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## Language Development Research, Teaching, and Learning: A Cross-field Perspective

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### Abstract

This reflective piece seeks to shed light on the numerous contributions of Diane Larsen-Freeman to theory construction, applied linguistics, and language education by drawing parallels and insights from the FIFA 2022 Qatar World Cup Final. Looking at the multitude of factors that affect both soccer games and language development research, teaching, and learning, the article explores some of her key publications, chosen for their invitation to us to consider expansive holistic changes that both our research and our language education enterprise badly need. My aim has been to capture some prominent aspects of Diane's unique gifts as a researcher, mentor, thinker, and educator, revealing her lifelong dedication to all these areas and to various fields of language study.

**Keywords:** *Complex Dynamic Systems Theory, Language Development and Education, Teacher Researcher Interface*

### Introduction

The approach that I have taken in this reflective essay dedicated to my esteemed colleague and longtime mentor, Diane Larsen-Freeman, may strike some readers as rather unorthodox. However, throughout my entire professional career, I have found the exploration of fields of study different from my own, and that of any successful human endeavor, infinitely fascinating and invariably informative for both my thinking and practice as an applied linguist and educator. My recent experience watching the FIFA 2022 Cup Final matches and reading the analyses of experts of the game (call it football or soccer) was no exception in this regard. While thoroughly enjoying all the drama and excitement of the matches themselves, I also thought of the multitude of factors that contributed to both the victories and the heart-breaking losses. Specifically, as I reflected on the various elements of the Messi magic, I was led to consider how we as a field also strive for things that excite, engage, and empower but, most

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importantly, how we can initiate wider-range, holistic changes that both our research and language education badly need.

In what follows, I will look at what unfolded in Qatar and what made this World Cup Final quite extraordinary, not just for Messi and La Albiceleste. That analysis serves as the jumping-off point for what is and should be happening in language research, teaching, and learning, and the unique contributions of Diane Larsen-Freeman in all these three areas. I will discuss primarily her most recent publications as it is impossible due to space constraints to do justice to her entire scholarly output - well over 150 journal publications and book chapters, not to mention her books, book series, and virtual presentations.

### **Qatar 2022 and Messi**

Every four years the world is riveted by the FIFA Cup Finals. According to FIFA (1), “more than half of the world's population watched the 2018 World Cup, making it the most widely viewed event in the tournament's history. The final match between France and Croatia was watched by a total of 1.12 billion viewers”.

Preliminary data indicate that the Qatar 2022 tournament broke all records, becoming the most-watched global sports event, with Paris Saint-Germain teammates Kylian Mbappe and Lionel Messi attracting the greatest viewership ever at a FIFA World Cup Final.

The beIN Media Group alone recorded more than 5.4 billion cumulative views on its flagship channel beIN SPORTS (2) across the Middle East and North Africa, and 1.1 billion views on its official social media channels. The final match that ended with Argentina becoming FIFA World Cup Qatar 2022™ winner with a 4-2 victory on penalties against France was watched by a staggering 242.8 million viewers on beIN SPORTS’ free-to-air channel (2).

A monumental 32 million viewers in India tuned into JioCinema (3) on the final day that delivered arguably the most extraordinary FIFA World Cup Final as Argentina picked up the FIFA World Cup Trophy for the first time since 1986. Neighboring Bangladesh showed an unprecedented increase in viewers too, with most people drawn to the matches where Lionel Messi unfailingly delivered the best football has to offer its fans. According to Didier Deschamps (4), even some French fans were on Argentina’s side at the final, unable to resist the bewitching skills of the Argentinian maestro. The *Süddeutsche Zeitung* likened the final to a crowd gathering to see Michelangelo apply the final brushstroke (4).

What is the magic of Messi and what were the deliverables of Qatar 2022 that excited and mesmerized billions of people around the world, regardless of age, class, nationality, ability, and gender; more importantly, what are the ingredients of this magic that can give us food for thought on how to make the learning, researching, and teaching of languages, if not that exciting, at least much more engaging and fruitful?

### **Messi**

In an article in *The New Yorker*, entitled *The Genius of Lionel Messi Just Walking Around*, Jody Rosen (2022) wrote, “The legendary striker can often be found off the ball, strolling and dawdling and looking mildly uninterested.” Yet, both players and spectators feel that he makes all the difference on the pitch. Statistics and his accolades alone reveal only part of the true power of the great Argentinian. He is one of the most prolific scorers of all time but, more importantly still, he has an astounding record of assists. Unlike Cristiano Ronaldo, Messi is a

team player. He brings his squad together both socially and tactically and some analysts refer to him as an affordances magician. He is someone with supreme footballing intelligence, a bigger-picture man. Manchester City's Pep Guardiola describes Messi's walking "as a form of cartography - an exercise in scanning and surveying, taking the measure of the defense, noticing where the vulnerabilities lie, and calculating when and how opportunities might be seized" (cited in Rosen, 2022). Messi also understands the importance of context and the changing dynamics of the game depending on who the other 21 players on the pitch are. His style can change quite dramatically from game to game or from season to season, which unnerves his opponents and creates opportunities for his teammates.

As a faculty member of the MATESOL Program at the School for International Training for 24 years, Larsen-Freeman always embraced Hawkins' I/thou/it framework that captures the dynamic nature of any interactive event, in the case of language teaching between the learners, the teacher, and the subject matter (Hawkins, 1974; Larsen-Freeman, 1991). In contrast to *a priori* planned curricula, her Complexity Theory-inspired approach to instruction holds that it is impossible for teachers to predict the exact outcomes of any classroom exploration. Instead, she calls for a reorientation of the elements of the classroom, where relationality, affordances, and context matter. The I/thou/it model foregrounds dialogic intersubjectivity where the self is always in relation to others. As pointed out in Werner and Todeva (2022), the "I" has been traditionally associated with teachers with their background knowledge and socialization, passions, interests, and sensibilities; "thou" with the students, who bring their lived experiences, prior linguistic and cultural knowledge, and their particular interests, needs, and expectations; and "it" refers to the subject matter, the target language in this case, as well as the sources, processes and data that inform any exploration. The three sides of the triangle support each other, reflecting the multidimensional and interdependent nature of classroom relationships, with teachers, students, and language contributing to the unfolding learning processes in complex and unpredictable ways. Instead of transmitting pre-determined knowledge, the teacher exploits affordances to facilitate focused explorations of the target language, with learners' insights as a key component of the collaboratively generated knowledge. The deliberate use of pronouns rather than nouns in the I/thou/it model is significant. It serves as a useful reminder of the fluidity of our subject positions and creates possibilities for more egalitarian spaces that disrupt all sorts of hierarchies entrenched in society and education (Werner & Todeva, p. 220).

It is important for teachers to carve out spaces for a Messiesque hands-off approach to what is happening in the classroom. In their piece on the four stages of scaffolding, written almost 30 years ago, Tharp & Gallimore (1988) identified a stage where learners are better off figuring things for themselves, without any scaffolding offered by the teacher. Alas, classroom observations indicate that this sound advice is often ignored. Wait time is another factor that is not always given the consideration it deserves even though it has been shown to influence classroom behavior and depth of cognitive processing in a number of important ways. Multiple studies have revealed that extending the pauses between teachers' and students' turns (wait time) needs to be handled skillfully as longer wait times generally offer opportunities for more and richer student generated input and for deeper thinking; on the other hand, too much wait time may result in less-than-optimal learning experiences in the classroom (cf. e.g., Ingram & Elliott, 2016; Mahmud, 2019).

Back to Messi, for the Argentinian maestro family and community are also critically important. In interviews during and after the Cup Final he repeatedly credited the teams he had played for; for him, the hopes and aspirations of his country were instrumental for mobilizing the Argentinian team, not only to continue the legacy of Maradona and get the coveted prize but to take the game to new heights so that a new generation of young players from all parts of the world gets inspired. Here again one can point to publications by Larsen-Freeman where the I/thou/it triangle is situated in the larger circle of learners' real and virtual communities that can have a significant impact on their learning but which, regrettably, are not always fully tapped into (e.g. Larsen-Freeman & Todeva, 2021; Larsen-Freeman et al., 2021). Teachers and students are often blamed when academic achievement falls short. Again taking a Complexity Theory approach, Larsen-Freeman insists that "maximally positive educational outcomes are only possible if we address all the constituents of the educational system as a collective whole - its agents (e.g. teachers, students, and other stakeholders), loci (e.g. intra- and extramural), activities (e.g. learning and teaching), processes (theory, research, and teaching), and symbolic influences (e.g. ideologies and policies)" Larsen-Freeman (2023, p. 7). In a similar vein, Holland and Lave remind us that, "... the forces at play are never only "in" the person, never just a matter of autobiography, nor are they entirely reducible to membership (voluntary or involuntary) in culturally distinctive groups or social categories." (Holland & Lave 2001, p.6; see also Block, 2019, 2022; Pennycook, 2017) The actions of learners, teachers, and researchers are shaped by forces embedded in intricate networks with multiple nesting, thus the power of Complex Dynamic Systems Theory (CDST) with its emphasis on the spatio-temporal context, relationships, and timescales.

At this point I would like to dwell a little more on two of the key descriptors used with regard to Messi – magic and magician. The job of a magician "is – at heart – to manipulate the focus of our attention" (Hari, 2023, p.106). With his off-ball movements, Messi manages to divert the attention of his opponents, opening up spaces for his teammates to take tactically advantageous positions. He is a master of taking advantage of people's blind spots. Similarly, awareness of learners' blind spots is critically important for teachers so that optimal learning can unfold. This goes in equal measure for both remedial and what I call preventative teaching where an instructor brings forth the learners' strengths as well and facilitates and expedites better noticing and understanding (Todeva, 2015a). Looking at a concept Larsen-Freeman introduced in 1995, namely *grammaring*, one can see in action the importance of Focus-on-Form, as opposed to focus on forms (Long, 1991) whereby putting a premium on the meaning-making potential of language, we make, at some point, attention to form a truly needed and in fact an intellectually stimulating act. Indeed, one key incentive for Diane to introduce the notion and the philosophy of grammaring (see in particular Larsen-Freeman, 2003) was her desire to address the so-called inert knowledge problem (Whitehead, 1929) that refers to our inability to apply acquired knowledge – in language learning we witness that phenomenon when classes follow the P/P/U (presentation/practice/use) model (Larsen-Freeman, 1995, 2003, 2014a). By flipping the P/P/U pyramid on its head, initiating first usage-triggered explorations, grammaring takes full advantage of the mobilizing power of "noticing the gap" (Schmidt & Frota, 1986; Swain, 1985, 2000; Swain & Lapkin, 1995). By attempting to share their thoughts, needs, and feelings in genuine exchanges, learners see where perceived gaps in their knowledge and skills are. This motivates them to invest in the learning of a particular

language component (be it a lexical or a grammar related item, a pronunciation challenge or a new pragmatics related norm). Teachers benefit from “noticing the gaps” too. Instead of trying to predict where all the challenges will be, they can seize the affordances they present and subtly guide discussions to areas that will naturally trigger an abundance of a particular challenging construction and, like in jazz, they can use a score (a tentative lesson plan/a syllabus/a curriculum) while simultaneously leaving plenty of room for improvisation (Tomlinson & Germundson, 2007).

I have discussed the concept of grammaring and its evolution in a number of publications and presentations (e.g. Todeva, 2012, 2013a, 2015a, 2015b). Here are some of the key features of exploring language through grammaring where the very choice of term moves us away from the noun *grammar* and all the associations it carries with normativity, rigidity, structures, and rules to something dynamic, playful, and exciting that in our subconsciousness rhymes with fun, high mental alertness activities like surfing, skiing, or cave diving. As I point out in my detailed review in Todeva (2015a), through grammaring we are in a position to achieve a better alignment between the conditions of learning and conditions of use, i.e. it is an approach that engages the students in a psychologically authentic practice (Gatbonton & Segalowitz, 1988; Larsen-Freeman, 2005). Equally important, grammaring is an organic, holistic approach which addresses both accuracy and fluency right from the start; it is communicative, but, notably, it also offers a very solid Focus-on-Form which helps with noticing and understanding; in this respect, the role of the teacher in grammaring is not unlike the job of image developers processing the data from the James Webb Space Telescope who tweak things a little for them to become part of the visible portion of the light spectrum for the human eye (5).

Also worth noting, grammaring is ecological without leaving too much to chance. It promotes socially embedded and intimately personal learning where learners are seen as rich resources and abundantly creative individuals rather than viewed in deficit terms as people with poor skills and limited language abilities. Larsen-Freeman embraced enthusiastically and was an important sounding board when the MATESOL Program at the SIT Graduate Institute was perhaps the first one in the country to offer an advanced seminar on Plurilingual Pedagogy, exploring the importance of tapping into the full linguistic and cultural repertoires of the learners by consistently encouraging and creating spaces for plurilingual and multimodal inquiry and use. When engaged in grammaring, as already indicated, teachers and students start seeing grammar not just as a system of structures and rules, but as a wonderfully economical meaning-making device and an important identity-negotiation tool. With such awareness one stops looking at grammar as a burden and starts investing in a critically important component of language. Practicing “grammar as choice” (Carter & McCarthy, 2006; Larsen-Freeman, 2002) and “grammar as a liberating force” (Widdowson, 1990), one develops a better sense of how things fit together in a language and the range of grammatical expressions one can choose from to best express one’s thoughts and feelings in a nuanced and maximally appropriate way, influenced by a whole host of factors such as register, degree of formality, or deliberate foregrounding of certain information (Todeva, 2015a). For specific examples of what grammaring looks like in the classroom, see for instance, Larsen-Freeman (1991, 2014a, 2020) and Todeva (2012, 2015a, 2015b).

Hawkins refers to subject matter that is engaging as embodied, complex, familiar, and aesthetic in nature. He calls it *elementary*. By elementary he does not mean easy or simple. Rather, genuinely elementary understanding is understanding of the deepest kind “born of a profound engagement with rich, complex phenomena” (Hawkins, 2000, p.59; Rodgers, 2001). The American magician Teller writes that learning, like magic, should make people uncomfortable, because neither are passive acts. “Magic”, he says, “doesn’t wash over you like a gentle, reassuring lullaby. In magic, what you see comes into conflict with what you know, and that discomfort creates a kind of energy and a spark that is extremely exciting”. He finishes his reflection by sharing, “When I go outside at night and look up at the stars, the feeling that I get is not comfort. The feeling that I get is a kind of delicious discomfort at knowing that there is so much out there that I do not understand and the joy in recognizing that there is enormous mystery, which is not a comfortable thing. This, I think, is the principal gift of education.” (as cited in Lahey, 2016).

In a number of publications in recent years, (e.g., Larsen-Freeman, 2014b, 2016a, 2016b, 2018 and Larsen-Freeman & Todeva, 2021), Diane invites us to take a closer look at plurilingualism arguing that the languages within a learner’s repertoire are dynamically interconnected. New linguistic knowledge affects the entire system, leading to the emergence of plurilingual multicompetence (Cook, 1999). Gestural, spatial, tactile, audio, and visual modalities are also integral components of one’s repertoire which functions as a complex adaptive system with soft boundaries. Complexity Theory encourages this ideology of integration, since a system, as already indicated, is “a collective whole, made up of heterogeneous constituents, which are interdependent” (Larsen-Freeman & Todeva, 2021, p. 212). Pennycook’s elaborate analysis of the concept of *semiotic assemblages* invites us “to move beyond the commonplace focus on multilingualism and multimodality.” (Pennycook, 2017, p. 279). Reviewing the work of multiple authors, Kusters similarly makes the case that semiotic repertoires are not located in individual people but are rather “a distributed set of resources that are chained together contingently.” (Kusters, 2021, p.188).

As we argue in Werner and Todeva (2022), by tapping into the communicative potentialities present in the classroom, through a conscious inclusion of multiple languages and modalities, the learning environment becomes increasingly complex. On multiple occasions Diane has emphasized that complex does not mean complicated; rather, a linguistic and media multidimensionality provides more affordances and interactions which can spur adaptation. These, in turn, lead to increased creativity and innovation (Piccardo, 2017). The inclusion of less-powerful languages and non-dominant modalities creates opportunities for students to develop their own socially situated repertoires of plurilingual practices that cross semiotic boundaries. By viewing plurilingualism and multimodality through a Complexity Theory lens, we bring our teaching in line with the world outside our classrooms (Werner & Todeva, 2022, p.219).

One final note on Messi before I look at the World Cup Final in Qatar. Both for his general training and penalty kick preparation, Messi and his teammates drew on very sophisticated transdisciplinary insights from psychology, dietology, and physics to the mechanics of players’ and goalkeepers’ preferred contact patterns (9). Likewise, in the fields of SLA, Applied Linguistics, and language education we have witnessed a similar increasingly growing transdisciplinary cross-fertilization. For an important distinction between cross-disciplinarity

and transdisciplinarity approaches (see, for instance, Larsen-Freeman, 2012a; De Costa & Norton, 2017; the Douglas Fir Group, 2016; Johnson, 2019, and Leung & Valdés, 2019).

### **Qatar**

It was the first time ever that the World Cup Final was held in a Muslim and an Arab country. The choice of venue was surrounded by controversies because of suspicions of bribery and corruption, and due to the hot climate of Qatar and its way of treating immigrant workers and the L.G.B.T.Q. community. Some of the media later admitted that having the Cup Final in the country ended up bringing about improvements in the working conditions of hired labor as the plight of immigrants was put in bold relief. The decision to ban alcohol at the very last minute despite prior agreements to the contrary ultimately proved beneficial too. Multiple polls indicated that spectators and visitors eventually shrugged off the issue, with the majority, mainly female fans, saying this decision in fact led to a safer experience at the tournament (6). Most football fans have vivid memories of what havoc football hooliganism wreaked during and after matches in the past. Qatar 2022 also offered unprecedented accommodations for people with disabilities. This was the first FIFA World Cup to offer audio-descriptive commentary for blind and partially sighted fans globally through the internet, with the service being available in English and Arabic. Three stadiums hosted sensory rooms for fans with autism and sensory access requirements, while every match venue was built to exacting accessibility standards, including accessible parking, seating, bathrooms, and concession stands. FIFA also provided simultaneous interpretation in 15 languages and made language assistance available through 20,000 specially trained volunteers from 150 nationalities (7). Last but not least, many more people who are usually unable to attend because of visa restrictions or financial constraints had a chance to participate in the game's most exciting events. People often vilified or marginalized felt more welcomed and safer, as evidenced by visitor comments from the Middle East, India, Bangladesh and other parts of the world. Cheered by a friendlier audience "underdogs defeated football giants and gave people the power to believe" (Qazi, 2022). Morocco, Japan, Saudi Arabia, Ecuador, Cameroon, Tunisia, and Croatia eliminated from the competition traditional World Cup favorites: Brazil, Germany, Belgium, Portugal, and Spain.

Imagine having TESOL International or IATEFL held in different parts of the world instead of always being hosted, respectively by North America and the UK. Among many other things, more people from different parts of the world would have a better chance to attend; furthermore, native speakers would be in a situation of having to negotiate things in languages other than English thus getting firsthand teaching-relevant experience, though English would still give them unquestionable advantages. In addition, conference attendees could get a better understanding of the contextual dimensions of social justice and language-rights issues that are increasingly being discussed at these two conventions and we would have an opportunity to see the extent to which we and our professional organizations truly walk the talk. As an added bonus, by interacting with a greater number of local communities of researchers and educators, we will most likely experience much richer cross-fertilization. At a talk for Beijing Foreign Studies University in July of 2022, Larsen-Freeman pointed out that when interacting with other people, learners co-adapt, align, and synchronize their behavior. From social interaction, new patterns emerge. Perhaps we can say that the same goes for researchers and teachers. An

occasional move of our two major conventions to new venues will further enhance the decoloniality movement aimed at more egalitarian relationships between the Global South and the Global North, disrupting extant hierarchies and giving more prominence to the work of historically marginalized and devalorized groups. The UN supported AI conferences hosted in Africa are a good example in this respect (see, for instance, <https://paaiss.com> and <https://2021.paaiss.com>).

As Mihir Bose (2022) wrote in *The Guardian* (8), “Perhaps the World Cup was never going to change Qatar. But then there are signs that we may look back and see it as the place where the World Cup started to change into becoming a truly global event. In the near century of this competition, Europe and South America, where so many people are of European descent, have been the only two continents to win the trophy. The rest of the world was invited but never had a chance to sit at the top table.”

More egalitarian relationships do matter, in teaching, in learning, and in research. Teachers often complain that research does little to truly inform and better their daily practice. One reason for this disconnect is the oppositional framing of researchers and practitioners. Larsen-Freeman (2009) notes that researchers generalize while teachers particularize. She holds that traditional research practices are engaged in processes of *prediction*, while teachers are also grounded in *retrodiction*, looking back on successful practices after the fact to determine important, interconnected factors. As pointed out in Werner and Todeva (2022, p. 223), “Larsen-Freeman argues that researchers would benefit from adopting teachers’ retrodictive perspective on learning.” Retrodiction is grounded in processes of inquiry and an awareness of nuance, since “teachers know that the effect a particular procedure has on their students varies according to the day of the week [...], the week of the year [...], the time of the day [...], let alone with whom it is practiced, how it is practiced, and for what purpose” (Larsen-Freeman, 2009, p. 6). Recognizing this complexity could lay the foundations for new relationships between teachers and researchers, which would lead to richer processes of knowledge generation within our field. We could use the egalitarian I/thou/it triangle to reconceptualize the relationship between researchers, teachers, and pedagogy as a shared enterprise of discovering effective plurilingual and multimodal pedagogical practices, with a fluid movement between “I” and “thou” positioning.

In an important 2019 publication, Lourdes Ortega notes that even “a simple perusal of the pages of the three flagship journals for SLA - *Language Learning*, *Studies in Second Language Acquisition*, and *Second Language Research* shows that the individuals and the contexts from which SLA researchers extrapolate knowledge about the human capacity for adult language learning are severely restricted. Grassroots multilingualism and the multilingualism of marginalized and minoritized communities rarely make it into SLA pages. Most publications focus on the world’s international student population while the multilingualism of the millions of international migrants worldwide is grossly understudied. Furthermore, SLA knowledge is almost exclusively based on contexts located in the 36% countries (N = 78) that are classified by the World Bank as high income (World Bank, 2018). It excludes contexts for multilingual learning in 64% of all countries (N = 140). The problem of focusing exclusively on affluent geographies is exacerbated by the selection of highly educated, middle-class native speakers as baselines, whose communicative and linguistic repertoires may not be representative of the diversity of first-language speakers found in any society.” (Ortega, 2019, p. 33).



One significant contribution of Larsen-Freeman in response to our new realities regarding both the way we communicate and the way we construct knowledge is her invitation for second language acquisition researchers to broaden their focus beyond the isolation of a particular target language as the only relevant object of inquiry and to go beyond native-non-native subordinating comparisons (Larsen-Freeman, 2014b). She sees plurilingualism as objecting to a monolingual bias and a deficit view with regard to any one of the languages that make up a speaker's repertoire and contends that it confers true agency on language learners/users. In her view, plurilingualism stimulates alternative ways of thinking and perceiving the surrounding world. It fosters creativity and the development of much needed mediation skills; it allows individuals to negotiate and project their identities; it provides scaffolding in learning; and last but not least, it potentially nurtures a tolerance for differences and empathy for others (Larsen-Freeman & Todeva, 2021).

The desire for greater egalitarianism and the striving for bridging the research/practice divide are supported by steadily increasing positive changes witnessed in knowledge dissemination. Though still in the minority, more and more publishers, academic institutions, and conference organizers embrace and promote plurilingual and multimodal approaches. Offering abstracts in multiple languages, so-called *public abstracts* which present key research findings in jargon-free language geared towards the general public, as well as video abstracts, which serve the same function in a different modality, and three-minute thesis competitions, which train new scholars to communicate their research concisely and effectively, are just a few examples of such efforts (Werner & Todeva, 2022).

In a book entitled "Decolonising multilingualism: Struggles to decreate", Phipps (2019) writes, "An intentional decolonial multilingualism will need to pay attention to who, and in which terms, quite literally, it is in dialogue. If that dialogue is constituted only in Anglo-normal or all too colonial linguistic and discursive terms, then some work will need to be on the cards." (p. 9). In a well substantiated and well-argued way, Larsen-Freeman has written repeatedly on the need for us to problematize the terms and labels we use (Larsen-Freeman, 2012b). Concurring with Canagarajah (2013) that terms and labels "are not innocent" (p.6), she opines that they are ideological acts, informed by competing or complementary orientations to language, learning, the users of language and to society in general (Larsen-Freeman & Todeva, 2021). Among the key dyads of terms she has invited us to reimagine and reconsider are the following. First, grammar and grammaring, already discussed earlier. Also, there is the contrast between language acquisition and language development. In a 2015 publication entitled "Saying what we mean: Making a case for 'language acquisition' to become 'language development' ", Larsen-Freeman argues that "such a perspective rejects the commodification of language implied by the term 'acquisition'. Instead, language is imbued with a more dynamic quality, implied by the term 'development', because it sees language as an ever-developing resource. Development also acknowledges the mutable and interdependent norms of bilinguals and multilinguals. In addition, this perspective respects the fact that from a target-language vantage point, regress in learner performance is as characteristic of development as progress." (Larsen-Freeman, 2015b, p.491). Both grammaring and development suggest an important shift in thinking that reflects language and learning as emergent, non-linear, dynamic systems where learners and users play a key agentive role (Larsen-Freeman & Cameron, 2008). Also related to how we see the learners in the learning

process is Larsen-Freeman's contrastive exploration of repetition and iteration. The former is widely used in teaching, but as she rightly points out, while helpful, it does not necessarily require students to use language meaningfully. By contrast, iteration allows us to keep focus on a particular structure while at the same time having the students maintain ownership of language. "Meaningful iteration, rather than rote repetition, appears to contribute a solution to one problem in language teaching – how to sustain sufficient learner attention to give learners the practice they need." (Larsen-Freeman, 2013, p.189).

The importance of a good balance between emic and etic perspectives figures prominently in Larsen-Freeman's philosophy both as an educator and a researcher (Larsen-Freeman, 2015a). Specifically with regard to teaching, she discusses this at length in an article dedicated to Earl Stevick who believes that "teachers can manipulate an activity in such a way that even the slightest alteration in a technique can potentially make for an emic difference, a meaningful difference, in how the activity is perceived by the students in a classroom community." (Larsen-Freeman, 2013, p.195). In this publication and others (e.g. Larsen-Freeman, 2020, 2023), she offers multiple examples in the areas of pronunciation, grammar, and vocabulary of how this balance can be achieved through artful tapping into all the angles of the I/thou/it triangle. The power of combining both emic and etic perspective is one reason for the incorporation of multiple tripartite frameworks into the SIT Graduate Institute MATESOL Program's curriculum in addition to the I/thou/it, namely the Form/Meaning/Use pie chart (Larsen-Freeman, 1989); the exploration of all topics in the English Applied Linguistic course from a linguists', teachers' and learners' perspective; grammaring viewed as an almost holy trinity of genuine communication, playful focus-on-form and demand high pedagogy, and last but not least, the program's stance on plurilingualism and multimodality, where both teachers and learners are encouraged to tap fully into their prior linguistic and cultural experiences and to always work in modes that reveal their abilities and strength. As a faculty member at SIT for 24 years, Diane Larsen-Freeman was instrumental for both the conceptualization and the implementation of all these principles and ideas.

Very briefly, one final point as it relates both to learners as subjects and objects of research and to the importance of context. In a recent publication (Al-Hoorie et al., 2023), the authors discuss another important dyad, namely replication vs. substantiation. Arguing that it is virtually impossible to completely replicate any experience in life as conditions can never be truly identical, these scholars invite us to consider instead substantiation where through collaboration co-authors can draw on their different areas of expertise, use sampling from various sites and "offer contextual, social, and cultural insights that are hard to reach otherwise." Another important point made in this publication is that "while replication sometimes sees variability as a problem to be minimized with more precise instrumentation, measurement, and data analysis, CDST research views both inter-individual and intra-individual variability as an indispensable source of information." (see also Andrews, 2014; Aronin, 2022; Todeva & Cenoz, 2009). Equally important, Larsen-Freeman and her co-authors remind us yet again that "for CDST research contextualization is a core principle of knowing." (Al-Hoorie et al., 2023, p. 11).


Wrapping up my reflective essay, honoring Professor Diane Larsen-Freeman, I am reminded of the Australian aboriginal concept of *gurrutu*, a system which unites everything in the universe – people, animals, nature, our communities, and countries. This holistic system is

believed to help us understand our world better and in deeper ways, but as the Aboriginals hasten to add, using it "... we cannot explain everything. Like the surface of the water, beneath is an ocean of knowledge. We can only show the surface." (Wanambi, 2022, Madayin, American University Museum). Both language development and language education are what UC Berkeley social scientists, Horst Rittel and Mel Webber (1973) call *wicked problems*, i.e. "defying easy solutions because they are highly complex, with no consensus understandings or readily apparent resolution; are intricately interconnected with other problems and entrenched across multiple levels of the social world; and, consequently, affect the lives of countless everyday people." (Rittel & Webber, cited in Hiver et al., 2021, p. 4) The magnitude of the task of understanding language development and education in maximally meaningful, pragmatic ways is indeed enormous. Still, it is worth all our efforts to go deeper and deeper in an ecologically powerful, rhizomatic fashion (Deleuze & Guattari, 1987), something Larsen-Freeman has been doing for years, exploring language learning, teaching, and development through multiple iterations, always adding something new, informative, thought provoking, and inspiring.

As the recent burst of AI triggered insights has demonstrated, we can expect areas of explorations yet unimagined or at this point still difficult to undertake. Refik Anadol's 2022 large-scale "living" animation at The Museum of Modern Art has offered us stunning visuals of how machines see more than 200 years of art in MoMA's collection. Patterns emerge that have escaped us so far and investigative inroads seem possible that fill us with wonder and an urge to take our studies to ever greater heights, breadths, and depths (10).

Larsen-Freeman has not only enriched the field of Applied Linguistics and language teaching and learning by being a forever engaged researcher, and a prolific writer and presenter, but, like the Argentinian magician, she has a stellar record of assists as is clear from the number of her co-authored publications and as professed by myriads of students, language teachers, and young and seasoned researchers who have had the good fortune to work with her through the years. I myself am among those very fortunate ones. Among Larsen-Freeman's many recognitions are the U.S. Department of State English Language Specialist Program 30@30 Award (2020), TESOL's "50 at 50" (50 leaders who have made significant contributions to the profession within the past 50 years selected on the occasion of the TESOL International Association's 50th anniversary, 2016), and the American Association for Applied Linguistics Distinguished Scholarship and Service Award (2011). Also, like Messi, Diane has always been a bigger picture person, thus her fascination and attraction to Complex Dynamic Systems Theory and the intricate interplay of factors shaping people's learning trajectories. She holds in high esteem the ability of teachers to particularize, while inviting us at the same time in the spirit of Blake "To see a World in a Grain of Sand" (Blake, 1950). Though now officially in retirement, Diane Larsen-Freeman continues to be as prolific a writer as ever, opening up new spaces for enticing, intellectually stimulating explorations that encourage greater agency on the part of learners, teachers, and marginalized scholars.

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## References

- Al-Hoorie, A., Hiver, P., Larsen-Freeman, D., & Lowie, W. (2023). From replication to substantiation: A complexity theory perspective. *Language Teaching*, 56(2), 276-291. <https://doi.org/10.1017/S0261444821000409>
- Andrews, E. (2014). *Neuroscience and multilingualism*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139567770>
- Aronin, L. (2022). *An advanced guide to multilingualism*. Edinburgh University Press.
- Blake, W. (1950). Auguries of innocence, in W. H. Auden & N. H. Pearson (Eds), *Poets of the English Language*. Viking Press.
- Block, D. (2019). To the limits of the political in foreign language teaching: A rejoinder to 'Between professionalism and political engagement in foreign language teaching practice'. *Journal of Applied Linguistics and Professional Practice*, 16(3), 384-393. <https://doi.org/10.1558/jalpp.21087>
- Block, D. (2022). *Innovations and challenges in identity research*. Routledge. <https://doi.org/10.4324/9780429356186>
- Canagarajah, S. (2013). *Translingual practice: Global Englishes and cosmopolitan relations*. Routledge. <https://doi.org/10.1111/josl.12095>
- Carter, R. & McCarthy, M. (2006). *Cambridge grammar of English*. Cambridge University Press. <https://doi.org/10.1017/S1360674307002535>
- Cook, V. (1999). Going beyond the native speaker in language teaching. *TESOL Quarterly*, 33(2), 185-209. <https://doi.org/10.2307/3587717>
- De Costa, P. I., & Norton, B. (2017). Introduction: Identity, transdisciplinarity, and the good language teacher. *The Modern Language Journal*, 101(S1), 3-14. <https://doi.org/10.1111/modl.12368>
- Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. (B. Massumi, Trans.). University of Minnesota Press.
- Douglas Fir Group. (2016). A transdisciplinary framework for SLA in a multilingual world. *The Modern Language Journal*, 100 (s), 19-47. <https://doi.org/10.1111/modl.12301>
- Gatbonton, E. & Segalowitz, N. (1988). Creative automatization: Principles for promoting fluency within a communicative framework. *TESOL Quarterly* 22, 3, 473-92. <https://doi.org/10.2307/3587290>
- Hari, J. (2023). *Stolen focus: Why you can't pay attention and how to think deeply again*. Crown Publishing Group.
- Hawkins, D. (1974). *The informed vision: Essays on learning and human nature*. Agathorn Press. <https://www.hawkinscenters.org/books-and-articles.html>
- Hawkins, D. (2000). *The roots of literacy*. University Press of Colorado.
- Hiver, P., & Larsen-Freeman D. (2020). Motivation: It is a relational system, In A. H. Al-Hoorie & P. D. MacIntyre (Eds.), *Contemporary language motivation theory: 60 Years since Gardner and Lambert (1959)* (pp. 285-303). Multilingual Matters. <https://doi.org/10.21832/9781788925211-018>

- Hiver, P., Al-Hoorie, A. H., & Larsen-Freeman, D. (2021). Toward a transdisciplinary integration of research purposes and methods for complex dynamic systems theory: Beyond the quantitative–qualitative divide. *International Review of Applied Linguistics in Language Teaching*, 60(1), 7-22. <https://doi.org/10.1515/iral-2021-0022>
- Holland, D., & Lave, J. (2001). *History in person: Enduring struggles, contentious practice, intimate identities*. SAR Press.
- Ingram, J., & Elliott, V. (2016). A critical analysis of the role of wait time in classroom interactions and the effects on student and teacher interactional behaviours. *Cambridge Journal of Education*, 46(1), 37-53. <https://doi.org/10.1080/0305764X.2015.1009365>
- Johnson, K. E. (2019). The relevance of a transdisciplinary framework for SLA in language teacher education. *The Modern Language Journal*, 103(S1), 167-174. <https://doi.org/10.1111/modl.12524>
- Kusters, A. (2021). Introduction. The semiotic repertoire: assemblages and evaluation of resources. *International Journal of Multilingualism*, 18(2), 183-189. <https://doi.org/10.1080/14790718.2021.1898616>
- Lahey, J. (2016). Teaching: Just like performing magic. *The Atlantic*, January 21 <https://www.theatlantic.com/education/archive/2016/01/what-classrooms-can-learn-from-magic/425100/>
- Larsen-Freeman, D. (1989). Pedagogical descriptions of language: Grammar. *Annual Review of Applied Linguistics*, 10, 187-195. Cambridge University Press. <https://doi.org/10.1017/S026719050000129X>
- Larsen-Freeman, D. (1991). Consensus and divergence on the content, role and process of teaching grammar. In J. Alatis (Ed.), *Linguistics and language pedagogy: The state of the art* (pp. 260-272). Georgetown University Press.
- Larsen-Freeman, D. (1995). On the teaching and learning of grammar: Challenging the myths. In F. Eckman, D. Highland, P. Lee, J. Mileham, & R. Rutkowski Weber (Eds.), *Second language acquisition theory and pedagogy* (pp.131-150). Lawrence Erlbaum Associates, Inc.
- Larsen-Freeman, D. (2002). The grammar of choice. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching*. Lawrence Erlbaum.
- Larsen-Freeman, D. (2003). *Teaching language: From grammar to grammaring*. Heinle.
- Larsen-Freeman, D. (2005). Second language acquisition and fossilization: There is no end, and there is no state. In Z-H. Han & T. Oldin (Eds.), *Studies of fossilization in second language acquisition* (pp. 189-200). Multilingual Matters.
- Larsen-Freeman, D. (2009). Prediction or retrodiction?: The coming together of research and teaching. In *Spotlight on re-search: A new beginning. The selected proceedings of the 2008 MITESOL Conference* (pp. 5-16). LuLu Press.
- Larsen-Freeman, D. (2012a). Complex, dynamic systems: A new transdisciplinary theme for applied linguistics? *Language Teaching*, 45(2), 202-214. <https://doi.org/10.1017/S0261444811000061>
- Larsen-Freeman, D. (2012b). On the role of repetition in language teaching and learning. *Applied Linguistics Review*, 3(2), 195-210. <https://doi.org/10.1515/applirev-2012-0009>
- Larsen-Freeman, D. (2013). Complex, dynamic systems and technemes. In J. Arnold Morgan & T. Murphey (Eds.), *Meaningful action: Earl Stevick's influence on language teaching* (pp.190-201). Cambridge University Press.
- Larsen-Freeman, D. (2014a). Teaching grammar. In M. Celce-Murcia, D. Brinton, & A. Snow (Eds.), *Teaching English as a second or foreign language* (4<sup>th</sup> edition) (pp.256-270). Heinle.
- Larsen-Freeman, D. (2014b). Another step to be taken: Rethinking the endpoint of the interlanguage continuum. In Z.-H. Han & E. Tarone (Eds.), *Interlanguage: Forty years later* (pp.203-220). John Benjamins. <https://doi.org/10.1075/llt.39.11ch9>
- Larsen-Freeman, D. (2015a). Research into practice: Grammar learning and teaching. *Language Teaching*, 48(2), 263-280. <https://doi.org/10.1017/S0261444814000408>
- Larsen-Freeman, D. (2015b). Saying what we mean: Making the case for second language acquisition to become second language development. *Language Teaching* 48(4), 491-505. <https://doi.org/10.1017/S0261444814000019>
- Larsen-Freeman, D. (2016a). Complexity and ELF: A matter of nonteleology. In M.-L. Pitzl & R. Osimk-Teasdale, (Eds.), *English as a Lingua Franca: Perspectives and prospects. Contributions in honour of Barbara Seidlhofer* (pp. 139–146). De Gruyter Mouton.
- Larsen-Freeman, D. (2016b). A successful union: Linking ELF with CAS. In L. Lopriore & E. Grazzi (Eds.), *Intercultural communication: New perspectives from ELF* (pp. 15-29). Roma Tres Press.
- Larsen-Freeman, D. (2018). Second language acquisition, WE, and language as a complex adaptive system (CAS). In P. De Costa & K. Bolton (Eds.), *World Englishes*, 37(1) (Special Issue), 80–92. <https://doi.org/10.1111/weng.12304>
- Larsen-Freeman, D. (2020). Grammmaring and the fascinating case of there. In H.Takashima (Ed.), *English acquisition through tasks and projects* (pp. 99-108). Taishukan-shoten.

- Larsen-Freeman, D. (2023). Conceptualizing language education: Theories and practices. Chapter One. In Li Wei, Z. Hua, & J. Simpson (Eds.), *Routledge handbook of applied linguistics (second edition)*, (pp.7-26). Routledge.
- Larsen-Freeman, D. & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford University Press.
- Larsen-Freeman, D., Driver, P., Gao, X., & Mercer, S. (2021). Learner agency: Maximizing learner potential, an *Oxford University Press position paper*. <https://elt.oup.com/feature/global/expert/learner-agency?cc=us&selLanguage=en>.
- Larsen-Freeman, D., & Todeva, E. (2021). A sociocognitive theory for plurilingualism: Complex dynamic systems theory. In E. Piccardo, A. Germain-Rutherford, & G. Lawrence (Eds.), *Routledge handbook of plurilingual language education* (pp. 209-225). Routledge. <https://doi.org/10.4324/9781351002783>
- Leung, C., & Valdés, G. (2019). Translanguaging and the transdisciplinary framework for language teaching and learning in a multilingual world. *The Modern Language Journal*, 103(2), 348-370. <https://doi.org/10.1111/modl.12568>
- Long, M. (1991). Focus on form: A design feature in language teaching methodology. In K. De Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross-cultural perspectives* (pp. 39-52). John Benjamins. <http://dx.doi.org/10.1075/sibil.2.07lon>
- Mahmud, M. S. (2019). The role of wait time in the process of oral questioning in the teaching and learning process of mathematics. *International Journal of Advanced Science and Technology*, 28(16), 691-697.
- Ortega, L. (2019). SLA and the study of equitable multilingualism. *The Modern Language Journal*, 103, 23-38. <https://doi.org/10.1111/modl.12525>
- Pennycook, A. (2017). Translanguaging and semiotic assemblages. *International Journal of Multilingualism*, 14(3), 269-282. <https://doi.org/1080/14790718.2017.1315810>
- Phipps, A. (2019). *Decolonising multilingualism: Struggles to decreate*. Multilingual Matters. <https://doi.org/10.21832/9781788924061>
- Piccardo E. (2017). Plurilingualism as a catalyst for creativity in superdiverse societies: A systemic analysis. *Frontiers in Psychology*, 8(2), 2169. <https://doi.org/10.3389/fpsyg.2017.02169>
- Qazi, S. (2022, December 18). Muslim world's first world cup draws to a close, outshines controversies. *TRT World Magazine*, [https://www.trtworld.com/magazine/muslim-world-s-first-world-cup-draws-to-a-close-outshines-controversies-63668?fbclid=IwAR31Kvrb5bFRy6z-ye3SxgBEh-My93H8HTiTKZ\\_C03-dkE8Bb7hjpBORsUY](https://www.trtworld.com/magazine/muslim-world-s-first-world-cup-draws-to-a-close-outshines-controversies-63668?fbclid=IwAR31Kvrb5bFRy6z-ye3SxgBEh-My93H8HTiTKZ_C03-dkE8Bb7hjpBORsUY)
- Rodgers, C. R. (2001). "It's elementary": The central role of subject matter in learning, teaching, and learning to teach. *American Journal of Education*, 109(4), 472-480.
- Rosen, J. (2022). The genius of Lionel Messi just walking around. *The New Yorker*, December 17, <https://www.newyorker.com/sports/world-cup-2022/the-genius-of-lionel-messi-just-walking-around>
- Schmidt, R., & Frota, S. (1986). Developing basic conversational ability in a second language: A case study of an adult learner. In R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 237-369). Newbury House.
- Stevick, E. (1980). *Teaching languages. A way and ways*. Newbury House.
- 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 House.
- Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. Lantolf (Ed.), *Sociocultural theory and second language learning*, 97 (1), 97-114. Oxford University Press.
- Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 16, 371-391.
- Tharp, R. G. & Gallimore, R. (1988). A theory of teaching as assisted performance, in *Rousing minds to life: Teaching, learning and schooling in social context* (pp. 27-43). Cambridge University Press. <https://doi.org/10.2307/1176847>
- Todeva, E. (2012, April 11). Gramming - unpacking the concept. TESOL International webinar series. <http://eventcenter.commpartners.com/se/Meetings/Playback.aspx?meeting.id=814740>
- Todeva, E. (2013a). Gramming: A personal odyssey perspective. *The Language Teacher*, 37(4), 32-34. [https://jalt-publications.org/files/pdf/the\\_language\\_teacher/37.4tlt.pdf](https://jalt-publications.org/files/pdf/the_language_teacher/37.4tlt.pdf)
- Todeva, E. (2013b). Social, dynamic, and complexity theory approaches to second language development: Entry on Diane Larsen-Freeman. In C.A. Chapelle (Ed.), *The encyclopedia of applied linguistics*. Blackwell/Wiley. <https://doi.org/10.1002/9781405198431.wbeal1353>
- Todeva, E. (2015a). Gramming: An almost holy trinity of genuine communication, playful focus-on-form and demand high pedagogy, in *Proceedings of the 8th Foro de Lenguas* (pp. 61-70), Montevideo, Uruguay. Administración Nacional de Educación Pública (ANEP). [https://www.academia.edu/31430028/Octavo\\_Foro\\_de\\_Lenguas\\_de\\_ANEP](https://www.academia.edu/31430028/Octavo_Foro_de_Lenguas_de_ANEP)
- Todeva, E. (2015b). Paradigms of enrichment in language and teacher education, *TEC2015*, 154-162. [https://issuu.com/britishcouncilindia/docs/tec15\\_papers\\_final\\_for\\_web?e=1710046/41970128](https://issuu.com/britishcouncilindia/docs/tec15_papers_final_for_web?e=1710046/41970128)

- Todeva, E. (2020, March 15). Levels of granularity effects: An Eastern European example. Georgetown University Roundtable GURT 2020. Multilingualism: Global South and Global North Perspectives. Washington, DC, USA.
- Todeva, E., & Cenoz, J. (Eds.). (2009). *The multiple realities of multilingualism: Personal narratives and researchers' perspectives*. Walter de Gruyter. <https://doi.org/10.1515/9783110224481>
- Tomlinson, C. A., & Germundson, A. (2007). Teaching as jazz. *Educational Leadership*, 64(8), 27-31.
- Werner, R & Todeva, E (2022). Plurilingualism and multimodality: The metanoia within reach. *TESL Canada Journal/Revue TESL Du Canada*, 38(2), 214-227. <https://doi.org/10.18806/tesl.v38i2.1362>
- Whitehead, A. N. (1929). *The aims of education*. Macmillan.
- Widdowson, H. (1990). *Aspects of language teaching*. Oxford University Press. <https://doi.org/10.18172/cif.2434>

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- (3) <https://www.livemint.com/news/india/jiocinema-records-32mn-viewers-on-the-final-day-of-the-fifa-world-cup-qatar-2022-11671443625789.html>
- (4) [https://www.theguardian.com/football/blog/2022/dec/18/lionel-messi-authors-dramatic-ending-to-the-greatest-story?fbclid=IwAR01s2F-li507FYfQCFI8o4pQ0210DchXMYCyg6YFklC2fFD--6\\_l8w7CSY](https://www.theguardian.com/football/blog/2022/dec/18/lionel-messi-authors-dramatic-ending-to-the-greatest-story?fbclid=IwAR01s2F-li507FYfQCFI8o4pQ0210DchXMYCyg6YFklC2fFD--6_l8w7CSY)
- (5) <https://www.pbs.org/video/new-eye-on-the-universe-zvzqn1/> (min.20.30 –
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- (7) <https://digitalhub.fifa.com/m/588f70e99a18a29f/original/FIFA-World-Cup-2022-Group-Stage-by-the-numbers.pdf>
- (8) <https://www.theguardian.com/commentisfree/2022/dec/19/fifa-qatar-lionel-messi-football-emir-bisht-world-cup>
- (9) <https://www.psychologytoday.com/us/blog/the-asymmetric-brain/202212/messi-magic-left-footedness-in-professional-soccer-players>
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