
5. L2 use is necessary for L2 learning.

Meanwhile, we use the terms "L1" and "L2" for clarity of our arguments; however, we fully acknowledge that in modern multilingual societies, language users often do not restrict themselves to one or two named languages. In line with the multilingual turn and our personal experiences as multilinguals, we celebrate the superdiverse reality of many plurilinguals who draw on a rich repertoire of multiple linguistic resources, allowing them to engage in translingual exchanges that blur the conventional boundaries of one mother tongue and a second or foreign language.

PERSPECTIVE 1 (BY MICHEL AND SATO): COGNITIVE AND SOCIAL UNDERPINNINGS OF INSTRUCTED SECOND LANGUAGE ACQUISITION

Positionality and introduction

In this section, we, Marije Michel (MM) and Masatoshi Sato (MS), discuss cognitive perspectives on L2 learning and teaching, highlighting our own insights and convictions that are grounded in both our personal backgrounds and research histories; by no means do we intend to represent the entire field of ISLA. As a European multilingual with a strong interest in modern foreign language (MFL) education (particularly, L2 German) and specific expertise in task-based language teaching (TBLT; Michel, 2023), L2 writing processes (Michel et al., 2020), and alignment (Kim & Michel, 2023), I (MM) am convinced that cognitive and social learning processes (in contrast to teaching processes) need more emphasis in MFL teacher training, materials design (e.g., using dynamic-usage-based and task-based frameworks), and when providing support to L2 learners to foster autonomy (see Michel, 2024). Being born and raised in the monolingual society of Japan, I (MS) learned my first L2 (English) via traditional grammar-translation methods. Then, I happened to become a father in a multilingual family living in the multilingual society of Montreal. Partly due to my background, I have grown to be a pragmatic researcher: I use any theory or method that I believe are useful for answering research questions related to a variety of topics that I believe to be important for L2 education. As such, I have recently arrived at the research–practice relationship as a target of investigation with a hope to understand complex human relationships between researchers and practitioners, and to support research(ers) to become more relevant to the real world (see Sato, 2023b, for my personal rant).

Theoretical perspectives

We (MM and MS) believe that L2 learning is mediated by a multitude of factors including, but not limited to, (a) psychological factors (e.g., individual differences that each learner possesses and emotions that arise in learning situations), and (b) social factors (e.g., how the target language and the learner are situated in a given learning context; related themes permeate the current *MLJ* guest-edited issue). We also believe that L2 knowledge resides in each learner's brain as manifested in L2 performance (or skills) that may or may not accurately represent their L2 knowledge. Similarly, we believe that L2 knowledge incrementally develops depending on whether and how specific L2 information is stored in an individual's brain. In this light, we will primarily discuss cognitive perspectives on SLA/T while including psychological and social factors and their mediating effects on cognitive processing.

Our other shared belief is that L2 research comes with two often competing but not mutually exclusive missions. First, research should expand human knowledge about SLA/T by conducting empirical studies inside and outside of classrooms. Second, research should contribute to L2 education when it is purported to do so. While SLA research since the 1960s has addressed the first mission via theoretical and methodological innovations, more recent work also focuses on the second mission by adding instructional perspectives. The discipline that adopts this instructional view and that gained significant attention in recent years is ISLA. Simply speaking, ISLA aims to understand L2 learning and L2 use

in order to improve L2 instruction, as well as to increase our understanding of how instruction affects L2 learning and, consequently, how L2 learning can be facilitated in instructed settings.

Given that ISLA is historically based on SLA, the vast majority of ISLA research thus far is based on cognitively oriented frameworks. Loewen (2020) defined ISLA's mission to investigate "systematic manipulation of the mechanisms of learning" (p. 3) in instructed settings. VanPatten (2017) argued that "one singular question" of ISLA research is "to what extent can instruction in the formal properties of a language alter the route or processes of SLA?" (p. 46). In expanding its scope and inviting any like-minded researchers hoping to contribute to L2 education via their research, Sato (2025) broadened the definition of ISLA as "a discipline that investigates theoretical and practical language-related issues with the ultimate goal of improving second language education" (p. 2). In what follows, we will first outline key theoretical frameworks and empirical research in ISLA, before discussing how ISLA is uniquely positioned to facilitate the research–practice relationship.

Instructed second language acquisition as a discipline

Recently, Spada and Lightbown (2022) reiterated that, in the end, SLA/T researchers and teachers share the same goal of "making classroom teaching and learning as successful as possible" (p. 365). Sato (2025) explained that the ultimate goal of much ISLA research, which is "sometimes directly stated and sometimes implied, is to inform practitioners of research findings that can be potentially used for their pedagogical decision-making" (p. 12). Traditionally, ISLA research builds on the cognitive paradigm of SLA where concepts like memory and attention, cognitive individual differences (e.g., aptitude), and biological factors (e.g., age) are seen as the primary factors explaining (un)successful language learning (see Ortega, 2012). Following the social turn (Block, 2003), other aspects of language learning have gained ground. In instructed settings, this implies looking at how learning is shaped by social interactions between teachers and learners and among learners themselves, but also how different social identities and attitudes toward the target language (societies) shape SLA/T in the classroom. We are not merely acknowledging the existence of social factors; rather, we see language learning as an individual's meaning-making activity that, in order to further their L2 development, requires students' agency and deliberate engagement with the target language as well as the culture, history, and social aspects that are relevant for the community of target language speakers.

Cognitive aspects of language learning

Let us start with the triad of input–output–interaction (Loewen & Sato, 2018), as this paradigm has dominated ISLA research so far. We would argue that any theory of language learning acknowledges the necessity of input for language development. Simply put, without input, there is nothing to be learned. While early immersion perspectives on language instruction aimed at increasing the amount of input (Krashen, 1985), other research highlighted the importance of output. Swain's (1985) Comprehensible Output Hypothesis states that producing output in the target language triggers noticing of the gap between the target linguistic norms and what the learner can currently produce. In production, the learner has to process the formal aspects of language in order to accurately formulate a message. Output also has a hypothesis testing function: Learners try out different constructions and potentially receive feedback on the comprehensibility and accuracy of their production. The Interaction Hypothesis (Long, 1996), elaborated as the interactionist perspective (Gass & Mackey, 2020), highlights the importance of interaction between people, where input and output are brought into a meaningful relationship. During communicative interaction, L2 learners receive implicit and/or explicit feedback on their output, while negotiation of meaning that arises from communication breakdowns may encourage interlocutors to modify their input to make it comprehensible and require output to be modified based on feedback (see Loewen & Sato, 2018).

In accumulating L2 knowledge, neurobiological (e.g., age and brain tissue) and cognitive (e.g., memory, attention, and executive functions) factors play an important role. For instance, it is clear that a younger person's brain (neuroplasticity) is still developing so that building new form–meaning mappings might go faster and will be less influenced by earlier acquired and established cognitive connections (e.g., less interference from an L1) than in older or elderly people who might suffer from cognitive decline (see Keijzer et al., 2023). Yet, particularly in an instructed L2 learning context with limited target language exposure, more mature learners (e.g., adolescents and young adults) might develop some L2 skills more quickly because they can draw on their general cognitive skills and metacognitive strategies to support learning (Muñoz, 2008).

Cognitive perspectives consider *attention* (see Schmidt's seminal Noticing Hypothesis, 1990, 2001) crucial for SLA in that what is noticed has a chance to become *intake* (i.e., stored in long-term memory). With growing methodological and technological innovations (e.g., eye-tracking and functional magnetic resonance imaging [fMRI]; see van Hell, 2023), recent work takes a detailed look at the question of how implicit versus explicit processes of learning might contribute to the development of implicit versus explicit knowledge (Andringa & Rebuschat, 2015; Godfroid, 2016). Growing evidence supports that implicit L2 learning (learning without consciousness) can take place and is likely to generate a type of implicit knowledge of the target language (knowledge that can be accessed automatically) that remains available for a long time. However, explicit learning contributes to the development of explicit knowledge that might be more short-lived yet useful for supporting the development of implicit knowledge. In order to develop implicit knowledge that is required for spontaneous language use, it needs to be proceduralized. Skill acquisition theory explains that repeated practice, together with feedback, supports proceduralization (DeKeyser, 2017; Sato, 2023c). An important aspect of cognitive views is that resources such as attention and working memory are limited—that is, individuals can only attend to and process a limited amount of information at the same time. Hence, research of cognitive individual differences (e.g., working memory) is relevant to ISLA (see Li et al., 2022).

Empirical ISLA research has contributed to our understanding of how we can manipulate L2 learners' cognitive processes to support their learning. For example, in the context of SLA/T, research has shown that different types of input enhancement designed to manipulate learners' attention can foster the learning of vocabulary as well as grammatical forms (Lee & Huang, 2008), also in the context of multimodal input, such as captioned or subtitled film (Montero Perez, 2020). Similarly, research into task complexity (Révész et al., 2016) has revealed that such manipulations affect task performance, for example, in terms of complexity, accuracy, and/or fluency of L2 production (Wu & Michel, 2024). Empirical research has investigated how L2 materials can be developed so that they elicit more advanced language uses, for example, by triggering alignment (Kim & Michel, 2023).

Social aspects of language learning

Above all, language learning is a social activity that—with growing communicative competence—allows for social participation in a language community (Duff, 2017) and affects individuals' identities (Norton & McKinney, 2011; see other articles in the current guest-edited issue). Yet in the classroom, more "local" social factors play a role, such as group dynamics and interactions between teachers and/or learners shaped by trust, feelings of safety, and encouragement. With this narrow scope, ISLA research has investigated social issues linked to L2 cognitive processing in the classroom (e.g., collaborative writing; see Michel et al., 2021; Sato, 2023a). In addition, given their pivotal role for L2 learning, ISLA research is interested in teacher-related issues (Sato, 2025). The examined teacher characteristics include teaching experience (novice vs. experienced), teacher training, as well as their personality (Dewaele & MacIntyre, 2019), and well-being (Sulis et al., 2023).

ISLA research also considers wider social aspects such as biases related to student or teacher accents that interfere with pronunciation learning (Levis et al., 2022) or attitudes toward a target language in a

given society affecting motivation to learn it (Becker, 2022). Furthermore, social individual differences (e.g., race, ethnicity, gender, and sexual orientation) may influence how learners process the instruction in language classes (see Kubota et al., 2022). Overall, we believe that learners' and teachers' identities and the larger society in which they are situated impact cognitive processes; ISLA research is interested in discovering this mediational power. Finally, the learning context is also important (Sato, 2025), as it might relate to the educational system of a specific country (e.g., how many hours a week the target language is taught and starting age) or the target language's social standing (see Michel et al., 2021).

Implications for practice

As holds true for any research into education, also for SLA/T research to be meaningful for teaching practice, we need interdisciplinary mixed-methods work into instructed L2 learning that draws on insights from cognitive and sociocultural, quantitative and qualitative, (psycho- and neuro-)linguistic, and educational research. Consequently, ISLA has to go beyond lab-based studies that finish with a lip service paragraph on pedagogical implications detailing what "teachers should do" (see Coss & Hwang, 2024). In contrast, research that is meaningful for the T in SLA/T or the I in ISLA has to fully engage with teaching practice. We see three major avenues: (a) researchers communicating their insights to practitioners, (b) researchers doing research that answers questions raised by practitioners, and (c) teachers becoming (co-)researchers.

In the first line, researchers have put effort into explaining the outcomes of their research to teachers (see Sato et al., 2022, for a researcher survey), by giving teacher workshops, engaging in pre- and in-service teacher training, mentoring pre- and in-service teachers, or writing teacher training textbooks (e.g., Bryfonski & Mackey, 2023; Loewen & Sato, 2024). Several recent initiatives aim at making (I)SLA research insights more accessible for practitioners include: *TESOLgraphics* (Sato et al., 2024) and *OASIS* (Marsden et al., 2018) provide one-page teacher-friendly summaries of research articles; podcasts (e.g., the French spoken *#JeSuisProfdeFLE*, Rousse-Malpat, 2022–present; or English *Teacher Talking Time*, Gomez et al., 2019–present) and newsletters for practitioners (e.g., monthly Dutch *Nieuwsbrief MVT*, 2021–present) translate ISLA findings into teaching implications; researchers share evidence-based teaching materials (e.g., *TBLT Task Bank*, Gurzynski-Weiss, n.d.; *ENGaGE* for L2 learners with dyslexia, Kormos, n.d.) or support material design via online applications (e.g., *taskGen*, Gilabert et al., 2024).

Second, in order to support researchers to engage with language teaching practice as the site and object of investigation, Sato and Loewen (2022) proposed a cyclical research framework called practice-based research (PBR) in which a researcher collaborates with a teacher throughout a research project. Indeed, most fruitfully, ISLA studies are developed and executed in close collaboration with teachers (see Michel, 2018; Pattemore et al., 2024; Sato & Cárcamo, 2024). Spada and Lightbown (2022) highlighted that many of their investigations started by classroom observations and communication with teachers to ensure their research was aligned with daily practice of a teacher.

Another fruitful way of establishing pedagogically relevant studies is by inviting teachers as researchers. The Dutch government, for example, funds high-school teachers to do a PhD, which has enabled projects such as the one on the longitudinal learning of French via the accelerated integrative method (Gombert, 2022; Rousse-Malpat et al., 2019) or on culture- and literature-integrated language education (Schat et al., 2023). Action research (see Smith, 2020), where teachers research their own practice or invite students to conduct research in their classrooms (e.g., Korvesi & Michel, 2022), generates similarly useful insights, although smaller in scope.

PERSPECTIVE 2 (BY ALEXOPOULOU): LANGUAGE TYPOLOGY, CROSSLINGUISTIC INFLUENCE, AND LEARNABILITY IN L2 GRAMMARS

Positionality and introduction

My (Dora Alexopoulou) research is rooted in generative perspectives on grammatical knowledge in L2, focusing on the role of prior linguistic knowledge (L1) in the acquisition of the L2 grammar. It draws empirically from learner corpora from foreign language teaching, exploiting the unprecedented amounts of learner data becoming available for research through the expansion of online learning globally. Collaboration between researchers and key stakeholders in teaching and assessment institutions can enable ethical sharing of learner data (e.g., exam scores and samples of oral and written language), which can then be structured as data resources (e.g., corpora) to be shared with the research community as well as teachers to understand learning in real-life teaching settings.

SLA presents us with a fascinating opportunity to study the multilingual mind, what happens when a learner acquires more than one language, in particular, more than one grammar. The study of crosslinguistic influence gives us a unique window on how different L1s might influence subsequent language acquisition of one or more languages, potentially leading to different learning outcomes in the additional language(s).

Thanks to the global reach of many foreign language institutions through online learning platforms, learner data from such real-life learning contexts come from learners with a wide variety of L1 backgrounds, thus providing an unprecedented opportunity to study how typologically diverse L1s might influence SLA leading to typologically diverse varieties of L2 grammars. Importantly, we can extend the study of L1 effects to broader typological samples across proficiency levels and investigate the interaction of typological effects with nonlinguistic variables (cultural, socioeconomic, education, age, etc.).

Theoretical perspectives

Thanks to their L1, even the youngest L2 learners are efficient communicators entering SLA with a conceptual lexicon and a fully fledged L1 grammar. The L1 experience is, of course, fused with a cultural and social identity that goes well beyond the grammar. However, here I abstract away from sociocultural aspects and the interactional dynamics of learning and focus on those aspects of grammar learning, which, according to the generative view, are domain specific and can be modeled independently.

There is good evidence that L1 structures and lexical knowledge are systematically engaged by L2 learners leading to crosslinguistic influence, in the form of L1-on-L2 transfer or interference (Flynn & Foley, 2009; Jarvis & Pavlenko, 2007; McWhinney, 2008; Westergaard, 2021; White, 1989). But we might ask, is L1 knowledge helpful for the L2 learner? To answer this question, we need to consider what L1 knowledge is and how it might be engaged in SLA.

For the generative perspective, a key component of the L1 is the L1 syntax parser, a set of combinatory principles, that allows us to group words into phrases to derive meaning. The parser allows us to make sense of funny sentences like "Fish fish fish," or the more creative famous quote from Ulysses, "Love loves to love love." These English sentences are possible because "fish" and "love" are ambiguous between a verb and a noun; to make sense of them, we employ abstract syntactic categorical features and knowledge of their distributional and combinatoric properties, which are part of English speakers' grammatical knowledge. Words are, therefore, not just mappings to concepts or meanings but are also organized into syntactic categories with specific combinatory possibilities.

Moreover, the parser allows recursive application of phrase combinations, which yields complex sentences through coordination and subordination of complement, adverbial, or relative clauses.

How the L1 parser facilitates fast L2 learning

We now might ask, is the L1 parser helpful for the L2 learner? It can only be helpful for L2 learning if it can help parse a significant amount of L2 input and structure. A crucial assumption in the generative perspective is that the core principles for combining words to build phrases are universal, hence, shared across all languages (Chomsky, 1972; Roberts, 2019). Languages may vary in the way they order words and phrases; for example, Japanese puts the verb at the end while Welsh at the beginning. They may also vary in the way some features might be externalized morphologically (or phonologically) and in the precise inventory of features employed (e.g., aspect marking, definiteness, classifiers vs. grammatical number, and so on). Such variation is captured by parameters, options of realizing a fundamentally universal architecture. In addition, there are strong correlations and implicational relations in the possibilities of variation (Baker, 2011; Greenberg, 1966). Thus, the universal properties shared across languages are more fundamental in comparison to the observed crosslinguistic variation.

Acquiring an L2 grammar means resetting the parameters of variation from L1 to L2. In other words, the L2 learner does not acquire a whole new grammar from scratch; they do not relearn universal language properties. Rather, the L2 learner uses the L1 parser to process L2 input and uses the input to revise or restructure the L1 parser so as to capture those aspects of the L2 that differ from the L1. In effect, the process of SLA is a process of acquiring a (typological) variant of one's L1. It follows that what is difficult and easy in SLA will depend on the degree of variation between L1 and L2. Given that core syntax is universal, the acquisition of L2 syntax in terms of phrases, subordinate clauses, and so on will be generally unproblematic. By contrast, L2 functional morphology (e.g., tense and aspect marking and articles) will be challenging, since variation in functional morphology is a central area of crosslinguistic variation (Slabakova, 2009).

L2 functional morphology is difficult because it not only varies across languages, so that there is very little a learner can leverage from their L1, but, importantly, is not as informative for L2 learners. L2 learners (implicitly) prioritize lexical content over morphological and functional meaning when processing input. Lexical content encodes linguistically the learner's conceptual knowledge. When learning a new language, we broadly expect to find translational equivalents of L1 words, for example, we expect L2 words for "table," "water," "bird," "love," "freedom," and so on. Such translational pairs share a (by and large language-independent) concept. There are, of course, gaps in language-specific vocabularies, as there are cultural concepts that might not have translational equivalents, while the mapping between words and concepts is not aligned in the same way across languages, but there is, nevertheless, a large degree of correspondence in our conceptual inventories (Evans, 2010; Goddard, 2001). Words are, therefore, our springboard for learning L2, as they allow us to map new words to our existing conceptual inventory. As a result, L2 learning is meaning driven, giving prominence to the lexical content of words, at the expense of functional morphology, for example, prioritizing lexical cues like "yesterday" or "everyday" instead of a morpheme like "–ed" in English for time reference (Ellis & Sagarra, 2011; VanPatten, 1996).

Empirical work has generally confirmed a dissociation between syntax and functional morphology in L2 (Slabakova, 2016; VanPatten et al., 2012; White, 1989). Rather strikingly, Paradis et al. (2016) found that Chinese immigrant children in Canada were less accurate than monolingual peers in their verbal morphology in L2 English even after 5–6 years of immersion in mainstream primary education, which contrasts with their remarkable ease in using complex syntax within months of exposure to the L2 (Paradis et al., 2017).

At the early stages of acquisition, learners have trouble noticing morphemes and processing them (Ellis & Sagarra, 2011; Jiang, 2004; VanPatten, 1996; VanPatten et al., 2012). Even if these forms are abundant in what language learners hear, learners may not process them. Rather, they rely on lexical

information during processing and production. For example, they pay attention to adverbials to locate events in time (Ellis & Sagarra, 2011) and use numerals rather than grammatical number marking to express plurality (Parodi et al., 2004). The inherent properties of individual morphemes also matter (McWhinney, 2008). The Interpretability Hypothesis suggests that features that do not contribute to meaning may be unlearnable (Tsimpli & Dimitrakopoulou, 2007), predicting that, for instance, gender marking will be harder to acquire in comparison to definiteness on nouns.

The challenge of acquiring L2 functional morphology can be mitigated by the typological similarity between L1 and L2. The more L1–L2 similarities exist (e.g., in shared cognates, morphemes, and so on), the more comprehensible the L2 input is for the learner, which makes learning faster (Jarvis & Pavlenko, 2007; Kellerman, 1983). By contrast, when the L1 and L2 have few similarities, learning will proceed more slowly, with learners producing errors and potentially avoiding challenging structures (Schachter, 1974). Recent studies employing large samples of exam writings and exam scores have shown that the availability of a congruent morpheme in L1 predicts accuracy in L2 (Murakami & Alexopoulou, 2016), while the linguistic distance between L1 and L2 Dutch, captured through a variety of lexical, morphological, and phonological measures, predicts proficiency scores in the STEX exams in the Netherlands (Schepens et al., 2020). More strikingly, smaller linguistic distance mitigates the effects of age-related decline in language learning (Schepens et al., 2022). In my current work, I show that linguistic distance may also influence the acquisition of individual features and items, such as the English article.

Big educational data as an empirical bridge between developmental SLA research and teaching practice

The rapid expansion of online learning and assessment around the world and across the lifespan has created new opportunities for the collection of learner data from teaching and examination institutions. Data from such real-life learning contexts come from learners with a wide variety of L1 backgrounds, thus facilitating research in typological variation in L2 learner grammars and learning trajectories. The EF Cambridge Open Access Database (EFCAMDAT) is an example in point (Geertzen et al., 2013; Huang et al., 2018; Shatz, 2020). It consists of L2 writings submitted to the online school of EF Education First, with 128 distinct tasks across the proficiency spectrum drawing from learners around the globe, consisting of 1.2 million scripts summing 71.8 million words.

Such resources can be a valuable empirical bridge between lab-based developmental research and questions of proficiency and curriculum design but also raise a number of methodological challenges: The data are generated as part of examining and teaching rather than in the context of a well thought-out research design. Importantly, to fruitfully exploit the size of these corpora, automated processing is necessary, which necessitates corpus and natural language processing (NLP) tools that can support analysis of learner language for the investigation of SLA research questions (Alexopoulou et al., 2022).

Large-scale corpora can also help investigations distinguish phenomena that are not sensitive to L1 influence from those that are, understanding the role of typological similarity at an item-specific level (e.g., availability of a congruent morpheme in L1) and at a grammar level (e.g., employing measures of lexical, syntactic, or morphological distance). Moreover, typological effects can be linked to variables like proficiency, task effects, curriculum structure, and so on.

Implications for practice

The foreign language classroom can better leverage the learners' L1 knowledge by exploiting their ability to engage abstract syntactic structure from their L1 to progress in their L2; the emergence of complex syntax in writings before it appears in the curriculum is an example in point (Alexopoulou et al., 2015; White, 2023). Instruction can focus on those aspects of variation between L1 and L2

that will be challenging for the learners. There is now a sizeable body of teaching intervention studies that target particularly challenging phenomena (e.g., subjunctive in Spanish, word order, passivization, and so on) that is informed by developmental SLA research (Ionin, 2023). Crucially, these teaching approaches target individual linguistic phenomena in a systematic way and provide teachers with detailed materials and linguistic examples that are crucial for learning and go well beyond the typically general descriptions found in pedagogical grammars.

More generally, the foreign language classroom may work with the linguistic diversity of the learners L1(s) in the classroom, paying attention to the way a learner's languages might influence each other, leading to emerging L2 varieties reflecting the learners' linguistic backgrounds and histories. Acknowledging the creativity of these emerging L2 varieties and the inevitable interaction of one's grammars in a multilingual learner's mind is paramount to moving away from negative "deficiency" narratives to more positive narratives, highlighting that—irrespective of background, L1, and age—everyone can and will successfully learn a second or additional language that will reflect the multilingual mind of their speaker.

PERSPECTIVE 3 (BY THORNE AND HELLERMANN): A SYNCRETIC AND ECOLOGICAL VIEW OF LANGUAGE, LEARNING, INTERACTION, AND TEACHING

Positionality and introduction

Throughout our 25 years of research and pedagogical interventions (15 of which as close collaborators), we (Steven Thorne and John Hellermann) have utilized multiple explanatory frameworks for empirical investigations of mostly real-time language use, given that interaction and dialogue play a fundamental role in learning. We have focused on the ecological interconnectedness of human development with an emphasis on learning through social interaction. Individuals and humans-in-groups are complex and open systems that include multiple named languages, varieties, and registers, and are shaped by their social and material environments (i.e., the multilingual turn in SLA; e.g., May, 2014; Ortega, 2014). This broadly aligns with the idea of 4E cognition, arguing that cognition is embodied, embedded, enacted, extended, and distributed (Atkinson, 2010; Clark, 2008; Hellermann, 2018) and therefore includes language use as well as bodies, interactional dynamics, and engagement with tools and environments along a brain–body–world continuum (Spivey, 2007).

Learning and interaction are interdependent phenomena and in our work find expression in research traditions that include Vygotskian sociocultural theory and its emphasis on mediation and regulation (Lantolf & Thorne, 2006; Vygotsky, 1978), usage-based ecological and emergentist perspectives on learning language structure (Hellermann & Thorne, 2022; Hopper, 1998; Tomasello, 2003; van Lier, 2004), ethnomethodological conversation analysis (EMCA) for its sequential focus on intersubjectivity (Goodwin, 2017; Thorne et al., 2021), sociomaterialism in positing that human and nonhuman actants (described later) together produce particular morphologies of action (Latour, 2005; Thorne, 2016), and critical perspectives that examine language use situated in and shaped by power relations (Bourdieu, 1991). These perspectives afford multiple lenses through which to investigate language use and learning, which in turn have informed pedagogical interventions that interface instruction with extramural communicative activity, what we have called "rewilding" (Thorne & Hellermann, 2022; Thorne et al., 2021). The rewilding perspective addresses the challenge of how to ecologically align and integrate formal language-learning settings with the vibrancy of diverse linguistic, experiential, and situational contexts elsewhere in the world.

Although we use, and have greatly benefited from, named theories, perspectives, and methodologies, we are primarily interested, empirically and analytically, in a syncretic perspective to discovery social science research. Language use, L2 development, and human activity mediated by learning materials are processes situated in, and productive of, social and material conditions. Humans learn

through participation in ecologies constituted by interaction with other people and a diversity of material and symbolic tools and environments. Regardless of whether one finds any theory of L2 development to be fully adequate to address the complexities of language learning and use, we wish to underscore the necessarily relative nature of theoretical work, which is the result of the essentialization of conflating data into categories of general specification (Fowler, 1986). We would add that theoretical perspectives are necessarily historically relative in terms of their oppositional construction in relation to prior research, as well as being built from a foundation of referential categories, used to catalogue empirical data, which are themselves historically contingent. Theoretical and empirical work is therefore "observer relevant" and thus implicated in one or more ideologies (Searle, 1992). These can be either explicitly stated by the analyst or implicitly assumed in one's work and teaching practices.

As an overarching observation and acknowledgment, our work together has focused primarily on sequential analysis of real-time interaction. As we described recently, taking "a process ontology approach contends that process is fundamental, and entities are derivative or based in process" (Sawyer, 2002, p. 286), and further, that "process is not only a guiding orientation but is also the fundamental nature of reality" (Sawyer, 2002, p. 291; cited in Thorne et al., 2021, p. 107).

In the following section, we outline methods and perspectives that have been used in first and additional language learning research and discuss their application in our own empirical investigations of additional language research and pedagogy.

Theoretical perspectives

Ethnomethodological conversation analysis

What attracts us to EMCA is its focus on social action and communication as improvisatory and underspecified sets of available designs that participants use to achieve joint endeavors and intersubjectivity. EMCA investigates the nature of the constant interpretative process of linguistic signs (Enfield, 2023) that are visible and audible in interaction. Regardless of how careful a speaker is to construct an utterance, "it is impossible to speak in such a way that you cannot be misunderstood" (Popper, 1976/2005, p. 29, cited in Enfield & Sidnell, 2022). EMCA approaches interaction with this recognition in mind; empirical investigations of the ubiquitous phenomenon of repair shows evidence for participants' ability to manage the underspecificity in language as well as the analytic perspective of treating interactants as working toward intersubjectivity. Although people orient to shared histories, context, or common ground when interacting (Clark, 1996), there is a simultaneous orientation to the potential incompleteness of any turn at talk. EMCA allows us to investigate the improvisatory nature of real-time language use with historically sedimented language structure, what Silverstein (2023) referred to as the dialectic of the contextual and entextual, and to investigate languaging (Becker, 1988) as an emergent, cooperative process of interpreting embodied and verbalized communication (Ford et al., 2013; Hopper, 2015). This co-constructed view of human language and action is organized by the interplay between persons and resources that are distributed across social and material environments (Thorne et al., 2021).

Sociomaterialism

Sociomaterialism and actor-network theory are materialist perspectives that share elements of more expansive frameworks such as posthumanism and new materialism, but which focus more narrowly on the interplay between social and material elements within human practices and organizations. This is important as humans remain our analytic focus due to our primary concern with language development and the building of social and material infrastructures for learning (Wagner, 2015). Sociomaterialism

helps to reveal often overlooked biases within the doxa (Bourdieu, 1977), or apparent common-sense validity, that humans exist independently of the social and material conditions in which they live and act. Core concepts include the notion of entanglement (Barad, 2007), which emphasizes the relational constitution of any object of analysis. The term assemblage (Deleuze & Guattari, 1987) constrains the principle of entanglement by narrowing the scope of inquiry to a heterogeneous constellation of relations that together produce certain actions. The term emergence helps to avoid presuming *a priori* states and refocuses attention to how assemblages produce social–material ontologies. Finally, sociomaterialist perspectives have enhanced our conceptualization of the term mediation associated with Vygotskian theory (e.g., Cole, 1996; Vygotsky, 1978). Appadurai (2015) argued that "mediation and materiality are coproduced effects, which never exist apart from one another (…) [and] are best treated as mutual conditions of possibility and as effects of each other" (p. 233). Framed this way, mediation is not only a material or symbolic process that has a one-way effect on a subject. Rather, from the phenomenological vantage point of the human subject, senses (seeing, hearing, and feeling) and actions are modes of materialization through which mediational means outside the subject become activated or relevant to and for the subject (Appadurai, 2015; Thorne et al., 2021).

The complementarity of ethnomethodological conversation analysis and sociomaterialism

Incorporating a sociomaterial perspective to the analysis of EMCA-informed real-time interaction demands a shift in the analyst's gaze to more fundamentally address the many semiotic and material resources available to humans interacting with and in the world. As Latour (1999) remarked, actor-network analyses are "simply another way of being faithful to the insights of ethnomethodology: actors know what they do and we have to learn from them not only what they do, but how and why they do it" (p. 19). The underspecificity of language suggests that the interpretive process involves multiple semiotic resources, such as the body acting in context. Studies in the EMCA tradition have long contextualized language use with visible actions of the body (Goodwin, 1981; Kendon, 1967), showing how the co-production of verbalized language use, gesture, and gaze are intrinsically fundamental to turn construction and turn taking (Goodwin & Goodwin, 1986; Mori & Hayashi, 2006). Additionally, speakers design the language they use to index the physical environment (Schegloff, 1972). Our own research on small-group interaction has shown the coordination between participants' use of language and co-constructed bodily comportment in what we described as interbodied cooperative action (Hellermann & Thorne, 2022): The bodies of the coparticipants in interaction, together with aspects of the material surround, work together to co-construct intersubjectivity among the participants.

Usage-based linguistics

For explicit analysis of language structure, we have drawn on usage-based linguistics (UBL). Tomasello (1999) framed the nature of language use as interactional, comprised of the human ability to share attentional frames, recognize patterns, and culturally attune to the intentional actions of others. Tomasello (2003) emphasized that "language structure emerges from language use, both historically and ontogenetically" (p. 327) and described UBL as thoroughly functionalist. In this sense, UBL, similar to EMCA, situates pragmatics, or recognizable conventions and sequences of language use, at the core of language development given that a primary condition of language use is to "direct people's attention to events and entities in the current joint attentional frame" (Tomasello, 2003, p. 327). This quotation illustrates the conceptual alignment between UBL and sociomaterialism. A UBL perspective is construction based with a focus on utterances, for utterances are "the primary reality of language from a communicative point of view because they are the most direct embodiment

of a speaker's communicative intentions" (Tomasello, 2003, pp. 325–326; for application to our research, see Hellermann & Thorne, 2022; Thorne & Lantolf, 2007; Yuldashev et al., 2013).

Implications for practice

With numerous others in the field, we (Hellermann, 2008; Thorne, 2003, 2006, 2009) have espoused the idea that language learning is made functionally relevant to learners when language is framed as a resource for developing, maintaining, and deepening social relationships of significance. From the learning sciences, we know that learning requires large volumes of effortful engagement and "deliberate" or "purposeful" practice, totaling thousands of hours, to result in robust learning outcomes (Ericsson & Pool, 2016; Ericsson et al., 1993). For the vast majority of language learners, future-self ideations involve aspirations for interpersonal relationships, which in turn fuel the considerable time commitment that most students need to attain advanced levels of linguistic, intercultural, and interactional abilities in their language of study (Darvin & Norton, 2015). These abilities extend beyond prescriptivist linguistic competence, which—while important for high stakes assessments and some communicative purposes—does not necessarily result in advanced L2 communicative abilities for many students.

Our use and development of the pedagogical metaphor of "rewilding" (initially described by conservation biologists; Soulé & Noss, 1998) language education involves reverse engineering from studies of cognition in the wild (Hutchins, 1995) in order to augment and restore a diversity of real-world activities and interactions into instructional curricula (Thorne et al., 2021). We apply the rewilding perspective on instructed language education to address the challenge of how to dynamically integrate formal learning with the vibrancy and diversity of linguistic, experiential, and situational contexts outside of classrooms (Hellermann et al., 2019; Hutchins, 1995; Sundqvist & Sylvén, 2016). Put another way, the rewilding perspective emphasizes direct experience with the broader communicative world, using the world as its own model, so to speak, that subsequently can be coupled with expert mediation by instructors and peers as communicative–curricular resources in instructional settings.

Empirical cases of language use and learning illustrate that communicative action is multimodal, embodied, and embedded in material environments that catalyze action among heterogeneous arrays of humans and nonhuman actants (Latour, 2005). To take one rewilding example, our development of place-based augmented-reality (AR) activities for language use and learning illustrates cooperative action among the participants and with their environment. Sequential–temporal analysis shows how human actions such as gaze, pointing, reading aloud, bodily deixis, and audible communication are used in an orderly manner to achieve and maintain intersubjectivity, and importantly, that such human actions, enmeshed with nonhuman contributions from physical surroundings, together produce observable morphologies of action (Thorne, 2016; see also Hellermann & Thorne, 2022; Thorne & Hellermann, 2022; Thorne et al., 2021).

The rewilding perspective is guided by the notion of structured unpredictability, a game design principle that enhances engagement by providing underspecified guidance (structure) so that players evolve their own practices for setting and accomplishing objectives in environments involving some degree of variability (unpredictability). When creating rewilding opportunities for (and with) language learners, the suggestion is to provide pedagogically informed resources and guidance but not to overdetermine the experience. Coupling instructed language learning with exogenous experiences of languaging in the wild also increases the ecological validity of learning processes by destabilizing the well-known problem of positing, and teaching, discrete named languages. This opens opportunities for incorporating authentic instances of language use in the classroom (Piirainen-Marsh & Lilja, 2019) that illustrate communication without "diglossic functional separation" into bounded named languages (Garcia & Kleifgen, 2020). In addition to AR game activities we have created, rewilding can include a wide array of noninstitutional in-the-world activities; digital contexts such as gaming, fan fiction and fandom, social media, and so on, as well as service learning, attention to linguistic landscapes,

internships, virtual exchange encounters, and other arenas of social or professional activity that can be revisited with expert mediation from instructors and peers.

Learning an additional language is a difficult and time-intensive process, whether in a supportive naturalistic environment or in formally organized instructional settings. Many students in instructional settings find conventional approaches to the teaching of grammar, vocabulary, and the pragmatics of context- and genre-appropriate usage to be largely decontextualized from personally relevant experience and interests. This potentially results in partial disengagement that may disincentivize the large volume of effortful engagement required to develop advanced language proficiency. In contrast, perspectives such as rewilding, learning in the wild, and other techniques that build on learning-beyond-the-classroom experiences while also seeking to amplify learning outcomes via classroom-based reflection and peer and expert guidance, hold great promise for teachers to facilitate opportunities for students to forge authentic and engaged voices in their additional language.

THREE RESEARCH TRADITIONS WALK INTO A CLASSROOM: DISPARATE THEORIES, ALIGNED APPLICATIONS (BY SATO, THORNE, MICHEL, ALEXOPOULOU, AND HELLERMANN)

Our objectives

Evidently, we (Michel and Sato, Alexopoulou, and Thorne and Hellermann) have complementary, and sometimes seemingly contradictory, perspectives on SLA/T and thus approach our research activities with differing understandings of how an L2 is processed and learned. While we all agree that an individual's brain and societal catalysts are necessary for L2 learning, at a basic level, we differ on where and how we look for evidence of learning. At the operational level, we draw on diverse theoretical frameworks and methodologies. To date, researchers from our various theoretical paradigms rarely collaborate, which limits the circulation and uptake of research findings (exceptions include the Douglas Fir Group, 2016; Hulstijn et al., 2014). Our research independently contributes to furthering our understanding of SLA/T, yet partitioning among researchers is ultimately unhelpful for those who may apply our research findings in real-world settings. Teachers, and others involved in pedagogical decision-making, are perhaps less interested in, for instance, how human brains process L2 information, which grammatical structures are more susceptible to L1 influence than others, or how society and language learning are linked. In addition, practitioners are unlikely to be interested in individual researchers' theoretical perspectives or their philosophical beliefs. Rather, L2 educators are interested in knowing the most effective teaching methods and materials that are based on research evidence (Sato & Loewen, 2019a).

In this part of our article, we take advantage of the current collaboration to discuss how SLA/T research from multiple theoretical origins can inform L2 practices. Overall, we believe that our research perspectives can be united if and when L2 learning is considered to be the goal of L2 education. All theoretical paradigms we rely on address human language learning. All consider L2 use—as a means and a goal—to be necessary to achieve the learning goal of becoming a socially functional communicator. Hence, we believe that our diverse theoretical and methodological perspectives are well equipped to devise evidence-based pedagogical recommendations and to reemphasize the value of learning additional languages. At the same time, we are fully aware of the fact that the primary readers of the current article will be researchers rather than educators (see Coss & Hwang, 2024; Sato, 2023b). Hence, we do not intend to merely list pedagogical recommendations. Rather, our hopes are (a) to raise researchers' awareness of the possibility of intertheoretical collaboration with the aim of contributing to L2 education, and (b) share some overarching messaging strategies with researchers, who wish to constructively communicate with practitioners and decision makers associated with L2 education.

The goal of L2 education is L2 learning

We believe that successful L2 education results in users of an additional language who can adequately and appropriately communicate with other users of the target language. Hence, we believe that the goal of L2 education is the development of semiotic agility in new communicative repertoires that enable complex, nuanced, recipient-aware, anticipatory, and improvisational communicative capacities. Such a communicative goal can sometimes be achieved without any L2 education, especially in a multilingual society where the learner uses their multiple languages for social purposes. However, L2 education, if done effectively, can facilitate the learning processes by creating an environment in which learners are pedagogically supported and remain engaged in achieving their learning goals.

Here, we underscore another common goal found in many L2 classes, that is, to obtain a better score on a (standardized) test, for example, university entrance exams—Test of English as a Foreign Language (TOEFL), Test of English for International Communication (TOEIC), International English Testing System (IELTS), among others—or school-based tests (see Rouffet et al., 2023). While achieving high scores on these tests does provide learners with a wider range of educational and vocational opportunities, we argue that a larger communicative repertoire in the target language is L2 education's ultimate goal—whether that be in the modality of writing, speaking, or signing. In the remainder of this article, we focus on spontaneous communicative skills—both in speaking and writing, or cross-modalities—as the goal of L2 education.

L2 learning benefits one's life

We suspect that technology will advance in the coming decades to the extent that people will be able to communicate with each other without knowing one another's language. Translators and communication devices will become more sophisticated, and people will communicate their ideas with greater ease. Generative artificial intelligence (GenAI) currently allows people to express themselves with structurally accurate written language, and increasingly, in voice communication modalities as well. As these technologies evolve, one may argue that L2 teaching will lose its purpose. Perhaps related, enrollment in teacher training programs has been declining worldwide to the extent that some universities have closed down their L2 programs and/or L2 teacher education programs in recent years. If this trend continues, one may argue that L2 learning research will lose its purpose as well. However, we argue that SLA/T and its research will remain relevant for two reasons: First, GenAI-supported communication and communication via one's own embodied personal knowledge and skills are vastly different, as stressed by Perspective 3 (by Thorne and Hellermann). Second, SLA/T is not only about what a learner can currently do with the language (i.e., product) but also what they experience and how they change while learning and using the language for interpersonal, educational, and professional purposes (i.e., process).

Research has shown numerous benefits from learning an L2. For example, learners' brain structures are altered because of cognitive demands that L2 learning imposes on the brain (Schweizer et al., 2012). Research has also shown that L2 learning leads to increased cognitive flexibility and executive functioning (Kroll et al., 2015). Consequently, L2 learners may reduce their decision-making biases and improve their objectivity and problem-solving skills (Fan et al., 2015; Keysar et al., 2012). Furthermore, it has been found that being bilingual may delay the onset of dementia (Bak, 2016; Cape et al., 2021). In addition, L2 learning and bilingualism more generally may lead to the enhanced capacity for intersubjectivity, empathy, and perspective taking due to exposure to the target language and its history, culture, and people (Javor, 2016; Schroeder, 2018; Xia & Haas, 2023). Learning a new language affects the ways in which learners analyze and use their L1 as well as ways in which they perceive their own culture and identities. Overall, during the L2 learning process, learners may augment their social and linguistic awareness, cultural knowledge, and empathy toward users of other world languages.

The developed L2 repertoire (i.e., the learning product), especially when a learner reaches a high proficiency level, has shown to benefit other types of learning such as mathematics (Sfard, 2007). Additionally, the developed L2 skills and a new social identity help learners thrive in their lives. For immigrants, L2 learning is crucial to functioning in the target society and for integrating into the new environment and establishing their new life (e.g., finding work, going to school and university, dealing with health issues, and so on). In turn, the target society benefits from newcomers because they contribute to the linguistic, cultural, and economic prosperities of the society (see Ayres-Bennett & Hafner, 2022). For learners in a foreign language setting, learning the language of the new environment allows a person insight into and access to the cultures of a new place. None of these benefits can be achieved via machine translation or GenAI. We will discuss the use of technologies for pedagogical purposes later, however.

L2 learners bring their individual backgrounds into classrooms

L2 education may be unique in the sense that teachers are tasked to consider a variety of individual students' social, cultural, and linguistic backgrounds (see Perspectives 1 and 2). In other words, even though an L2 learner may have a limited L2 repertoire at the outset, they are not starting the learning process from zero (Perdue, 1993). All L2 learners, including young learners, have unique social identities formed within their original L1 or multilingual contexts (see Perspective 3). Additionally, older learners have established world views and habits influenced by their developmental histories including their education in L1 literacy. This means that in a given L2 class, students will approach learning activities in a variety of ways that may differ from those expected by the teacher (Coughlan & Duff, 1994). Similarly, learners in content-based classes bring in different levels of content knowledge (e.g., mathematical knowledge), meaning that the ability to communicate in an L2 in a classroom depends both on knowledge of the L2 and of the subject matter (Dalton-Puffer, 2011). All these contextual elements and individual backgrounds interact with the outcome of L2 education.

Perhaps most importantly, as Perspective 2 (by Alexopoulou) highlights, L2 learners have their own L1(s) and additional language repertoires. Unfortunately, it is still the case that many immigrant children as L2 learners are categorized as students with disabilities and placed in special education classes solely because of their lack of skills in the language of schooling. This is largely due to a misunderstanding of SLA/T processes. Such a deficit view (Firth & Wagner, 1997) leads to consequential and negative social and educational categorizations and ignores the fact that all children possess linguistic abilities and content knowledge, possibly in multiple languages. L1 repertoires are not only linguistic but are also conceptual as a function of the culture and worldview represented in their L1. What (L2) education should do then is to consider and respect L2 learners' social, cultural, and linguistic backgrounds and take advantage of these developed abilities for L2 learning. Proposals for such a direction include critical pedagogy, inclusive education, translanguaging pedagogy, culturally responsive and culturally sustaining pedagogies, and crosslinguistic pedagogy.

L2 use is necessary for L2 learning

Given our shared expertise and interest, we focus in this section on ways in which L2 use can be facilitated in instructed settings. We define L2 use as the language that a learner is exposed to and, importantly, the language they use as a semiotic tool to communicate with people and engage with materials in their environment. In this sense, L2 use is necessary for developing L2 communicative abilities. Regardless of the learner's social identities, age, learning backgrounds, and cognitive (e.g., working memory) and psychological differences (e.g., motivation), they need to be exposed to massive amounts of the L2 and to have the opportunity to use it for meaningful purposes (see Perspective 1 by Michel and Sato and Perspective 3 by Thorne and Hellermann). Even in a rich and supportive SLA/T

environment, learners need to commit to years of effort in order to achieve advanced communicative and interactional L2 abilities. Such an endeavor is challenging, particularly for learners situated in foreign language contexts because they may be afforded only a few hours per week of L2 exposure and use. It is also challenging for adult immigrants who have jobs and families, and who can spare only a few hours per week for L2 classes. For such learning cases, our suggestion for increasing L2 use in the classroom faces logistical issues.

To this end, although we dispute a potential future direction where technology (e.g., GenAI) replaces L2 education, we strongly support technology use for L2 education (see Thorne, 2024). Contemporary language learners have unprecedented access to digital media and communities in thousands of world languages that can provide learners with contexts for engagement in meaningful language use. In addition to classroom teaching, teachers can facilitate access to digital resources by curating libraries of media sources including movies, music, *YouTube* channels, social media groups, language learning apps, uses of GenAI, and online games. By acting as active curators, language teachers can use their expertise to suggest a range of technology-assisted learning opportunities that can motivate learners to engage in self-directed inquiry, relationship building, and consequential participation in communities of practice (see Perspective 3 by Thorne and Hellermann). Teachers can also ensure that their students' learning experiences outside the classroom, whether technology supported or not, are meaningfully connected to classroom L2 use and explicit instruction (Reinders et al., 2022; Thorne & Hellermann, 2022).

Research has repeatedly shown that even L2 learners who have lived in the target language community benefit from L2 instruction to develop L2 knowledge that they were likely not exposed to in conversational language outside the classroom, such as the capacity to communicate proficiently in formal registers of the language for professional and academic purposes. Research, especially of ISLA (see Perspective 1 by Michel and Sato), has produced a number of pedagogical suggestions for teachers. Suggestions range from ways in which teachers can modify L2 input, provide corrective feedback, focus students' attention to specific linguistic forms, and organize oral production activities, to ways in which teachers can help students take advantage of learning opportunities (e.g., metacognition), raise students' meta-level awareness of L2 use (e.g., critical language awareness), and boost student psychology (e.g., motivation) so that they increase their engagement with L2 use, all of which aim to enhance authentic L2 use and/or intervene in learners' cognitive processes (see DeKeyser & Prieto Botana, 2019; Loewen & Sato, 2017; Polat et al., 2020; Sato & Loewen, 2019b).

CONCLUSION

In this article, we exhibited how we understand and investigate SLA/T within our own frameworks and engaged in the synergistic opportunity to explore our common goals of connecting research findings to pedagogical practice. Due to the venue (i.e., a research journal), we primarily discussed what researchers can do for practitioners; by no means, however, we are promoting the unidirectional knowledge flow from researchers to practitioners. Rather, we believe that equitable collaboration between researchers and practitioners is a crucial setup for empirical research to have a true impact on education (see Sato, 2023b). Overall, once we focused on arriving at a united voice to communicate our research with teachers, identifying overall pedagogical suggestions was not as challenging as we expected. We wish to inspire other researchers to leave their comfort zone and work with researchers from different theoretical and methodological paradigms as well as directly with classroom teachers. In so doing, we can collectively serve the scientific advancement of L2 development in order to productively impact curricular decision-making and pedagogical processes. We believe that a preferred future of SLA/T research and education should exist in a comingled, collaborative, equitable, and mutually beneficial relationship among the multiple stakeholders of educational decision-making while taking advantage of and complementing each other's professional experience and knowledge.

AUTHOR CONTRIBUTIONS

Masatoshi Sato: conceptualization (equal), writing-original draft preparation (lead), writing-review and editing (equal); Steven L. Thorne: conceptualization (equal), writing-original draft preparation (equal), writing-review and editing (lead); Marije Michel: conceptualization (equal), writing-original draft preparation (equal), writing-review and editing (lead); Theodora Alexopoulou: conceptualization (equal), writing-original draft preparation (equal), writing-review and editing (supporting), John Hellermann: conceptualization (equal), writing-original draft preparation (equal), writing-review and editing (equal).

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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REFERENCES

Alexopoulou, T., Geertzen, J., Korhonen, A., & Meurers, D. (2015). Exploring big educational learner corpora for SLA research: Perspectives on relative clauses. *International Journal of Learner Corpus Research*, *1*, 96–129. http://doi.org/10.1075/ijlcr.1.1.04ale

Alexopoulou, T., Meurers, D., & Murakami, A. (2022). Big data in SLA. In N. Ziegler & M. González-Lloret (Eds.), *The Routledge handbook of second language acquisition and technology* (pp. 92–106). Routledge.

Andringa, S., & Rebuschat, P. (2015). New directions in the study of implicit and explicit learning: An introduction. *Studies in Second Language Acquisition*, *37*, 185–196. http://doi.org/10.1017/S027226311500008X

Appadurai, A. (2015). Mediants, materiality, normativity. *Public Culture*, *27*, 221–237. http://doi.org/10.1215/08992363-2841832

Atkinson, D. (2010). Extended, embodied cognition and second language acquisition. *Applied Linguistics*, *31*, 599–622. https://doi.org/10.1093/applin/amq009

Ayres-Bennett, W., & Hafner, M. (2022). The economic value to the UK of speaking other languages. *Languages, Society and Policy*. https://doi.org/10.17863/CAM.86966

Bak, T. (2016). Language lessons to help protect against dementia. *British Medical Journal*, *354*, i5039–i5039. https://doi.org/10.1136/bmj.i5039

Baker, M. (2011). Formal generative typology. In B. Heine & H. Narrog (Eds.), *The Oxford handbook of linguistic analysis* (pp. 285–312). Oxford University Press.

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Becker, A. (2022). 'I'm also trying to figure out the identity of my students.': Teachers' multilingual identity negotiation in the heritage language classroom. *International Journal of Multilingualism*, *21*, 574–587. https://doi.org/10.1080/14790718.2022.2078328

Becker, A. L. (1988). Language in particular: A lecture. In D. Tannen (Ed.), *Linguistics in context: Connecting, observing, and understanding* (pp. 17–35). Ablex.

Block, D. (2003). *The social turn in second language acquisition*. Georgetown University Press.

Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge University Press.

Bourdieu, P. (1991). *Language and symbolic power*. Harvard University Press.

Bryfonski, L., & Mackey, A. (2023). *The art and science of language teaching*. Cambridge University Press.

Cape, R., Vega-Mendoza, M., Bak, T. H., & Sorace, A. (2021). Cognitive effects of Gaelic medium education on primary school children in Scotland. *International Journal of Bilingual Education and Bilingualism*, *24*, 1065–1084. https://doi.org/10.1080/13670050.2018.1543648

Chomsky, N. (1972). *Aspects of the theory of syntax*. MIT Press.

Clark, A. (2008). *Supersizing the mind: Embodiment, action, and cognitive extension*. Oxford University Press.

Clark, H. H. (1996). *Using language*. Cambridge University Press.

Cole, M. (1996). *Cultural psychology: A once and future discipline*. Belknap Press.

Coss, M. D., & Hwang, H.-B. (2024). Issues with pedagogical implications in applied linguistics research: A mixed-methods systematic evaluation. *Research Methods in Applied Linguistics*, *3*, 100094. https://doi.org/10.1016/j.rmal.2023.100094

Coughlan, P., & Duff, P. (1994). Same task, different activities: Analysis of a second language acquisition task from an activity theory perspective. In J. P. Lantolf & G. Appel (Eds.), *Vygotskian approaches to second language research* (pp. 174–193). Ablex.

Dalton-Puffer, C. (2011). Content-and-language integrated learning: From practice to principles? *Annual Review of Applied Linguistics*, *31*, 182–204. https://doi.org/10.1017/S0267190511000092

Darvin, R., & Norton, B. (2015). Identity and a model of investment in applied linguistics. *Annual Review of Applied Linguistics*, *35*, 36–56. https://doi.org/10.1017/S0267190514000191

DeKeyser, R. (2017). Knowledge and skill in ISLA. In S. Loewen & M. Sato (Eds.), *The Routledge handbook of instructed second language acquisition* (pp. 15–32). Routledge.

DeKeyser, R. & Botana, G. P. (Eds.). (2019). *Doing SLA research with implications for the classroom: Reconciling methodological demands and pedagogical applicability*. John Benjamins.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

Dewaele, J. M., & MacIntyre, P. D. (2019). The predictive power of multicultural personality traits, learner and teacher variables on foreign language enjoyment and anxiety. In M. Sato, & S. Loewen (Eds.), *Evidence-based second language pedagogy: A collection of instructed second language acquisition studies* (pp. 263–286). Routledge.

Douglas Fir Group. (2016). A transdisciplinary framework for SLA in a multilingual world. *Modern Language Journal*, *100*, 19–47. https://doi.org/10.1111/modl.12301

Duff, P. A. (2017). Motivation for learning languages other than English in an English-dominant world. *Modern Language Journal*, *101*, 597–607. http://doi.org/10.1111/modl.12416

Ellis, N. C., & Sagarra, N. (2011). Learned attention in adult language acquisition: A replication and generalisation study and meta analysis. *Studies in Second Language Acquisition*, *33*, 589–624. https://doi.org/10.1017/S0272263111000325

Enfield, N. J. (2023). Linguistic concepts are self-generating choice architectures. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *378*, 20210352. https://doi.org/10.1098/rstb.2021.0352

Enfield, N. J., & Sidnell, J. (2022). *Consequences of language: From primary to enhanced intersubjectivity*. MIT Press.

Ericsson, A., Krampe, R., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, *100*, 363–406. https://psycnet.apa.org/doi/10.1037/0033-295X.100.3.363

Ericsson, A., & Pool, R. (2016). *Peak: Secrets from the new science of expertise*. Houghton Mifflin Harcourt.

Evans, N. (2010). Semantic typology. In J. J. Song (Ed.), *The Oxford handbook of linguistic typology* (pp. 504–533). Oxford University Press.

Fan, S., Liberman, Z., Keysar, B., & Kinzler, K. (2015). The exposure advantage: Early exposure to a multilingual environment promotes effective communication. *Psychological Science*, *26*, 1090–1097. https://doi.org/10.1177/0956797615574699

Firth, A., & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *Modern Language Journal*, *81*, 285–300. https://doi.org/10.1111/j.1540-4781.1997.tb05480.x

Flynn, S., & Foley, C. (2009). Research methodology in second language acquisition from a linguistic perspective. In W. C. Ritchie & T. K. Bhatia (Eds.), *The new handbook of second language acquisition* (pp. 29–41). Emerald.

Ford, C. E., Fox, B. A., & Thompson, S. A. (2013). Units and/or action trajectories? The language of grammatical categories and the language of social action. In B. S. Reed & G. Raymond (Eds.), *Units of talk—Units of action* (pp. 13–55). John Benjamins.

Fowler, R. (1986). *Linguistic criticism*. Oxford University Press.

Garcia, O., & Kleifgen, J. A. (2020). Translanguaging and literacies. *Reading Research Quarterly*, *55*, 553–571. https://doi.org/10.1002/rrq.286

Gass, S. M., & Mackey, A. (2020). Input, interaction, and output in L2 acquisition. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition* (pp. 192–222). Routledge.

Geertzen, J., Alexopoulou, T., & Korhonen, A. (2013). Automatic linguistic annotation of large scale L2 databases: The EF-Cambridge open language database (EFCAMDAT). In R. T. Miller, K. I. Martin, C. M. Eddington, A. Henery, N. M. Miguel, A. M. Tseng, A. Tuninetti, & D. Walter (Eds.), *Selected Proceedings of the 2012 Second Language Research Forum: Building bridges between disciplines* (pp. 240–254). Cascadilla Proceedings Project.

Gilabert, R., Comelles, E., Castellví, J., Malicka, A., Barón, J., Brennan, K., Trager, V., & Arnold, G. (2024). *TaskGen*. https://taskgen.eu/

Goddard, C. (2001). Universal units in the lexicon. In M. Haspelmath, E. König, W. Oesterreicher, & W. Raible (Eds.), *Language typology and language universals* (pp. 1190–1202). De Gruyter Mouton.

Godfroid, A. (2016). The effects of implicit instruction on implicit and explicit knowledge development. *Studies in Second Language Acquisition*, *38*, 177–215. https://doi.org/10.1017/S0272263115000388

Gombert, W. (2022). *From "learning to use" towards "using to learn"? Long-term effects of structure-based versus dynamic usage-based programs for French* [Doctoral dissertation, Groningen University]. https://research.rug.nl/en/publications/from-learning-to-use-towards-using-to-learn-long-term-effects-of-

Gomez, L., Woodbury, A., & Landry, M. (Hosts), (2019–present). *Teacher talking time* [Audio podcast]. https://www.learnyourenglish.net/podcast

Goodwin, C. (1981). *Conversational organization: Interaction between speakers and hearer*. Academic Press.

Goodwin, C. (2017). *Co-operative action*. Cambridge University Press.
Goodwin, M. H., & Goodwin, C. (1986). Gesture and coparticipation in the activity of search for a word. *Semiotica*, *62*, 51–75. http://doi.org/10.1515/semi.1986.62.1-2.51
Greenberg, J. (1966). Some universals of grammar with particular reference to the order of meaningful elements. In J. Greenberg (Ed.), *Universals of language: Report of a conference held at Dobbs Ferry, New York, 1961* (pp. 13–15). MIT Press.
Gurzynski-Weiss, L., & IATBLT. (n.d.). *The TBLT language learning task bank*. https://tblt.indiana.edu
Hellermann, J. (2008). *Social actions for classroom language learning*. Multilingual Matters.
Hellermann, J. (2018). Languaging as competencing: Considering language learning as enactment. *Classroom Discourse*, *9*, 40–56. https://doi.org/10.1080/19463014.2018.1433052
Hellermann, J., & Thorne, S. L. (2022). Collaborative mobilizations of interbodied communication for cooperative action. *Modern Language Journal*, *106*, 89–112. https://doi.org/10.1111/modl.12754
Hellermann, J., Thorne, S. L., & Haley, J. (2019). Building socio-environmental infrastructures for learning in the wild. In J. Hellermann, S. W. Eskildsen, S. Pekarek-Doehler, & A. Piirainen-Marsh (Eds.), *Language learning 'in the wild': Using conversation analysis to discover the complex ecology of learning-in-action* (pp. 193–218). Springer.
Hopper, P. (1998). Emergent grammar. In M. Tomasello (Ed.), *The new psychology of language: Cognitive and functional approaches to language study* (pp. 155–175). Lawrence Erlbaum.
Hopper, P. (2015). Temporality and the emergence of a construction: A discourse approach to sluicing. In A. Deppermann & S. Günthner (Eds.), *Temporality in interaction* (pp. 123–145). John Benjamins.
Huang, Y., Murakami, A., Alexopoulou, T., & Korhonen, A. (2018). Dependency parsing of learner English. *International Journal of Corpus Linguistics*, *23*, 28–54. https://doi.org/10.1075/ijcl.16080.hua
Hulstijn, J., Young, R., Ortega, L., Bigelow, M., DeKeyser, R., Ellis, N., Lantolf, J., Mackey, A., & Talmy, S. (2014). Bridging the gap: Cognitive and social approaches to research in second language learning and teaching. *Studies in Second Language Acquisition*, *36*, 361–421. http://doi.org/10.1017/S0272263114000035
Hutchins, E. (1995). *Cognition in the wild*. MIT Press.
Ionin, T. (2023). Formal theory-based methodologies. In A. Mackey & S. Gass (Eds.), *Current approaches in second language acquisition research: A practical guide* (pp. 33–50). Wiley/Blackwell.
Jarvis, S., & Pavlenko, A. (2007). *Crosslinguistic influence in language and cognition*. Routledge.
Javor, R. (2016). Bilingualism, theory of mind and perspective-taking: The effect of early bilingual exposure. *Psychology and Behavioral Sciences*, *5*, 143–148. https://doi.org/10.11648/j.pbs.20160506.13
Jiang, N. (2004). Morphological insensitivity in second language processing. *Applied Psycholinguistics*, *25*, 603–634.
Keijzer, M., Brouwer, J., van den Berg, F., & van der Ploeg, M. (2023). Experimental methods to study late-life language learning. In S. Zufferey & P. Gygax (Eds.), *The Routledge handbook of experimental linguistics* (pp. 473–485). Routledge. https://doi.org/10.4324/9781003392972-34
Kellerman, E. (1983). Now you see it now you don't. In S. Gass & L. Slinker (Eds.), *Language transfer in language learning* (pp. 112–134). Newbury House.
Kendon, A. (1967). Some functions of gaze direction in social interaction. *Acta Psychologica*, *26*, 22–63. https://doi.org/10.1016/0001-6918(67)90005-4
Keysar, B., Hayakawa, S. L., & An, S. G. (2012). The foreign-language effect: Thinking in a foreign tongue reduces decision biases. *Psychological Science*, *23*, 661–668. https://doi.org/10.1177/0956797611432178
Kim, Y., & Michel, M. (2023). Linguistic alignment in second language acquisition: A methodological review. *System*, *115*, 103007. https://doi.org/10.1016/j.system.2023.103007
Kormos, J. (n.d.). *ENGaGE: Digital English and German task bank for 4th to 8th class dyslexic learners*. https://engage.uni-miskolc.hu/
Korvesi, E., & Michel, M. (2022). Chatting with your peers across modalities: Effects of performing increasingly complex written computer-mediated tasks on oral L2 development. *Languages*, *7*, 276. https://doi.org/10.3390/languages7040276
Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
Kroll, J., Dussias, P., Bice, K., & Perrotti, L. (2015). Bilingualism, mind, and brain. *Annual Review of Linguistics*, *1*, 377–394. https://doi.org/10.1146/annurev-linguist-030514-124937
Kubota, R., Aoyama, R., Kajigaya, T., & Deschambault, R. (2022). Illuminating language users in the discourse of linguistic diversity: Toward justice-informed language education. *Educational Linguistics*, *1*, 290–308. https://doi.org/10.1515/eduling-2022-0011
Lantolf, J., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford University Press.
Latour, B. (1999). On recalling ANT. In J. Law & J. Hassard (Eds.), *Actor network theory and after* (pp. 15–25). Blackwell.
Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Oxford University Press.
Lee, S. K., & Huang, H. T. (2008). Visual input enhancement and grammar learning: A meta-analytic review. *Studies in Second Language Acquisition*, *30*, 307–331. https://doi.org/10.1017/S0272263108080479
Levis, J. M., Derwing, T. M., & Sonsaat-Hegelheimer, S. (2022). *Second language pronunciation: Bridging the gap between research and teaching*. John Wiley & Sons.
Li, S., Hiver, P., & Papi, M. (Eds.). (2022). *The Routledge handbook of second language acquisition and individual differences*. Routledge.

Loewen, S., & Sato, M. (Eds.). (2017). *The Routledge handbook of instructed second language acquisition*. Routledge.
Loewen, S. (2020). *Introduction to instructed second language acquisition* (2nd ed.). Routledge.
Loewen, S., & Sato, M. (2018). State-of-the-arts article: Interaction and instructed second language acquisition. *Language Teaching*, *51*, 285–329. https://doi.org/10.1017/S0261444818000125
Loewen, S., & Sato, M. (2024). *A practical guide to second language learning and teaching*. Cambridge University Press. https://doi.org/10.1017/9781108780520
Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of research on language acquisition* (Vol. 2, pp. 413–468). Academic Press.
Marsden, E., Alferink, I., Andringa, S., Bolibaugh, C., Collins, L., Jackson, C., Kasprowicz, R., O'Reilly, D., & Plonsky, L. (2018). Open accessible summaries in language studies (OASIS) [Database]. https://www.oasis-database.org
May, S. (2014). *The multilingual turn: Implications for SLA, TESOL and bilingual education*. Routledge.
McWhinney, B. (2008). A unified model. In N. C. Ellis & P. Robinson (Eds.), *Handbook of cognitive linguistics and second language acquisition* (pp. 341–371). Lawrence Erlbaum Press.
Michel, M. (2018). Practising online with your peers: The role of text chat for second language development. In C. Jones (Ed.), *Practice in second language learning* (pp. 164–196). Cambridge University Press.
Michel, M. (2023). Key concepts in applied linguistics: Task-based language teaching. *ELIA*, *23*, 317–328. https://doi.org/10.12795/elia.2023.i23.10
Michel, M. (2024). Un strålande futuro needs mehr dan два langues [A bright future needs more than two languages]. *Inaugural Lectures*, https://doi.org/10.21827/65688fb08df31
Michel, M., Révész, A., Lu, X., Kourtali, N., Lee, M., & Borges, L. (2020). Investigating L2 writing processes across independent and integrated tasks: A mixed-methods study. *Second Language Research*, *36*, 307–334. https://doi.org/10.1177/0267658320915501
Michel, M., Stiefenhöfer, L., Verspoor, M., & Manchón, R. M. (2021). L2 writing processes of language learners in individual and collaborative writing conditions. In R. M. Manchón & C. Polio (Eds.). *The Routledge handbook of second language acquisition and writing* (pp. 67–80). Routledge.
Michel, M., Vidon, C., Graaff, R. D., & Lowie, W. (2021). Language learning beyond English in the Netherlands: A fragile future? *European Journal of Applied Linguistics*, *9*, 159–182. https://doi.org/10.1515/eujal-2020-0020
Montero Perez, M. (2020). Multimodal input in SLA research. *Studies in Second Language Acquisition*, *42*, 653–663. https://doi.org/10.1017/S0272263120000145
Mori, J., & Hayashi, M. (2006). The achievement of intersubjectivity through embodied completions: A study of interactions between first and second language speakers. *Applied Linguistics*, *27*, 195–219. https://doi.org/10.1093/applin/aml014
Muñoz, C. (2008). Symmetries and asymmetries of age effects in naturalistic and instructed L2 learning. *Applied Linguistics*, *29*, 578–596. https://doi.org/10.1093/applin/amm056
Murakami, A., & Alexopoulou, T. (2016). L1 influence on the acquisition order of English grammatical morphemes: A learner corpus study. *Studies in Second Language Acquisition*, *38*, 365–401. https://doi.org/10.1017/S0272263115000352
Nieuwsbrief MVT. (2021–present). https://www.taalwijs.nu/nieuwsbrief
Norton, B., & McKinney, C. (2011). Identity and second language acquisition. In D. Atkinson (Ed.), *Alternative approaches to second language acquisition* (pp. 73–94). Routledge.
Ortega, L. (2012). Epistemological diversity and moral ends of research in instructed SLA. *Language Teaching Research*, *16*, 206–226. https://doi.org/10.1177/0267658311431373
Ortega, L. (2014). Ways forward for a bi/multilingual turn in SLA. In S. May (Ed.), *The multilingual turn: Implications for SLA, TESOL and bilingual education* (pp. 32–52). Routledge.
Paradis, J., Rusk, B., Duncan, T. S., & Govindarajan, K. (2017). Children's second language acquisition of English complex syntax: The role of age, input, and cognitive factors. *Annual Review of Applied Linguistics*, *37*, 148–167. https://doi.org/10.1017/S0267190517000022
Paradis, J., Tulpar, Y., & Arppe, A. (2016). Chinese L1 children's English L2 verb morphology over time: Individual variation in long-term outcomes. *Journal of Child Language*, *43*, 553–580. https://doi.org/10.1017/S0305000915000562
Parodi, T., Schwartz, B. D., & Clahsen, H. (2004). On the L2 acquisition of the morphosyntax of German nominals. *Linguistics*, *42*, 669–705. https://doi.org/10.1515/ling.2004.022
Pattemore, A., Cabrera Fernandez, B., Lopez, M., & Michel, M. (2024). Maximising the potential of plurilingual subtitled audiovisual input: Learning L3 words and multiword units with L2 audio. *Innovation in Language Learning and Teaching*, 1–16. https://doi.org/10.1080/17501229.2024.2366254
Perdue, C. (Ed.). (1993). *Adult language acquisition: Cross-linguistic perspectives*. Cambridge University Press.
Piirainen-Marsh, A., & Lilja, N. (2019). How wild can it get? (Re)configuring questions "in the wild". In J. Hellermann, S. W. Eskildsen, S. P. Doehler, & A. Piirainen-Marsh (Eds.), *Conversation analytic research on learning-in-action: The complex ecology of L2 interaction in the wild* (pp. 161–192). Springer.
Polat, N., Gregersen, T., & MacIntyre, P. D. (2020). *Research-driven pedagogy: Implications of L2A theory and research for the teaching of language skills*. Routledge.
Popper, K. (1976). *Unended quest: An intellectual autobiography*. Fontana.
Reinders, H., Lai, C., & Sundqvist, P. (2022). *The Routledge handbook of language learning beyond the classroom*. Routledge.

Révész, A., Michel, M., & Gilabert, R. (2016). Measuring cognitive task demands using dual-task methodology, subjective self-ratings, and expert judgments: A validation study. *Studies in Second Language Acquisition*, *38*, 703–737. https://doi.org/10.1017/S0272263115000339

Roberts, I. (2019). *Parameter hierarchies and universal grammar*. Oxford University Press.

Rouffet, C., van Beuningen, C., & de Graaff, R. (2023). Constructive alignment in foreign language curricula: An exploration of teaching and assessment practices in Dutch secondary education. *Language Learning Journal*, *51*, 344–358.

Rousse-Malpat, A. (Host), (2022–present) *Je suis #profdeFLE* [Audio podcast]. https://rug.nl/research/research-let/onderzoek-per-vakgebied/europese-talen-en-culturen/podcast-jesuisprofdefle

Rousse-Malpat, A., Steinkrauss, R., & Verspoor, M. (2019). Structure-based or dynamic usage-based instruction: Long-term effects on (morpho) syntactic and lexical complexity in writing samples. *Instructed Second Language Acquisition*, *3*, 181–205. https://doi.org/10.1558/isla.38054

Sato, M. (2023a). Metacognitive approaches to collaborative writing: Theoretical and pedagogical proposals. In M. Li & M. Zhang (Eds.), *L2 collaborative writing in diverse learning contexts* (pp. 31–51). John Benjamins. https://doi.org/10.1075/lllt.59.02sat

Sato, M. (2023b). Navigating the research-practice relationship: Professional goals and constraints. *Language Teaching*, 1–16. https://doi.org/10.1017/S0261444823000423

Sato, M. (2023c). Skill learning theories and language teaching: Different strokes for different folks. In Y. Suzuki (Ed.), *Practice and automatization in second language research: Theory, methods, and pedagogical implications* (pp. 63–86). Routledge. https://doi.org/10.4324/9781003414643-4

Sato, M. (2025). Instructed second language acquisition: Inclusivity and equity for the common goal. In M. Young-Scholten, A. F. Dobao, & A. Ho-Cheong Leung (Eds.), *The Cambridge handbook of second language acquisition* (2nd ed.). Cambridge University Press.

Sato, M., & Cárcamo, B. (2024). Be(com)ing an educational researcher in the Global South (and beyond): A focus on the research-practice relationship. *Educational Researcher*, *53*, https://doi.org/10.3102/0013189x241231548

Sato, M., Chong, S. W., Aktar, T., Cowell, J., Kong, M. S., & Shaahdadi, M. (2024). Creating and sustaining a platform for researchers and teachers to communicate: An example of *TESOLgraphics*. *Innovation in Language Learning and Teaching*, 1–11. https://doi.org/10.1080/17501229.2024.2404613

Sato, M., & Loewen, S. (2019a). Do teachers care about research? The research-pedagogy dialogue. *ELT Journal*, *73*, 1–10. https://doi.org/10.1093/elt/ccy048

Sato, M., & Loewen, S. (Eds.). (2019b). *Evidence-based second language pedagogy: A collection of instructed second language acquisition studies*. Routledge. https://doi.org/10.4324/9781351190558

Sato, M., & Loewen, S. (2022). The research-practice dialogue in second language learning and teaching: Past, present, and future. *Modern Language Journal*, *106*, 509–527. https://doi.org/10.1111/modl.12791

Sato, M., Loewen, S., & Pastushenkov, D. (2022). 'Who Is my research for?': Researcher perceptions of the research–practice relationship. *Applied Linguistics*, *43*, 625–652. https://doi.org/10.1093/applin/amab079

Sawyer, K. (2002). Unresolved tensions in sociocultural theory: Analogies with contemporary sociological debates. *Culture & Psychology*, *8*, 283–305. https://doi.org/10.1177/1354067x0283002

Schachter, J. (1974). An error in error analysis. *Language Learning*, *24*, 205–214. https://doi.org/10.1111/j.1467-1770.1974.tb00502.x

Schat, E., van der Knaap, E., & Graaff, R. D. (2023). Implementation of an integrated intercultural literary pedagogy intervention in Spanish-as-a-foreign-language classrooms in the Netherlands: An effect study at the secondary level. *Language Teaching Research*. https://doi.org/10.1177/13621688231156391

Schegloff, E. (1972). Notes on conversational practice: Formulating place. In D. Sudnow (Ed.), *Studies in social interaction* (pp. 75–119). Free Press.

Schepens, J., van Hout, R., & Jaeger, T. F. (2020). Big data suggest strong constraints of linguistic similarity on adult language learning. *Cognition*, *194*, 104056. https://doi.org/10.1016/j.cognition.2019.104056

Schepens, J. J., van Hout, R. W. N. M., & van der Slik, F. W. P. (2022). Linguistic dissimilarity increases age-related decline in adult language learning. *Studies in Second Language Acquisition*, *45*, 167–188. https://doi.org/10.1017/S0272263122000067

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, *11*, 129–158. https://doi.org/10.1093/applin/11.2.129

Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 3–32). Cambridge University Press.

Schroeder, S. R. (2018). Do bilinguals have an advantage in theory of mind? A meta-analysis. *Frontiers in Communication*, *3*, 36. https://doi.org/10.3389/fcomm.2018.00036

Schweizer, T. A., Ware, J., Fischer, C. E., Craik, F. I., & Bialystok, E. (2012). Bilingualism as a contributor to cognitive reserve: Evidence from brain atrophy in Alzheimer's disease. *Cortex*, *48*, 991–996. https://doi.org/10.1016/j.cortex.2011.04.009

Searle, J. R. (1992). *The rediscovery of the mind*. The MIT Press.

Sfard, A. (2007). When the rules of discourse change, but nobody tells you: Making sense of mathematics from a commognitive standpoint. *Journal of the Learning Sciences*, *16*, 565–613. http://doi.org/10.1080/10508400701525253

Shatz, I. (2020). Refining and modifying the efcamdat: Lessons from creating a new corpus from an existing large-scale English learner language database. *International Journal of Learner Corpus Research*, *6*, 220–236. https://doi.org/10.1075/ijlcr.20009.sha

Silverstein, M. (2023). *Language in culture: Lectures on the social semiotics of language*. Cambridge University Press.

Slabakova, R. (2009). L2 fundamentals. *Studies in Second Language Acquisition*, *31*, 1–19. http://doi.org/10.1017/S0272263109090263

Slabakova, R. (2016). *Second language acquisition*. Oxford University Press.

Smith, R. (2020). *Mentoring teachers to research their classrooms: A practical handbook*. British Council India.

Soulé, M., & Noss, R. (1998). Rewilding and biodiversity: Complementary goals for continental conservation. *Wild Earth*, *8*, 19–28. https://rewilding.org/wp-content/uploads/2012/04/RewildingBiod.pdf

Spada, N., & Lightbown, P. M. (2022). In it together: Teachers, researchers, and classroom SLA. *Modern Language Journal*, *106*, 635–650. https://doi.org/10.1111/modl.12792

Spivey, M. (2007). *The continuity of mind*. Oxford University Press.

Sulis, G., Mercer, S., Babic, S., & Mairitsch, A. (2023). *Language teacher wellbeing across the career span* (Vol. 21). Channel View Publications.

Sundqvist, P., & Sylvén, L. K. (2016). *Extramural English in teaching and learning*. Palgrave Macmillan.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235–253). Newbury.

Thorne, S. L. (2003). Artifacts and cultures-of-use in intercultural communication. *Language Learning & Technology*, *7*, 38–67. http://archives.pdx.edu/ds/psu/11595

Thorne, S. L. (2006). Pedagogical and praxiological lessons from internet-mediated intercultural foreign language education research. In J. A. Belz & S. L. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 2–30). Heinle & Heinle.

Thorne, S. L. (2009). 'Community,' semiotic flows, and mediated contribution activity. *Language Teaching*, *42*, 81–94. http://doi.org/10.1017/S0261444808005429

Thorne, S. L. (2016). Cultures-of-use and morphologies of communicative action. *Language Learning & Technology*, *20*, 185–191. http://llt.msu.edu/issues/june

Thorne, S. L. (2024). Generative artificial intelligence, co-evolution, and language education. *Modern Language Journal*, *108*, 567–572. https://doi.org/10.1111/modl.12932

Thorne, S. L., & Hellermann, J. (2022). Interfacing formal education and language learning beyond the classroom. In H. Reinders, C. Lai, & P. Sundqvist (Eds.), *The Routledge handbook of language learning beyond the classroom* (pp. 36–51). Routledge.

Thorne, S. L., Hellermann, J., & Jakonen, T. (2021). Rewilding language education: Emergent assemblages and entangled actions. *Modern Language Journal*, *105*, 106–125. https://doi.org/10.1111/modl.12687

Thorne, S. L., & Lantolf, J. (2007). A linguistics of communicative activity. In S. Makoni & A. Pennycook (Eds.), *Disinventing and reconstituting languages* (pp. 170–195). Multilingual Matters.

Tomasello, M. (1999). *The cultural origins of human cognition*. Harvard University Press.

Tomasello, M. (2003). *Constructing a language: A usage-based theory of language acquisition*. Harvard University Press.

Tsimpli, I. M., & Dimitrakopoulou, M. (2007). The interpretability hypothesis: Evidence from *wh* interrogatives in second language acquisition. *Second Language Research*, *23*, 215–242. https://doi.org/10.1177/0267658307076546

van Hell, J. G. (2023). The neurocognitive underpinnings of second language processing: Knowledge gains from the past and future outlook. *Language Learning*, *73*(Suppl. 2), 95–138. https://doi.org/10.1111/lang.12601

van Lier, L. (2004). *The ecology and semiotics of language learning*. Kluwer.

VanPatten, B. (1996). *Input processing and grammar instruction in second language acquisition*. Ablex.

VanPatten, B. (2017). Situating instructed language acquisition: Facts about second language acquisition. *Instructed Second Language Acquisition*, *1*, 45–60. https://doi.org/10.1558/isla.33315

VanPatten, B., Keating, G. D., & Leeser, M. J. (2012). Missing verbal inflections as a representational problem: Evidence from self-paced reading. *Linguistic Approaches to Bilingualism*, *2*, 109–140. https://doi.org/10.1075/lab.2.2.01pat

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.). Harvard University Press.

Wagner, J. (2015). Designing for language learning in the wild: Creating social infrastructures for second language learning. In T. Cadierno & S. W. Eskildsen (Eds.), *Usage-based perspectives on second language learning* (pp. 75–101). De Gruyter.

Westergaard, M. (2021). Microvariation in multilingual situations: The importance of property-by-property acquisition. *Second Language Research*, *37*, 379–407. https://doi.org/10.1177/0267658319884116

White, L. (1989). *Universal grammar and second language acquisition*. John Benjamins.

White, L. (2023). Should linguistics be applied and, if so, how? *Language Teaching*, *56*, 349–361. https://doi.org/10.1017/S0261444822000313

Wu, M., & Michel, M. (2024). Complexity-accuracy-lexis-fluency (CALF) as a pedagogical target. In C. A. Chapelle & M. Sato (Eds.), *The Encyclopedia of applied linguistics, second edition: Instructed second language acquisition*. Wiley-Blackwell.

Xia, R. J., & Haas, B. W. (2023). The effect of bilingualism and multicultural experience on social-cognitive processing: A meta-analytic review. *Journal of Cultural Cognitive Science*, *8*, 47–54. https://doi.org/10.1007/s41809-023-00138-y

Yuldashev, A., Fernandez, J., & Thorne, S. L. (2013). Second language learners' contiguous and discontiguous multi-word unit use over time. *Modern Language Journal*, *97*, 31–45. http://doi.org/10.2307/23361910

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