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Diane Larsen-Freeman's Fifty-Year Contributions to Language Learning and Teaching: A Systematic Review and Diane Larsen-Freeman's Personal Reflection

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Abstract

The systematic review was conducted in two phases. In the first phase, we (Ali Panahi and Hassan Mohebbi) reviewed Diane Larsen-Freeman's whole works, analyzed her overall contribution to the fields of language learning and teaching and then extracted and analyzed the varying areas of interest she has researched; the most focused and prevalently investigated issues in the order of dominance appeared to be SLA, complexity theory, teaching grammar, complexity theory and second language acquisition/second language development, complexity theory and applied linguistics, morpheme studies, teaching methodology, ESL index of development, teacher education, and ELF. Next, we created two main superordinate components, each containing their own subparts: a theory-practice link (annotations and relevance to language pedagogy or research) and main themes (article theme, technical terminology, and design types). Upon providing an account of a theory-practice link, we finally extracted a total number of 1160 terms sub-grouped into 462 technical terms for applied linguistics, 183 technical terms for complexity theory and 182 main terms for theories, approaches, methods, hypotheses, and views. The other umbrella issues are also briefly elaborated. In the second phase, Diane Larsen-Freeman provided her discussion of this systematic review and her personal reflection.

Keywords: *Diane Larsen-Freeman, Systematic Review, Complexity Theory, SLA, Language Learning, Language Teaching*

Introduction

In our quest to provide a systematic review of Diane Larsen-Freeman's academic contribution to the field over 50 years, we (Ali Panahi and Hassan Mohebbi) first adopted a historical perspective, discussing her research in SLA and then her contributions to language pedagogy,

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although the two are intertwined. As Larsen-Freeman, herself, notes (see Interview in this issue), her career began as an EFL teacher in Malaysia in the late 1960s. From this time forward, she has been concerned with understanding language, its learning and teaching. Much professional growth and scholastic and pedagogical developments align with the contributions of Diane Larsen-Freeman over time, as evidenced, for example, by the establishment of the TESOL organization and the American Association for Applied Linguistics, in 1966 and 1977, respectively (Kaplan & Grabe, 2000). In an editorial for *Language Learning* in 1980, Larsen-Freeman hailed the coming of age of a modern-day understanding of second language acquisition/learning, pinpointing the transition of the field of SLA from infancy to adolescence. In 1985, in another *Language Learning* editorial, she suggested that the field was at a stage that might be seen as older adolescence: The vigor of youth persisted, and yet, we were surer of ourselves as a separate and unique discipline. A few years later, in a 25th anniversary issue of the *TESOL Quarterly*, she published a seminal article titled *Second language acquisition research: Staking out the territory* (Larsen-Freeman, 1991a), and jointly authored a book titled *An introduction to second language acquisition research* (Larsen-Freeman & Long, 1991): Both contributed a significant understanding to SLA and are highly informative in terms of SLA theories, models, principles and views.

Taking some steps further back in the 1970s, when descriptive studies were seeking to refute behaviorism and apply Corder and Selinker's ideas, research on morpheme studies emerged (VanPatten & Benati, 2015). Diane Larsen-Freeman was one of the first to conduct research into a morpheme acquisition order. She was captivated by the promise of a "built-in syllabus," which could be adopted in language teaching to facilitate language learning. The trace of her beginning publications started with her earlier presentation at the 9th TESOL meeting in Los Angeles (Larsen-Freeman, 1975a) on frequency and syllabus design and her unpublished doctoral dissertation (Larsen-Freeman, 1975c), approximately 48 years ago, giving in the end rise to a published article the same year, i.e., *The acquisition of grammatical morphemes by adult ESL students* (Larsen-Freeman, 1975b): This work is a report of her earlier involvement with morpheme acquisition studies, where she points to a frequency effect to explain the order. In particular, closely aligned with this beginning work emerged her jointly published paper titled *The effect of formal language instruction on the order of morpheme acquisition* (Perkins & Larsen-Freeman, 1975), which provides evidence that "morpheme usage" can be improved by instruction.

During this early period in her career, she also conducted research with the goal of constructing a second language index of development. She was convinced, following Kenji Hakuta's work in particular, of the need of some sort of rough yardstick to measure development so that researchers could be more certain that they were reporting on similar populations (rather than simply using the relative labels of beginning, intermediate, and advanced). However, she was disappointed to find that there was simply too much variation among learners to group them into homogeneous groups along a developmental yardstick. This was an important lesson for her, one that would inform her subsequent research projects, along with the effect of frequency (Larsen-Freeman, 2002a).

We live in social and academic settings where varying interconnected elements and dynamic and emergent incentives by degrees come up, all of which naturally contribute dramatic changes to our research interests and scholastic preferences. This given, Diane

Larsen-Freeman, from this aspect, is not an exception. As an influential scholar, her enthusiasm shifted from morpheme studies and the search for a second language index of development to complex dynamic systems theory (Hereafter, CDST). Although it can be associated with an intra-paradigm shift in Diane Larsen-Freeman's research orientation, there lies no dichotomy between her research before and after CDST, as all efforts are for the purpose of rendering the challenging changes for better and for meeting the pressing needs of academicians and educators. As such, Diane Larsen-Freeman's breadth of pre-CDST research works had been so informative that they could raise her awareness to the reality of viewing SLA from a more novel and holistic perspective, i.e., from the lens of ecology. However, having said this, we quickly add that this does not mean that the previous theories and principles are out of the cycle of action; rather, as Larsen-Freeman (2008) indicates, they encourage the quest for greater understanding and for making unconscious conscious, helping, therefore, furthering her curiosity and raising questions about the phenomenon at hand. For example, frequency issues and concerns were at issue in behaviorism and a frequency effect is also associated with cognitivism, and was mentioned, in her research on morphemes; recently, frequency once again features within complexity theory (Ellis & Larsen-Freeman, 2006; Larsen-Freeman & Cameron, 2008a, 2008b). Another tangible example relates to a traditional research question, such as "Does language anxiety correlate with course grades? Tellingly, this question can be rephrased from a CDST perspective, following MacIntyre and Gregersen, into a procedural question, such as 'What happens as anxiety rises during a test?' These two questions reveal the varying applications of CDST in language pedagogy in research contexts (Larsen-Freeman, 2019a).

Given this outlook, as a revolutionary thinker (Todeva, 2013), Diane Larsen-Freeman has witnessed the birth of varying subdisciplines in applied linguistics over the span of her 50-year professional career (Larsen-Freeman, 2016b) and, therefore, has been shaped by and has shaped many disciplines and subdisciplines. Stepping a bit back, while reading a book titled *Chaos: Making a new science* (Gleick, 1987), she came across a statement indicating that 'nonlinearity means the act of playing the game which has a way of changing the rules.' All things started from here, as the sentence ignited her interest towards complex systems, serving as a basis for one of Diane Larsen-Freeman's most influential papers titled *Chaos/complexity science and second language acquisition* (Larsen-Freeman, 1997a). To her, complexity theory, though originating in the physical sciences (Larsen-Freeman, 2013b), has the rich potential to contribute a transdisciplinary theme to applied linguistics, so transdisciplinary – rather than inter or multidisciplinary – themes move beyond disciplines and motivate novel sorts of creativity (Halliday, 2001). A caveat demands to be mentioned that Diane Larsen-Freeman and Donald Freeman in their article *Language moves: The place of foreign language in classroom teaching and learning* (Larsen-Freeman & Freeman, 2008) note that their notion of post-disciplinary does not only consider creating new forms of thematic activities, but rather they also acknowledge the role of disciplinary knowledge. However, they maintain that knowledge in many disciplines is oriented by local practices.

In one of her key research articles titled *Second language development in its time: Expanding our scope of inquiry* (Larsen-Freeman, 2019c), Diane Larsen-Freeman reviews the expansion of SLA theories leading gradually to a more psycholinguistic one, then to cognitive and social, and at present to CDST. In much simpler words, Diane Larsen-Freeman portrays

SLA as ecologically-centered and predicts it to be a theory for our time. In this connection, her article titled *Looking ahead: Future directions in, and future research into second language acquisition* (Larsen-Freeman, 2017a) provides a brief account of key historical issues centering around SLA emerging in the 1970s. For ease of clarification, we have visualized views of SLA in Figure 1.

Figure 1

Developmental Views of SLA

Behavioral view → Cognitive view → Social view → Socio-cognitive view



Chaos/ Complexity Theory-driven view of SLD

With reference to the article titled *Reflecting on the cognitive-social debate in second language acquisition* (Larsen-Freeman, 2007b) and understanding the characteristics of the two views and debate between them, Diane Larsen-Freeman offered Chaos/ Complexity Theory, not as a new, grand unified theory, but rather as a more encompassing, and balanced theory (Larsen-Freeman, 2007c). As Larsen-Freeman (2019c) indicates, CDST is a theory of change, inspiring a different way to think about language learning and teaching. As such, it is amply suited for dealing with second language development: learners need to experience using language as a dynamic system through adapting their language resources to the present situation to meaningfully engage with it.

The SLA process is both cognitive and social, both of which are united by CDST (Larsen-Freeman, 2002b). This understanding leads to viewing language as a complex adaptive system (Ellis & Larsen-Freeman, 2009b), which develops through interaction among its users. The holistic view should be obtained: It is not possible to understand one part of a complex system without understanding its relationship with other parts (Larsen-Freeman, 2020a). According to CDST, the developmental change process is never complete, and neither is its learning, as learning is embedded in a matter of becoming rather than the state of being (Larsen-Freeman, 1997a; Larsen-Freeman, 2014d). This is well supported by her article titled *Just learning* (Larsen-Freeman, 2017b) and her book chapter titled *Complexity theory: The lessons continue* (Larsen-Freeman, 2017c). The understating hence is that SLA research has started to increasingly take a CDST path, offering significant insights into the SLA process and outcome. Therefore, ushering in a new person-centered era in SLA research, Diane Larsen-Freeman heralds a new phase in SLA research (Larsen-Freeman, 2017a). Grounded in interconnectivity, while at the same time ignoring reductionist generalizations and valuing individual differences, CDST appears to contribute a more holistic view of SLA (Larsen-Freeman, 2017b). In short, at around the same time, a group of fifteen world-recognized scholars, Diane Larsen-Freeman being one of them, offered a problem-oriented and transdisciplinary framework to the field; it is characterized by 10 interrelated themes (Douglas Fir Group, 2016). The group used their ethical commitment, collective rethinking, points of synergy, and their prolonged engagement with the challenges in the field and the benefit of their closer interaction with each other to

establish their framework: In the article, we found key words from CDST, such as ecology, trans-disciplinarity, emergence, dynamism, interaction, complexity, chaos and challenges.

Acknowledging the insightful findings and arguments she has contributed to the field through CDST, all would be associated with her firm position that humans are social beings, and interaction with others is substantial to the survival of individuals (Larsen-Freeman, 2019b). Generalized, this interaction and interconnectivity holds true in all elements and their subcomponents. CDST does not work in a vacuum; rather it happens in a context and in conjunction with phenomena germane to SLA, such as learner agency. As Larsen-Freeman (2019b) indicates, conceptualization of agency in the context of a transdisciplinary perspective has attracted remarkable attention, especially of late, so that learners are considered agentive in context. Therefore, language learning does not occur in an ideological vacuum (Larsen-Freeman, 2017a); rather, it takes place when learners enact their agency in particular contexts. In this connection, she has a seminal article titled *On language learner agency: A complex dynamic systems perspective* (Larsen-Freeman, 2019b) which examines educational practices scaffolding learner agency and defends the optimization of conditions for one's own learning in context and based on the principles and practices within the framework in which CDST operates.

As a leading figure in applied linguistics, Diane Larsen-Freeman has been interviewed since the beginning of her professional initiation into the field. In a more recently published interview (Ashcroft, 2019), Diane Larsen-Freeman elaborates on the beginning stages of her ELT career and traces its origin to the 1960s, indicating that, at that time, a coalescence emerged and a paradigm shift was created by scholars around a new field named second language acquisition (SLA), the one which she has ever since professionally pursued.

Larsen-Freeman, during her professional lifespan, has radically contributed to SLA through SLA coursebooks. Larsen-Freeman has authored plenty of books. Inspired by Evelyn Hatch (Larsen-Freeman, 2017b), she edited her first book in 1980 titled *Discourse Analysis and Second Language Research* (Larsen-Freeman, 1980). Her second book was co-authored and was titled *The Grammar book: An ESL/EFL teacher's course* (Celce-Murcia & Larsen-Freeman, 1983, now in third edition). And a later SLA book was co-authored with her student, Michael Long, *An introduction to second language acquisition research* (Larsen-Freeman & Long, 1991). In addition, her experience teaching the methods/approaches course at the School for International Training, and invited by Russ Campbell and Bill Rutherford, Diane Larsen-Freeman authored her thought-provoking book titled *Techniques and principles in language teaching* (Larsen-Freeman, 1986d, now in third edition, co-authored with Marti Anderson), which has radically contributed to the field; the book makes so much sense to educators and researchers and is at present used as a coursebook, especially as part of teacher education syllabuses, helping teacher candidates reflect on the methods and approaches, critically think and micro-teach using them. As Larsen-Freeman (2017b) asserts, the impact of the book lies in the fact that it can help readers view a method as a coherent set of theory-action links and use them as models for creating, justifying and supporting their own practices and assumptions in the classroom. Besides its dominance in terms of a source of method and approach input, the book is informative in research terms, too. Then, too, her award-winning book co-authored with Lynne Cameron, *Complex systems and applied linguistics* (2008a) has helpfully introduced the field to the value of seeing applied linguistics in a new light, as has her co-edited

book with Nick Ellis, *Language as a complex adaptive system* (Ellis & Larsen-Freeman, 2009b).

Another key line of enquiry in Diane Larsen-Freeman's research has been the teaching of grammar. contributing to the field through surveying the historical events and practices related to teaching grammar and then reviewing and revising the state-of-the-art, she contributed a great deal to the field. For example, in one of her research projects titled *Consensus and divergence on the content, role and process of teaching grammar* (Larsen-Freeman, 1991b), she provides a historical view of language teaching and then presents a state-of-the-art view of teaching grammar, indicating that the previous evolutionary trends and ideas related to teaching grammar cannot be discarded or replaced with the new ones; rather they can be reviewed, and reconceptualized for further use and analysis. As for teaching grammar, her other widely published and cited research projects are *Teaching grammar* (Larsen-Freeman, 2001b), *Grammar* (Larsen-Freeman, 2001a), *On the teaching and learning of grammar: Challenging the myths* (Larsen-Freeman, 1995a), *Grammar and its teaching: Challenging the myths* (Larsen-Freeman, 1997b), *The grammar of choice* (Larsen-Freeman, 2002c), *Teaching Language: From grammar to grammaring* (Larsen-Freeman, 2003), *Teaching and testing grammar* (Larsen-Freeman, 2009b), *Research into practice: Grammar learning and teaching* (Larsen-Freeman, 2015a) and many others, including a popular series of coursebooks, *Grammar dimensions: Form, meaning, and use* (Larsen-Freeman, 2000b), published in 1993 and now in fourth edition, for which she was series director.

In reconceptualizing grammar, she uses the lens of complexity theory to improve pedagogical practice. For example, a major theme in her book *Teaching language from grammar to grammaring* (Larsen-Freeman, 2003) concerns understanding and teaching grammar as a dynamic system. For another example, in her article, i.e., *On the role of repetition in language teaching and learning* (Larsen-Freeman, 2012b), she clarifies the role of repetition and justifies its use within the framework of transdisciplinary perspectives. Her logic is that the persistence of repetition in classrooms indicates that it must have some merit and value, but that an ecological approach and CDST give us a transformative view of repetition. That is why we already cited that with use of CDST, she links theory to practice and that is why as we become clearer about CDST, its way of thinking has changed, helping us to more deeply think of the way to treat SLA phenomena.

Other lines of inquiry she has undertaken have been connecting CDST to ELF, WE, SLD, and task-based language teaching. She has also used CDST to reframe repetition as iteration and to reframe transfer as transformation, communicating, by our inference, the overall message that a dialogue is in progress among these sub-disciplines and typifying that despite the fact that complexity theory is rooted in physics, it is now applied to social sciences in general and SLA and applied linguistics in particular. Her research works in this connection are *Complexity theory and ELF: A matter of nonteleology* (Larsen-Freeman, 2016b), *A successful union: Linking ELF with CAS* (Larsen-Freeman, 2016c), *Complexity and ELF* (Larsen-Freeman, 2018d), *Looking ahead: Future directions in, and future research into, second language acquisition* (Larsen-Freeman, 2017a), *Resonances: Second language development and language planning and policy from a complexity theory perspective* (Larsen-Freeman, 2018a), *Task repetition or tasks iteration? It does make a difference* (Larsen-

Freeman, 2018b), and *Second language acquisition, WE, and language as a complex adaptive System* (Larsen-Freeman, 2018c).

A look at Diane Larsen-Freeman's remarkable article in which details her professional development and traces her start of an SLA career is titled *Just learning* (Larsen-Freeman, 2017b), a first-person singular article leading to the description of the ins and outs of her own professional, and personal development and background. She concludes the article by identifying three stages in the development in her career as a teacher: (1) Learning to teach, (2) learning teaching, and (3) just learning; she clarifies that there is no fourth stage—teaching begins with learning, and the learning continues (Larsen-Freeman, 1998c, 2017b). As such, Diane Larsen Freeman, in her research article *Complexity theory: The lessons continue* (Larsen-Freeman, 2017c), indirectly invites, of course based on our personal experience, educators, professional, scholars and teachers to rethink, reconsider and reanalyze SLA from ecological and CDST perspectives. What inference we make based on this invitation can lead to a paradigm shift in learning for the purpose of researching SLA and applied linguistics issues.

Diane Larsen-Freeman has also contributed to the field in terms of teacher education and teacher training issues. In her insightful book chapter titled '*Training teachers or educating a teacher?*' (Larsen-Freeman, 1983d), she puts the processes of training teachers for specific situations in marked contrast with educating a teacher for any situation. More notably, in her research work titled '*Punctuation in teacher education*' (Larsen-Freeman, 1992), she indicates that there are numerous variables which contribute to the uniqueness of each classroom that trainees will enter (Larsen-Freeman, 1992). She argues that it is impossible to prepare teacher candidates for varying types of situations unless teacher training is subsumed within a teacher education program (Larsen-Freeman, 1983d). Also, her contribution as a book chapter under the heading of '*On the changing role of linguistics in the education of second-language teachers: Past, present, and future*' (Larsen-Freeman, 1995b) is highly relevant and worthy of being included in a teacher education syllabus.

Furthermore, she has made a significant contribution to the field during her professionalism through coining varying SLA concepts such as grammaring, i.e., a grammaring approach (Larsen-Freeman, 1995a, 2003), according to which grammar is dynamic, rather than static, ameliorates the inert knowledge problem and fosters learners' ability to go beyond the input, for, after all, language learning is not about conformity to uniformity (Larsen-Freeman, 2003). Other examples of terms reframed by Diane Larsen-Freeman are the use of 'development' instead of 'acquisition' as explicit in second language development (Larsen-Freeman, 2014a) and the creation of the concept *SLA developmental index* (Larsen-Freeman & Strom, 1977; Larsen-Freeman, 1978a). In her recent informative article titled *Complex dynamic systems theory: A webinar with Diane Larsen-Freeman* (Larsen-Freeman, 2023d), in addition to the discussion of complexity theory, she briefs us on assessment issues, too, specifically her elaboration on self-referential assessment, which indicates her varying areas of interest in both theory and practice.

For this analysis, we systematically and bibliographically reviewed all her research works starting from the 1970s to the present, i.e., 2023, June 15. Overall, however we have attempted to deeply investigate the depth of all her research works, we have to admit that the vastness of her research and her widespread contribution are unfathomable.

Diane Larsen-Freeman's Overall Contribution

As a multilingual scholar with multiple areas of interest, Diane Larsen-Freeman's influence on the language learning and teaching fields is widespread. To visually represent the contributions, we have provided some details based on the bibliometric analysis of all her research works over the course of her 50-years research. At the outset, the total number of Diane Larsen-Freeman's books, book chapters and journal articles – standing at a string of 170 items –were systematically reviewed. Then, we skimmed and reviewed her overall contributions (Table 1). In pursuance, it emerged that from 2007 to the present a string of approximately 23 interviews have been recorded in the archives of her contributions. Added to this, she has also produced 10 items of videotape series, software, web dialogue, webcasts and online interactions and 17 strings of newsletter and magazines, prefaces, epilogues and forewords and editors' publications and 8 strings of book reviews and working papers.

As regards her editorial contributions and enterprises, from 1976 to the present, she has served as an active editor, or co-editor, or worked on editorial advisory board for roughly 50 world-recognized journals and publishing companies, such as Applied Linguistics, Studies in Second Language Acquisition, Language Learning, Language Teaching Research, TESOL Quarterly, Modern Language Journal, Wiley-Blackwell, Routledge, Addison-Wesley Publishing Company, Cambridge University Press, Newbury House Publishers, Inc., Contemporary Books, Inc., Multilingual Matters, Heinle & Heinle Publishing Company, etc. She was also a co-editor with Anne Burns of Oxford University Press' award-winning series of books in applied linguistics. Most recently, she co-edited, with Phil Hiver, Ali Al-Hoorie, and Wander Lowie, a special issue of the International Journal of Complexity in Education. On top of this, from 1976 to the present, she has also contributed to 18 national committees and played leading roles in four world-known associations: American Educational Research Association, Vermont Academy of Arts and Sciences, American Association for Applied Linguistics and Teachers of English to Speakers of Other Languages (TESOL) Associations.

Diane Larsen-Freeman's contribution is not exclusively restricted to her publications and service positions. Over the course of her 50-year professional career, she has been a frequent speaker, presenting as a keynote speaker in more than 60 countries (Larsen-Freeman, 2012c) and in more than 90 international and national conferences and webinars associated with applied linguistics, SLA research, TESOL issues, teaching grammar, complex dynamic systems theory, and language assessment and teaching. On top of this, she has contributed to the field in logistical and operational terms as well. For example, since 1967 to 2019, she has held more than 15 executive, and professional positions directing a plethora of universities and academic institutes, including directing the famous English Language Institute at the University of Michigan. And, of course, as a teacher for fifty years, first at UCLA, then in turn at SIT, the University of Michigan, and the University of Pennsylvania, she has had ample opportunity to educate the next generation of language teachers and researchers.

To conclude, her overall contributions have all duly led to tributes of varying kinds so that from 1975 to the present, she has received 15 awards and honors in recognition of her formative contribution. As a final statement, it is predicted that her contributions will continue for ages; this is what her articles titled *Just Learning* (Larsen-Freeman, 2017b) and *Complexity theory: The lessons continue* (Larsen-Freeman, 2017c) endorse, paving the promising way for future directions and upcoming generations.

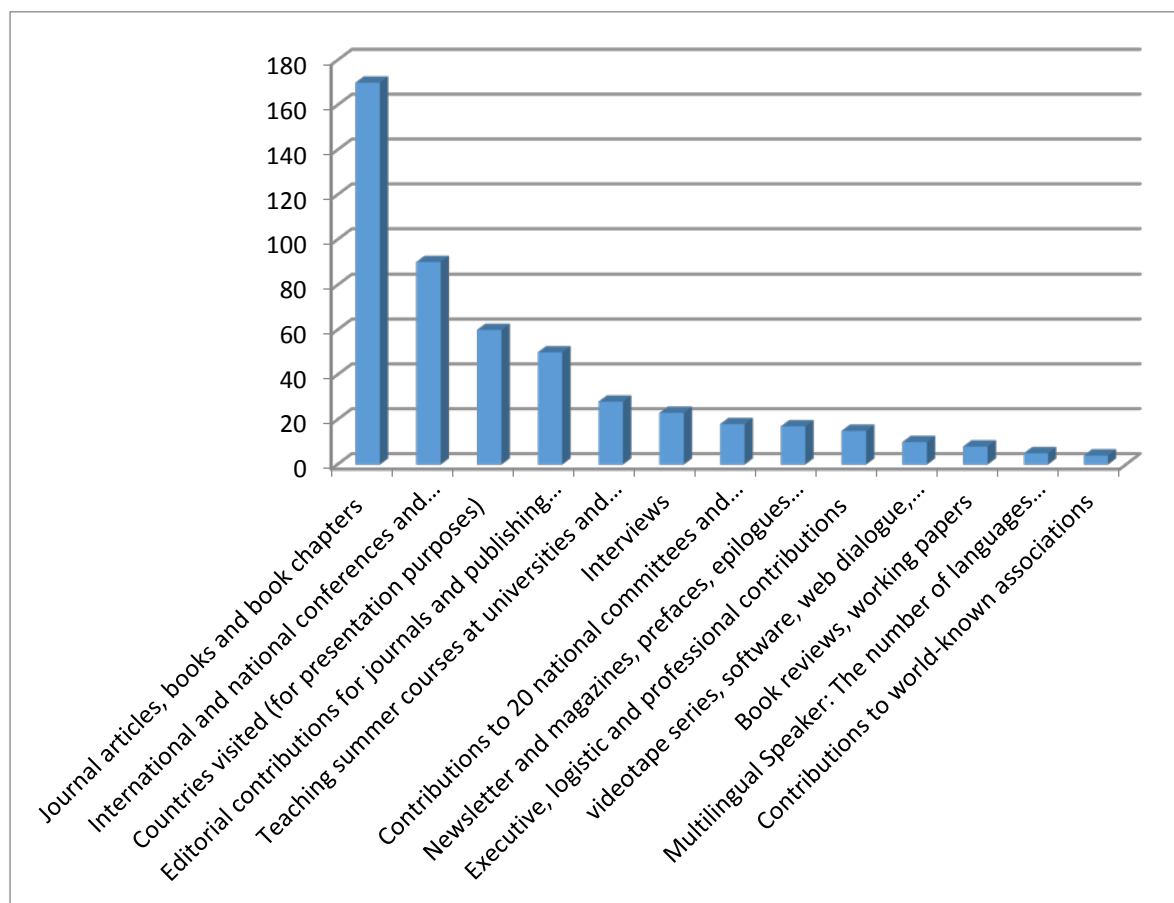
Table 1

Diane Larsen-Freeman's Overall Contribution in her 50-year Research

Overall Contributions	Frequency
Journal articles, books, and book chapters	170
International and national conferences and webinars	90
Countries visited (for presentation purposes)	60
Editorial contributions for journals and publishing companies	50
Teaching summer courses at universities and institutes in the world	28
Interviews	23
Contributions to national committees and board memberships	18
Newsletter and magazines, prefaces, epilogues and forewords	17
Executive, logistic and professional contributions	15
videotape series, software, web dialogue, webcasts and online interactions	10
Book reviews, working papers	8
Multilingual: The number of languages she has studied	5
Contributions to world-known associations	4

Figure 2

Diane Larsen-Freeman's Overall Contribution



As it is clear from *Figure 2*, Journal articles, books and book chapters constitute the highest proportion of her contribution to the field; then, her presentation in varying conferences in varying countries, her editorial enterprises, the summer courses she has taught and many other enterprises are all illustrated in Table 1.

Researched Themes

Diane Larsen-Freeman has multiple areas of interests and has widely contributed to the field with varying themes and focused issues, drawing on numerous disciplines and subdisciplines. Table 2 below indicates some, not all, of the approximate, rather than exact, number of research works (journal articles, book chapters and books) with noted themes in the order of dominance explicit in her 50-year work. We have extracted the following list in keeping with the reference section of the present systematic review (See Appendix 1); we have also removed some of the least focused issues, as they were less prevalently investigated and solely included the highly investigated ones (Table 2).

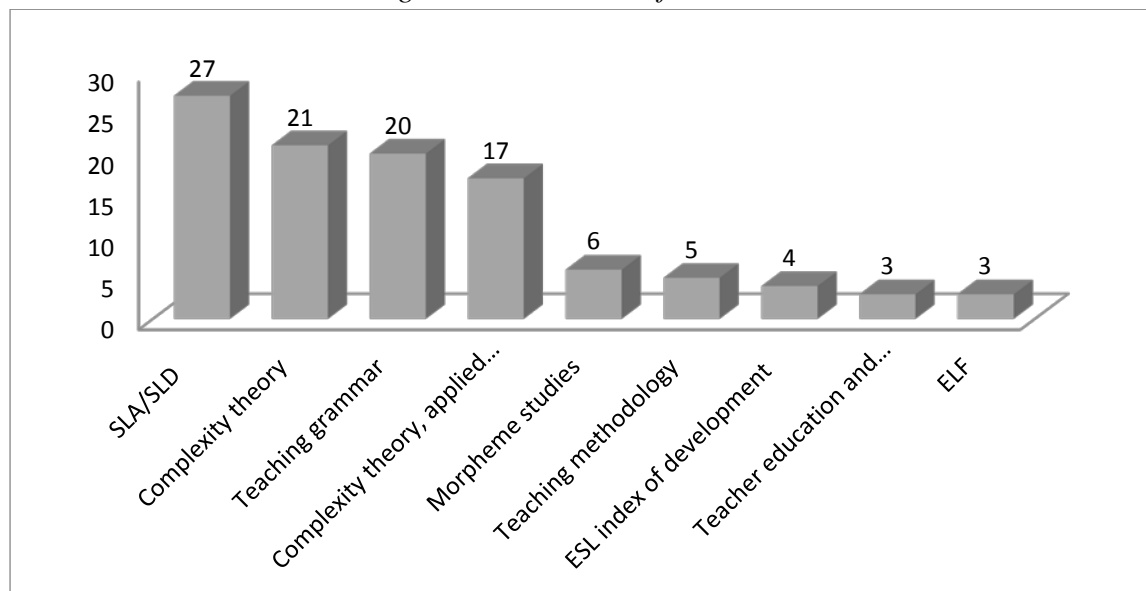
Table 2

Issues Investigated in the order of Dominance and Areas of Concern

Prevalently investigated themes and issues	Number of research works
SLA/SLD	27
Complexity theory	21
Teaching grammar	20
Complexity theory, applied linguistics/ SLA/SLD	17
Morpheme studies	6
Teaching methodology	5
ESL index of development	4
Teacher education and teacher training	3
ELF	3

Figure 3

The Themes and Issues Investigated in the Order of Dominance



As it is clear from Table 2 and Figure 3, the researched themes and issues in the order of dominance are SLA, complexity theory, teaching grammar, complexity theory and SLA/SLD, complexity theory and applied linguistics, morpheme studies, teaching methodology, ESL index of development, teacher education and teacher training, and ELF. In addition to the most dominantly investigated issues, other, however much fewer, researched areas are TOEFL,

metalinguage translation, transfer, discourse analysis, syntax, complexity, fluency and accuracy and other SLA-related issues.

The Systematic Review

At the outset, we would like to provide a context for our systematic analysis by briefly describing the format of our systematic analysis. We developed an impressionistic framework in order to give orientation to the review and survey and to handle Diane Larsen-Freeman's research works over her fifty-year professional lifespan in terms of the number and quality of works created. The first procedure was to have access to all her research works, as it is a more demanding task to access the leading figures' much earlier research works (Brown et al., 2023; Fulcher et al., 2022; Richards et al., 2023). However, her unique cooperation with us (Ali Panahi and Hassan Mohebbi) could play a fair part in the review. This given, we needed at the same time to decide more precisely and detail what to include and what to exclude from her whole work leading to the present systematic review. Therefore, we developed exclusion and inclusion criteria for analysis and reviewed her journal articles, book chapters and books, but all her other research works were only analyzed in terms of her overall contribution, as it is clear in Table 1.

For the systematic review, we created guidelines and criteria for analysis under the general heading of themes. The guidelines contained two superordinate components divided into two main components: theory-practice link and main themes; the former included annotations and relevance to language pedagogy or research and the latter contained article theme, terminology and design types (Table 4). To be more precise, as for her book chapters and books, we analyzed them with a specific reference to a theory-practice link (annotations and relevance to language pedagogy); we did not attempt main themes (article theme, terminology, and design types) in her book chapters and books. However, her research articles were systematically reviewed in light of all superordinate themes, including their subparts. Another point to note is that since we could not obtain access to the full pages of some of the book chapters and books, we could not naturally access their page number, too, so we could just have access to (some of) their abstracts and acted accordingly. Consequently, we had to deviate from APA style in terms of not including the page numbers to some of these book chapters. Also, in the case of books having varying editions available, we have considered the latest edition and excluded the previous ones from review and analysis. A note worth elaboration also is that we observed a couple of Diane Larsen-Freeman's works being reprinted, i.e., published as an article in 1978 (Larsen-Freeman, 1978c) and published then as a book chapter in 2004 (Larsen-Freeman, 2004b), so we considered for review just the book chapter. Furthermore, a statement of note follows that we organized the review in a chronological order. Nonetheless, in the case of two research works containing less or more the same main issues and tenets, we included them in a cluster of citation without considering the alphabetical order (Larsen-Freeman, 1978c, 1983c, 2004b).

Taking into account the points made above, we came up with the idea of creating a framework for analysis and developing general themes including article themes, design types and technical terminology for the purpose of the study. Therefore, before we perform the systematic review, first we present the themes below.

Article Themes

1. Complex dynamic systems theory
2. Learner and learning issues
3. Syntactic structure
4. SLA
5. Teacher education
6. Research methodology
7. Transdisciplinary issues
8. Multilingualism – plurilingualism
9. Grammar instruction
10. Language teaching methodology
11. Applied linguistics
12. Socio-cognitive disciplines
13. Linguistics
14. Psycholinguistics
15. Sociolinguistics
16. ESL/EFL
17. Language assessment

Design Types

1. Transdisciplinary approach
2. Qualitative approach
3. Quantitative approach
4. Mixed-method approach
5. Review-based approach
6. Preview-based approach

Technical Terminology

1. Complexity theory: Complex dynamic systems theory, chaos/complexity theory, complex system, dynamic system, co-adaptive dynamic systems, simplex system, focal system, thermodynamic system, complex adaptive systems approach, dynamic method integration, complexity, dynamic emergence of this complex system, dynamic adaptedness, nonlinear system, open system, open complex systems, systems theory, multidisciplinary, cross-disciplinary, interdisciplinary, transdisciplinary, interconnected system, open-endedness, mutable state, mutable system, adaptive imitation process, fractal topology, reductionism, organic dynamism, bi-directional graphs, topological mapping procedure, coordinate plane, attractor state, end-state, fixed-point attractor, initial conditions, non-teleological, praxis-based forms, system mapping, initial conditions, self-organizing attractor, hermeneutic tradition, process ontology, subsystem, state of being, state of becoming, trans-disciplinarity, individual-based design, group-based designs, idiographic design, nomothetic design, meta-theory, ontology and epistemology, reductionism, emergent system, emergentism, emergent synchrony, self-modifying system, atomism, holism, Cartesian view, mechanistic view, integrated perspectives, integrative framework, supra-disciplinary issues, meta-knowledge, (trans)disciplinary knowledge, relational-developmental principles, engaged individuals, disengaged individuals, creative themes, de-centering applied linguistics, re-centers applied linguistics, problem-centric approach, multiple integrated methods, CDST-compatible methods, dynamic method integration, integrated methodological perspective, comprehensive

framework, comprehensive general view, substantiation research, comprehensive theory, theory mindset, a mini-theory mindset, meta-analytic mindset, representing mindset, intervening mindset, individual mindset, a cumulative mindset, contextually-dependent, relational evidence, non-mechanistic evidence, representational philosophy of science, realism, objectivism, integrative data analysis, meta-regression approach, , CDST process-oriented research nature, non-reductionist systems thinking, interdisciplinary theory, ecological theory, spatially–temporally situated, phylogenetic emergence of agency, ontogenetic emergence of agency, structure–agency complementarity, relational nature of agency, emergent nature of agency, iteration and repetition, transformative view of repetition, generating variation, co-adaptation, iterative learning, iterative practice, heterarchy, situational contingency, multidimensional agency, decentralized causality, multidimensional causality, nonlinearity, multicausality, morphogenesis, relational ecological systems theory, multidimensionality of agency, and heterarchical feature of agency, polycentric perspective, processual, transformation of transfer, dynamics of change, processual questions, self-transformation, monolingual bias, organic dynamism, agency-structure nexus, interconnected timescales, complicated term in CDST, complexity in CDST, micro-development, idiodynamic approach, formative experiment, micro-discursive interaction, conformity to uniformity, shift to localization, local adaptation, local adjustment, chaotic variation, equilibrium, centrality, reorganization, self-organization, dynamism, logic of determinism, linear causality, monological thinking, dialogical thinking, interpretive repertoires, equifinality, chaotic, unpredictable, sensitive to initial conditions, open, sensitive, adaptive, strange attractors, factual shapes, social adaptation, Zipf’s law, Zipf’s Force of Unification, Zipf’s, Force of Diversification, ecological framework, multilayered complexity, unified languaculture, retrodiction process, retro-casting process, prediction process, forecasting process, situated input, path-dependence of simulations, co-adaptive systems, teacher-initiated means, peer-initiated means, self-initiated means

2. Applied linguistics: ELT, SLA, TEFL, TESL, TESOL, L1, input, output, affordances, second order affordances, first order affordances, emic affordances, etic affordances, input frequency, input exposure, input nodes, output nodes, ecology, second language acquisition, first language acquisition, second language development, acquisition, development, multidimensionality, complexity, fluency, accuracy, dysfluency, acquisition, frequency effect, habit formation, feedback, learner-driven feedback, self-repair, teacher recasts, correction elicitation, inner criteria for correction, learning-centered, personalized learning, project-based learning, developing capacity, multilingual language development, plurilingual students, the timing of exposure, enabling conditions, social engagement, pedagogical engagement, fossilization, inter-learner differential attainment, multilingualism, second language development, development, acquisition, learner agency, agency power, transformative power for learning, teacher agency, the person of the teacher, identity of the teacher, collective agency, growth mindset, self-correction, hypercorrection, over-correction, learner-driven feed, digital artifacts, personalized learning, analysis of speech units, L2 oral text analysis, COCA corpus, behaviorist view, contrastive analysis, interlanguage, interlanguage variation, basic variety of interlanguage, transfer, near transfer, far transfer, prototypical transfer, low-road transfer, high-road transfer, negative transfer, positive transfer, induced transfer, analogical transfer, bio-directionality of transfer, cross-linguistic influence, interference, poverty of the stimulus,

impoverished input, creative errors, statistical learning, order of acquisition, developmental sequence, morpheme acquisition, subconscious acquisition, conscious acquisition, teaching practice, ethics, developmental perspective, pedagogical perspective, social perspective, categorical perspective, statistical perspective, teleological perspective, ideological perspective, reflexive/reflective thinking, translanguaging, codeswitching, emic code-switching, ethics of conviction, ethics of responsibility, form-focused instruction, task-based language teaching, input processing, output production, noticing, explicit knowledge, implicit knowledge, factual knowledge, input approach, interaction approach, content-based instruction (CBI), theme-based language instruction, content and language integrated learning (CLIL), Content and Language Integrated Learning language instruction, porous classroom, immersion programs, pedagogical knowledge and pedagogical content knowledge, form, function, meaning, experiential learning, internationalism, stimulus-learning response, reflective teaching, inquiry-based teaching, intra-variability; inter-variability, authenticity, scaffolding, unilateral linear view of teaching and learning, technology-enhanced language learning, construction learning, concept learning, form-meaning-use mapping, form-meaning links, language-using patterns, foreigner talk discourse, creative construction, SLA index development, developmental index, rehearsal, strategic planning, on-line planning, within-task planning, task complexity and temporal reference, rule-based learning, item-based learning, single mechanism, dual mechanism; implicit processing, explicit processing, declarative memory, procedural memory, saliency, contingency, usage-based learning, associative learning, overgeneralization error, L1 interference, learning inflectional morphology, morpheme acquisition, form-based morpheme processing, form-based morpheme acquisition, meaning-based morpheme processing, meaning-based morpheme acquisition, use-based morpheme processing, use-based morpheme acquisition, dual-processing perspective, memory-based item-by-item associative learning, rule-based learning account of SLA, associative learning account of SLA, autonomy of learners, emancipation of learners, empowerment of the learner, verbal behavior, critical pedagogy, teacher-fronted pedagogy, error and innovation, logic of freedom, behaviorist approach, post-behaviorist approach, rote learning, automaticity, exact repetition, public repetition, intentional repetition, immediate repetition, learner self-repetition, other-oriented repetition, repeated task designs, repetition drills, transformation drill, a question-and-answer drill, and a chain drill, substitution drills, teacher-led drills, English as a lingua franca, micro-level changes, macro-level changes, mutual intelligibility, lingua-cultural identity, monocultural identity, postmodern globalization, inert knowledge problem, inadequacy of initial learning, Anderson's declarative knowledge, Anderson's procedural knowledge, active construction, schema, metacognition, metacognitive skills, self-regulation, action schemata, affordance-activity view, active accommodation, commodification of language, target-like use, non-interface position, form-focused instruction, reconceiving grammar, grammar teaching, comprehensible input, comprehensible output, flooding the input, focused tasks, teachers' sense of plausibility, things-in-pocket task, formal instruction, semantic complexity, phonological complexity, L2 index of development, L1 mean length of utterance, error analysis, positive feature analysis, second language index, positive reinforcement, foreigner-talk adjustments, English for special (specific) purposes(ESP), English for academic purposes, English for sciences and technology, linguistic modification, elaborate modifications, comprehension checks, confirmation checks,

expansions, requests for clarification, self-repetition, stability, variability, Interlanguage systematicity, synchronic variability, ubiquitous variability, variable competence, nonsystematic free variation, sociolinguistic construct of speech style, other-regulated speech, self-regulated speech, stage of acquisition, linguistic environment, communicative redundancy, static competence, language competence, linguistic competence, grammatical competence, Dell Hymes' communicative competence, target communicative competence, pragmatic competence, symbolic competence, homogeneous competence, classroom ecology, spatial-temporal context, here-and-now, sequestered problem solving contexts, nonlaboratory settings, obligatory contexts, motivation, integrative motivation, instrumental motivation, pre-actional stage of motivational influence, actional stage of motivational influence, executive motivation, motivational retrospection, post-actional stage, attitudes, aptitude, persistence, identity, job, self-efficacy, memory strength, beliefs, attitude, age, experience, knowledge of English, learner-centered, learning centered, teacher centered, adaptability, identity, academic achievement, success or failure, processing strategies, Earl Stevick's technemes, hyper polyglots, 'garden path' strategy, cognitive strategies, communication strategies, communicative strategies, learning strategies, proficiency, language proficiency, proficiency movement, native-speaking proficiency, native-like proficiency, cognitive/academic language proficiency, basic interpersonal communication skills, analytic aptitude, memory-oriented aptitude, self-esteem, extroversion, sensitivity to rejection, empathy, inhibition, tolerance of ambiguity, risk-taking, moderate anxiety, risk-taking anxiety, facilitating anxiety, field independence style, field dependence style, category width style, reflectivity style, impulsivity style, aural-visual style, analytic-gestalt style, social variables, linguistic variables, cognitive variables, gradual process of language learning, nonlinear process of language learning, dynamic process of language learning, receptive/productive) skills, language as mental construct, language as use, langue, parole, competence, performance, synchronic, diachronic, innatism, constructivism, individual speaker-hearer, social interaction, communicative purposes, adaptation – co-adaptation, coordinated interaction, classroom interaction, transactional, interpersonal, self-expressive, social integration, social interaction, dynamic interaction, social synchrony, social dimension, interactional adjustments, negotiation, language socialization, communicative fluency, productive oral ability, game-based learning, technology, mobile devices, gesture-based computing, learning analytics, linguistic resources, prosodic resources, interactional resources, nonverbal resources, graphic resources, pictorial resources, auditory resources, artifactual resources, nonlinguistic resources, multimodal semiotic resources, individual differences, intra-individual variation, implicit norm, learner ideology, empowerment, marginalisation, social mobility, micro contexts, meso contexts, macro level of ideological structures, social-local worlds, world languages, World Englishes, technocratic English, modern languages, foreign languages, threshold languages, critical languages, subject language, subject matter, knowledge economies, creative construction, positive affective climate, literacy practices, macro-strategies, post-method strategies, exploratory teaching, butterfly effect, soft assembly, cognitive context, cultural context, social context, electro-encephalographic images, functional magnetic resonance images, exemplar-based learning, restructuring, U-shaped development, language use, language change, L2 learnability, feedback, cortico–cortico feedback loops, cortico–thalamic feedback loops, lexical networks, interface mechanisms, noticing, selective attending, noticing the gap, skill-

building, coaching, processing, sensation, perception, representation and process, fuzziness of language development, dynamism of language development, interindividual variability, intraindividual variability, language-using processes, socio-cultural–cognitive–historical context, microgenetic techniques, international language of communication, international language of technology, international language of commerce, international language of science, basic communicative ability, globalization, idiosyncratic dialect, approximative system, otherness, incompetence, context-sensitive, participant-sensitive

3. Linguistic and syntactic issues: Grammaring, morpheme, allomorph, T-unit, T-unit length, error-free T-unit length, minimal terminal unit, transformational generative grammar, universal grammar (UG), language acquisition device (LAD), internal grammar, developmental sequences, phonological complexity, perceptual salience, systematic variation, U-curve, plateau in development, form, function, contrastive analysis, end-state grammar, semiotic feature, semiotic process, language self-regulating properties, morphosyntax, non-linear development, bifurcation, morphosyntax, bifurcations series, bifurcation phenomena, innate grammar, universal grammar, minimalist program, language-specific parameters, dialect ideology, standard language, teleology ideology, language ideology, English verb-argument constructions, verb-tense aspect, verb tense-aspect system, stative verb, verb locative, verb object locative, ditransitive, pathbreaking verb, linguistic constructions, linguistic schema, type/token frequency distribution, creative linguistic usage, prototypicality, ambiguity, generality, redundancy, motion construction, verb-centered argument-structure patterns, semantic bootstrapping, semantic inheritance, syntactic bootstrapping, schematic constructions, Syntagmatic patterning, rule-based system, grammatical inflection, grammatical morpheme, reported morpheme sequence, frequency order of morphemes, morpheme difficulty order, regular morphological processing, irregular morphological processing, lexicogrammatical patterning, qualitative methodology, lexical trail analysis, order of morpheme acquisition, morpheme usage, bilingual syntax measure, stress, segmentation, vowel reduction, syntactic complexity, transformational grammar, mechanics, clarity, organization, grammar, lexical choice, number of words, number of T-units, structural avoidance phenomenon, discourse analysis, discourse hopping, discourse freezing, technocratic discourse, discourse communities, speech acts, conversational structure, event scripts, rhetorical organization, dialects, registers, idiolects, morphogenetic process, complex syntactic structure

4. Theories, approaches, methods, hypotheses and views: Supra-theory, complexity and dynamic systems theory, critical theory, language socialization theory, social identity theory, usage-based approaches, method, post-method, post-method condition, the biocultural perspective, ecological approach, empirical research, socio-cognitive approaches, variationist sociolinguistics, critical realism theory, ethnography method, case-based methods, dogmatic falsificationism, socio-cognitive theory, Labovian-inspired sociolinguistic theory, relational ecological systems theory, Manfred Pienemann's processability theory, Bill VanPatten's input processing theory, Robert DeKeyser's skill acquisition theory, communicative approach, psycholinguistic approach, cognitive approach, conversation analysis approach, micro-analytical approach, language socialization theory, identity theory, sociocultural theory, 'wide' E-approaches, embodied approach, embedded approach, extended approach, enactive approach, ecological approach, ecological theory, information-processing theory, construction grammar approach, production-oriented approach, performativity theory, enactivist approach,

Bakhtin's dialogical approach, deductive approach, inductive approach, emergentist theory, connectionism, inter-comprehension approach, essentialist language ontology approach, one-size-fits-all approach, audiolingual method, Grammar Translation method, reductionist approach, idiodynamic approach, reduction approach, behaviourist view of language, disenfranchising view of language, cognitivist view of SLA, social view of SLA, evolutionary view of the language learner, piecemeal view of SLA, atomized view of SLA, neurobiology view of SLA, nativist view of SLA, behaviorist view of SLA, environmentalist view of SLA, interactionist view of SLA, vague linguistique, Chomskyan view of creativity, stimulus-response view of language acquisition, bottom-up view of language acquisition, emergent view of language acquisition, grammar-translation method, direct method, Audio-lingualism, audio-lingual method, community language learning method, innovative methods, the silent way, total physical response, suggestopedia, community language learning, counselling learning, comprehension approach, communicative approach, communicative language teaching, inner criteria approach, innatism, cognitivism, interactionism, property theory, transition theory, process-oriented perspective on SLA, transformative approach, cognitive view of transfer, emotional view of transfer, motivational view of transfer, contextual view of transfer, individual view of transfer, interactional view of transfer, transformational view of transfer, actor-oriented transfer approach, complexity paradigm, simplicity paradigm, non-integrative approach, guided-participatory approach, task-based language teaching, input-processing approach, comprehensible output' approach, concept-oriented approach, grammaring approach, theory of syntactic complexity, government-binding theory, content-based approaches, task-based approach, cognitive-code approach, principled eclecticism, localization of practices, oral-based approach, natural approach, critical period hypothesis, awareness (awareness hypothesis), Schmidt's noticing hypothesis, interlanguage hypothesis, noticing hypothesis, natural order hypothesis, comprehensible input hypothesis, i+1 hypothesis, Michael Long's interaction hypothesis, interface hypothesis, weak interface, strong interface, cognitive hypothesis, threshold hypothesis, consciousness-raising hypothesis, learner variety view, target deviation view, target language view, Comparative Fallacy view, Krashen's monitor theory, sentence-level instruction for teaching verb-tense, discourse-level instruction for teaching verb-tense, hapex legomenon phenomenon, dual processing view, theory testability, theory reproducibility, theory predictability, utilitarian view, post-disciplinarity view, reading method, National Defense Education Act, army specialized training program, unifying theory, unifying theory of language, teaching, and learning, pedagogical approaches, humanistic methods, humanistic pedagogies, developmental view of language learning, audiolingual revolution of the 1950s and 1960s, communicative language-teaching revolution of the 1980s, teacher-centered approach, learner-centered approach, the top-down theory-to-phenomena approach of classical science, property theories, transition theory, general systems theory, capacity-building approach for language education

5. Research methodology issues: design-based research, cross-sectional studies, quantitative studies, action research, teacher research, transdisciplinary research, exploratory research, pilot research, process-oriented approach to research, retrodictive qualitative modeling research, problem-oriented research, multidisciplinary approach, cross-disciplinary approach, interdisciplinary approach, integrative research, integrative design, exploratory research, falsificatory research, exploratory research, replication research, substantiation research,

person-oriented research, stimulated recall, idiodynamic research method, dialogic approach, variable-centered research, person-centered research, design studies research, social network analysis research, and process tracing research, classroom-oriented research, relational model building research method, process-product research, group score method, crosslinguistic research, longitudinal research, validity in simulation modeling, causality in research, social sciences research, exploratory research, ecologically valid research, complexity view of reciprocal causality, cause–effect view of research, qualitative research methods, ethnography research, experimental and quantitative studies, formative experiment, design-based research or a design experiment, longitudinal study, case-study, time-series approach, multiple blended research methods

6. Cognitive and affective factors: cognitive revolution, cognitive engagement, emotional engagement, reflexive engagement, learner as active recipient, learner as passive recipient, self-expression, embodied cognition, idiographic psychology, person-oriented psychology, cognitive process, associative processes, cognitive learning, associative learning, psycho-perceptual factors, analogical reasoning, perceptual processes, working memory, short term memory, long term memory, analogical reasoning, performance-oriented processing, semantic processing, ontogenetic processes, phylogenetic processes, input processing, cognitive development, conceptual development, internal-external processes, socio-emotional factors, socio-cultural, socio-political, ideological factors, politico-economic factors, reductionist cognitive view of learning

7. Syllabus and curriculum: innate syllabus, built-in syllabus, theme-based syllabus, curriculum development, organic curriculum development, coursebook, materials, linear syllabus, structural syllabi, notional-functional syllabus, analytical syllabus, topical syllabus, situational syllabus, procedural syllabus, competency-based syllabus, text-based syllabus, content-based syllabi

8. Testing and assessment: self-referential assessment, formative language testing, standardized assessment, computerized adaptive testing, standardized high-stakes tests, theory generalizability, self-referenced assessment, semantic recognition test, rhyming recognition test, ecological validity, retrodictive examination, discrete test items, decontextualized test items, empirical test, placement test, integrative tests, dictation test, oral interview test, oral proficiency interview, pragmatic test, reliability, face validity, discriminant validity, TOEFL, systematic assessment, Interagency Language Roundtable, Standards for Foreign Language Learning, Council of Europe’s Common European Framework of Reference (CEFR), ACTFL standards of the 1990s, FSI scales of the 1980s, Foreign Service Institute (FSI ratings), U.S. government’s Interagency Language Roundtable Scales, outcome validity, process validity

9. Interdisciplinary/intradisciplinary Sciences: Complex dynamic systems theory, applied linguistics, critical applied linguistics, SLA, linguistics, structural linguistics, psychology, behavioural psychology, cognitive psychology, generative linguistics, psycholinguistics, neurology, neurolinguistics, sociolinguistics, neurobiology, socio-politics, socio-historico-politics, socioeconomics, pragmatics, anthropology, phonology, morphology, ecology, multilingualism, monolingualism, plurilingualism, ACTFL, semantics, syntactics, diachronic linguistics, lexical semantics, neuroeconomics, ecological psychology, technological sciences, Labov’s variationist sociolinguistics, anthropology, anthropological linguistics, linguistic

anthropology, cognitive linguistics, corpus linguistics, usage-based linguistics, systemic functional linguistics

10. Systems, models and principles: computational model, emergent connectionist model, general linear model, statistical network modeling, Schumann's acculturation model, Schumann's pidginization model, principle of disjunction, presentation, practice, produce (PPP), fixed abstract principles, parallel distributed processing model, connectionist model, variable competence model, information-processing model, Chomskyan models, rule-based model, asset model of teaching, energy conservation principle, social models, neurological models, nonlinear factor analysis models, confirmatory factor analytic model, agency model, psychological principles of category learning, social principle of coadaptation, language as internal rule-governed system, language as patterns-in-use system, preformativism, dynamic modeling, efficiency principle, Andersen's one-to-one principle, social distance(principle), psychological distance (principle), Gardner's Socio-educational Model, Gardner's integrativeness model, belief systems, cultural values, political values, religious values, economic values , Prahu's Bangalore/Madras communicational teaching project, simulation model, methodological principles, computer modeling, neural network (or connectionist) models, agent-based model, Child Language Data Exchange System, process-oriented models of motivation, structural equation modeling, principles of complexity theory, principles of system behaviour, Herdina and Jessner's dynamic model of multilingualism

Technical Terms for the Themes

With reference to the subjective development of the main themes and technical terms, our systematic review of Diane Larsen-Freeman's articles led to 10 umbrella issues: 1. Complexity theory 2. Applied linguistics 3. Linguistic and syntactic issues 4. Theories, approaches, methods, hypotheses, and views 5. Research methodology issues 6. Cognitive and affective factors 7. Syllabus and curriculum 8. Testing and assessment 9. Interdisciplinary and intradisciplinary sciences 10. Systems, models and principles. By this account, we extracted and grouped terms separately for the 10 umbrella issues, as the number of terms appear in Table 3 and Figure 4.

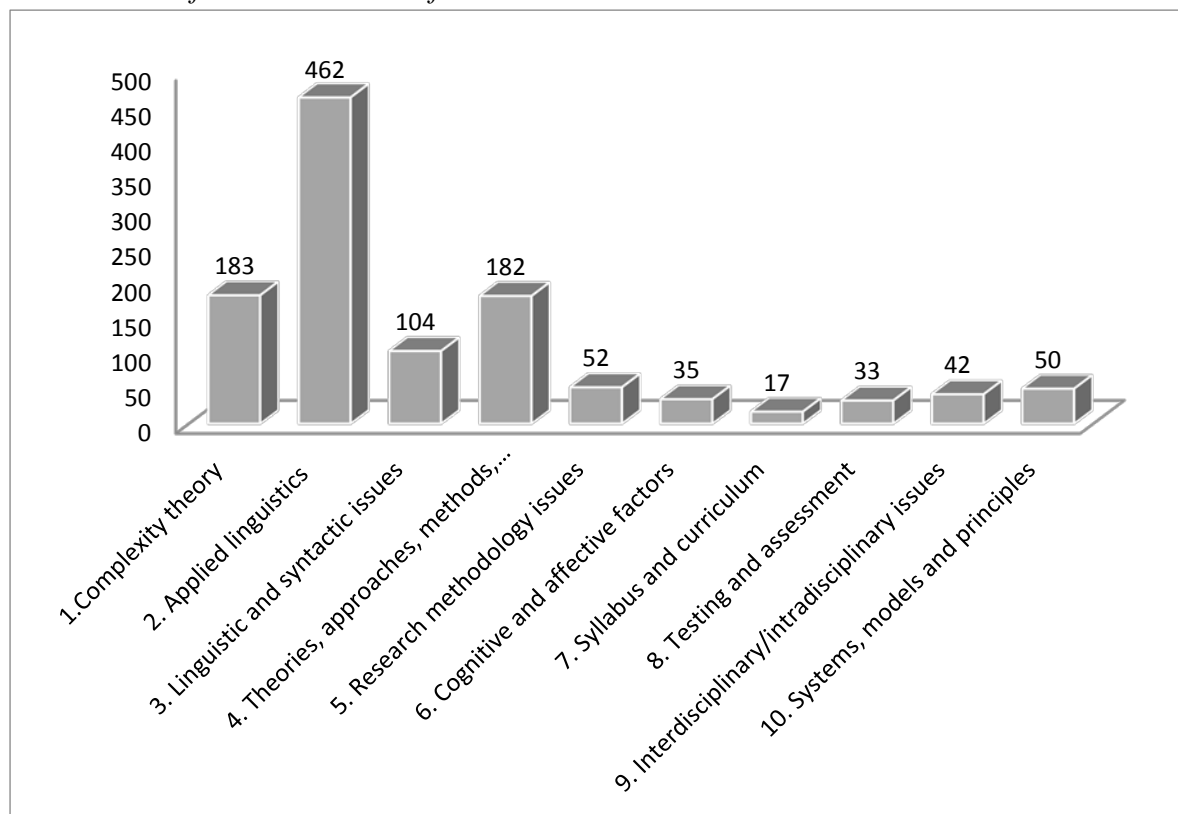
Table 3

The Number of Technical Terms for the Themes

Umbrella theories and issues	Number of extracted terms
1. Complexity theory	183
2. Applied linguistics	462
3. Linguistic and syntactic issues	104
4. Theories, approaches, methods, hypotheses, and views	182
5. Research methodology issues	52
6. Cognitive and affective factors	35
7. Syllabus and curriculum	17
8. Testing and assessment	33
9. Interdisciplinary/intradisciplinary issues	42
10. Systems, models and principles	50
Total number of technical terms	1160

Figure 4

The Number of Technical Terms for the Themes



As it is clear from Table 3 and Figure 4, 462 technical terms for applied linguistics were extracted, which appeared to be the highest compared to other issues: the second issue was complexity theory which contained 183 technical items. The third umbrella issue relates to theories, approaches, methods, hypotheses, and views which stood at 182. The number of terms for other umbrella issues are clear in Table 3 and Figure 4. In sum, the total number of terms stood at 1160. The pedagogical implications of the terms can be for teachers, teacher trainers and experienced and inexperienced scholars. They can review the technical terms with their students and with a view of the frequency of the items, they can introduce them for reading journal articles and for a clear understating of the journal articles in terms of technical issues.

Table 4
Analysis of Articles

Articles	Theory-practice link		Superordinate Components		
	Annotations	Relevance to language pedagogy or research	Article Theme	Main Themes Technical Terminology	Design Types
Perkins & Larsen-Freeman (1975)	The acquisition order of morphemes learned by informal and formal students of ESL is studied; the results revealed the effect of instruction on performance in morpheme usage but not on morphemes acquisition order.	The study has an implication for researchers who would like to be initiated into morpheme acquisition research. Also, in linguistics courses, the article can be informative to the students.	3, 4, 13, 16	2, 3, 5, 9, 10	3
Larsen-Freeman (1975b)	The study used a battery of five tasks including reading, writing, listening, imitating and speaking tasks and examined the sequence of acquisition of grammatical morphemes ESL learners.	Researchers need to consider stress, segmentation, vowel reduction in morpheme studies and also, they should not rely on one explanation for accounting for the findings.	2, 3, 4, 13, 16	2, 3, 5, 6, 10	3
Larsen-Freeman (1976)	The study examines morpheme acquisition order of English morphemes in SLA. Results led to a correlation between the common morpheme difficulty order of the learners and the frequency of occurrence of these morphemes in adult native-speaker speech.	The study is of potential use for scholars working in the field of syntax and those who are interested in teaching syntax course. Therefore, it can be useful for graduate and undergraduate and postgraduates as well as syntacticians.	2, 3, 4, 13, 16	2, 3, 4, 5	3
Larsen-Freeman & Strom (1977); Larsen-Freeman (1978a, 1978b)	Using 48 compositions written by non-native speakers of English language, researchers attempted to construct an L2 index of development. Subsequently, an L2 index of development in Larsen-Freeman (1978a, 1978b) is more detailed.	Researchers need to utilize an L2 index of development for the purpose of comparing L2 research populations.	2, 3, 4, 13	2, 3	3
Larsen-Freeman (1978d)	The study examines an acquisition order of English morphemes to which ESL learners adhere and reviews and provides possible explanations for the occurrence of such a morpheme order.	The existence of a significant correlation between the common morpheme difficulty order of the learners and the frequency of occurrence of these morphemes in adult native-speaker speech is an important finding for scholars.	3, 13	3	3

Larsen-Freeman (1987a)	The study examines language teaching methodology over the course of 25 years with reference to language teaching/teacher, learner/learning and language/culture, the kinds of syllabi, methods and principled eclecticism.	The study has implications for teachers, learners, educators, teacher candidates, graduates and undergraduates, as it is rich with detailed historical issues which can be an effective review.	2, 4, 5, 10,11, 12, 13, 16	2, 3, 4, 7, 8, 10	5
Larsen-Freeman (1987b)	Diane Larsen-Freeman reacts to Leo A.W. Van's review of her book and helps readers become acquainted with the reality and the principles and techniques of each method.	Raising the awareness of the readers, it helps teacher trainers, teacher educators and teachers to use the book as part of teaching methodology course syllabus.	2, 4, 10, 16	2, 4	5
Larsen-Freeman (1987c)	The article examines the innovative methods including silent way, suggestopedia, community language learning, comprehension approach and communicative approach and also details their features.	Grounded in linking theory to practice and approaches to techniques, the book offers effective options for the teachers, teacher trainers and teacher candidates.	10	2, 4, 7, 9,	5
Larsen-Freeman (1989b)	The study examines the varying perspectives regarding teaching grammar, such as focus on language form, focus on message and three dimensions for teaching grammar. A more balanced perspective regarding the effectiveness and role of grammar teaching nowadays is advocated.	The study can potentially have some implications for teachers. They need to study varying approaches and assumptions and experience numerous kinds of practice and activities and consider grammar instruction and learning as a process, i.e., "grammaring" coined by Diane Larsen-Freeman.	9	1, 2, 4	1, 5
Larsen-Freeman (1991a)	The article is a comprehensive one in terms of a review of varying SLA theories, models and principles over the course of decades.	Teachers, educators, and scholars will read and enjoy the article, as it initiates them into a solid background into SLA theories.	2,3,4,11, 13, 14, 15, 16	2, 3, 4, 8, 10	5
Boldt et al. (1992)	Using ACTFL descriptors as anchors for the TOEFL scores, the study aligned verbal descriptions of test takers' language performance on TOEFL	The study is of potential application for teachers, language assessors and educators. Since both TOEFL scores and ACTFL ratings reveal common skills, the scholars and testers can use them depending on the needs of education context.	17	2, 8	3

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Larsen-Freeman (1997a)	The study examines the complex nonlinear systems occurring in nature and language and language acquisition, describes features of complex nonlinear systems, and highlights the same features with suitable examples in language and language acquisition.	The article can effectively initiate the readers into the ins and outs of chaos/complexity theory and that how to connect varying theories of SLA to language pedagogy in the classroom. The article can serve to be a part of course syllabus, too.	1, 4, 11, 13, 14, 15	1, 2, 3	1
Larsen-Freeman (1997b)	The article explores issues regarding the misconceptions and claims of grammar, the most noticeable one being that grammar is acquired naturally by all learners and is learned one at a time, so it should not be instructed.	The study has implications for teachers, as they need to uncover the myths and view grammar instruction effective, considering grammar as a tool serving a communicative purpose.	4, 9	2, 3	5
Larsen-Freeman (1998a)	The study reviews the learner variety perspective and beyond in the context of SLA in an answer to Klein. It creates a historical context for the issue.	The article has a potential implication for researchers and teachers: It briefly explains key issues in SLA, so it can be informative.	4, 11, 12, 13, 14	2, 4, 5, 9	5
Larsen-Freeman (1998c)	Diane Larsen-Freeman expresses her own personal experience on the theme of teachers as learners, and learners as teachers and language education as a life-long process: she creates a framework within which she shares her own experiences.	The article is informative to language teachers, professional and educators. They need to realize that learning is life-long and this in turn indicates that no one is perfect. Therefore, teachers should always learn as the learners do.	1, 4	1, 2	1
Larsen-Freeman (2000a)	The article examines general and specific issues concerning applied linguistics and its subfield, i.e., SLA, as two autonomous and emerging disciplines. Explicitly, the study reviews the challenges and roles related the two and the disciplines the two draw on to contribute to language pedagogy.	The study can provide a theoretical knowledge base for the teachers and educators: This competence can help them justify and support the practices they perform in the classroom. In brief, the study contains a collection of disciplines which can broaden the horizon of the readers.	4, 11	2, 4	1
Larsen-Freeman (2002a)	The study examines issues on frequency as a significant factor in SLA through examining historical views, frequency effects in input as well as issues on interactions, and dynamic interplay.	The implication for teachers and educators is that teachers and researchers should not be satisfied with a simple frequency explanation, but rather they need to interpret it in order to make sense of it.	3, 4, 13, 14, 15	2, 3, 7,	1

Larsen-Freeman, Kuehn, et al. (2002)	The study examines and reviews tense-aspect issues in terms of tense-aspect as a system, tense-aspect at text-level for ESL/EFL learners, and use of tense for sequencing events.	Reading the article can raise the consciousness of the teachers of the techniques and significance of teaching tense-aspect at a discourse level for ESL/ EFL students.	3,16	3, 4	5
Larsen-Freeman (2004d)	The study reports on studies applying conversation analysis to SLA and its contribution to the reconceptualization of language, its role in acknowledging learner agency, i.e., the way learners play a vital role in learning and the role of conversation and its analysis in enhancing learning.	The study can help teachers and researchers to realize that conversation analysis can help identify affordances implicit and explicit in the context where learner agency is highly valued: this is what is intended in chaos/complexity theory.	1, 2, 4, 11	1, 2, 4	1
Larsen-Freeman (2006a)	The study examines the emergence of complexity, accuracy and fluency, in the written and oral production of Chinese Learners of English in the context of dynamic systems.	There are implications for researchers, as the study is informative in terms of a design-based research and uses a transdisciplinary approach.	1, 4, 7, 11	1, 2	1, 2, 3
Ellis & Larsen-Freeman (2006)	The study examines complementary pairs, theories and models in applied linguistics and the emergent properties of a multi-agent, complex, dynamic, and adaptive systems, i.e., complexity theory.	Professionals, scholars and teachers can use the details of complementary issues and concerns in applied linguistics in the context of complexity theory.	1, 3, 4, 13	1, 2, 4, 10	1
Larsen-Freeman (2007a)	The study examines main issues related to teaching and learning English, the growth of English and problems with this growth and clarifies the way to move beyond ideology and teach English for empowerment.	Teachers and researchers need to be aware that language is for communication not for perfection. So that learning English means that its speakers should not think of being native-like, rather of being intelligible.	2, 4, 16	2	5
Larsen-Freeman (2007b)	The study examines two individual or cognitive and social or contextual views and elaborates on the debate between the two in SLA: chaos/complexity theory is offered as a possible solution.	Researchers should realize that the move away from cognitive and social views towards complexity theory does not mean they abandon the previous two, rather they need to have a novel view of them.	1, 4, 12	1, 2, 4	1
Larsen-Freeman (2007c)	The study reviews issues in SLA, her professional development in terms of her	Researchers and educators can review Diane Larsen-Freeman's SLA	1, 4	1, 2, 4	1

	arrival at chaos/complexity theory (C/CT), and surveys the complementarity of C/CT and DST in understanding the second language acquisition process.	background and the process of her arrival at DST and get familiar with her varying seminal articles on SLA and CDST.			
Cameron & Larsen-Freeman (2007)	The article reviews the contents of their book to be published covering issues such as complex systems in language development, in discourse and in the classroom and researching complex systems in applied linguistics.	Researchers can use the content of the article and consider it as a model for writing the review article and also, they can be motivated in doing research into complexity theory issues.	1, 4, 7, 11	1, 2, 4, 10	6
Larsen-Freeman (2008)	It reviews the role of theory in TESOL, in language education: a theory helps us to be clear about, affirm, inform, or challenge what we do, connect with others; and make sense of our experience.	A theory in TESOL provides heuristics for teaching practices. helping to justify our classroom teaching and equipping us with theoretically-informed techniques for solving problems.	1, 4	1, 2, 4	1, 5
Larsen-Freeman & Cameron (2008a)	The study examines research methods in SLA in the context of CDST with exclusive reference to kinds of research methods, approaches, and models and their advantages and disadvantages.	Researchers can benefit from the message of the article and view research in terms of co-adaptation and emergence in the context of complexity theory view of research.	1, 4, 10	1, 2, 5, 6, 10	1
Larsen-Freeman & Freeman (2008)	The chapter reviews varying issues on foreign languages teaching and learning in terms of historical account of the field, subject matter, teaching methods and revolutions in the field and complexity theory.	Teachers and scholars can potentially benefit from the article, as it provides an informative background to the field and helps readers review, rethink and reconsider the key issues.	1, 2, 4, 7, 8, 10, 11, 12, 13, 14, 15, 16	1, 3, 2, 4, 8, 9, 10	1
Ellis & Larsen-Freeman (2009a)	The study investigates an analysis of interactions in the co-adaptation, usage, structure, and cognition of conversational issues, and emergence of linguistic constructions in the light of English verb-argument construction.	Teachers and syntactic scholars should consider that language and its use are mutually interdependent, so in both instruction and research we need to look at form-meaning-use mapping and their interaction.	1, 3, 7, 9, 12, 13, 14, 15	1, 2, 3, 6, 9, 10	1,3
Larsen-Freeman (2009a)	The article provides an historical account of SLA and complexity, accuracy and fluency (CAF) and presents related challenges and situates the study of CAF in a frame.	Researchers need to discern that CAF must be investigated in a context-dependent situation where the three must together, rather than independently, be researched.	1, 2, 3, 6, 7, 13, 16	1, 2, 3, 4, 8,	1, 5

Larsen-Freeman (2010a)	The study examines the learning of inflectional morphology and issues related to form/meaning-based, and use-based morpheme processing and acquisition in light of rule-based, or associative learning account of SLA.	Teachers need to understand the complexity of L2 morphology processing and acquisition and consider the type of instructional factor leading to productive outcome.	2, 39, 13, 14, 15	1, 2, 3, 4, 6	5
Larsen-Freeman (2011c)	Teaching grammar with teaching grammaring is compared. She elaborates on the inert knowledge problem (a term coined by Alfred North Whitehead) according to which the learners have the knowledge, but are unable to activate it; she offers some solutions.	The study has implications for teachers and teacher trainers; although presentation of rules, drills and exercises are considered the traditional way of teaching grammar, a process approach related to teaching grammar should be considered, i.e., grammaring.	9	1, 2, 3	1, 5
Larsen-Freeman (2012a)	The article reviews issues on the emancipation of learners and their autonomy, innovation, power and responsibility. It frames this view of learners within complexity theory.	Teachers need to consider learners as knowledge constructors, creative and innovative. So, learners should be helped to move from dependency to autonomy.	1,2, 7	1, 2, 3, 4, 6, 7,10	1,5
Larsen-Freeman (2012b)	The study examines contributions of repetition to ELT from the perspective of complexity theory: Repetition is not an exact replication, but rather it is an generates variation through iteration.	Teachers can use repetition in the context of CDST: It must be used creatively and iteratively. In this case, it will contribute to learning and teaching.	1, 2, 7, 10, 12, 14	1, 2, 4, 6	1
Larsen-Freeman (2012c)	The study examines the triangle in ELT: language and culture, language learners and learning, and finally language teachers/teaching.	Teachers need to realize diversity within unity and adapt themselves to rapidly changing issues and concerns in language education.	1, 2, 4, 10, 16	1, 2, 4, 7	1, 5
Larsen-Freeman (2012d)	The study examines complexity theory with reference to twelve principles undergirding this perspective and details three of them: dynamism, complexity, and the role of context.	The study can be effective for researchers, teachers and for those novices to the field of complexity theory. It helps educators humanize the process of their academic work.	1, 2, 4, 7,	1, 3, 4, 9, 10	1
Larsen-Freeman (2013a)	The article reviews transfer, types of transfer and varying views related to it. Then, it examines transfer in the context of transformation.	Educators must help their learners to transform rather than transfer their understanding.	1, 2, 7, 11, 14, 15	1, 2, 4, 6, 8, 9,	1

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Larsen-Freeman (2013b)	The study serves as an introduction to complexity theory and its components and characteristics; it heralds a promising view of complexity theory.	The study is an effective review for those interested in complexity dynamic systems theory, as it briefly reviews the main issues.	1, 2, 3, 4, 6, 7, 11, 12, 13,14, 15, 16	1, 2, 4, 6, 8	1
Larsen-Freeman (2013d)	The study examines design-based research, complexity theory, and CALL, claiming that they share a variety of fundamental qualities for research goals contributing to interactivity, dynamism, iteration, and adaptability and focusing on the process of learning.	The article can contribute to language pedagogy in terms of maximizing the positive impact of instructional factors and conditions on teaching, noticing individual differences, and adapting methodology to the needs of learners.	1, 4, 6, 7, 11, 16	1, 2, 4, 5	1
Larsen-Freeman (2014a)	It examines SLA and second language development with particular reference to distinguishing ‘acquisition’ from ‘development’ in light of CDST.	Researchers can analyze the activities of learners from learners’ point of view and help them view learning a continuous developmental process.	1,4	1, 2, 3, 9	1
Larsen-Freeman (2014b)	The introduction introduces the main content of Guerrettaz and Johnston’s article which is associated with the ecology of classroom and CDST.	The brief introduction can help the readers to be familiar with detailed and general issues related to CDST and the related research.	1, 4	1, 2	1
Larsen-Freeman (2015a)	The study reviews the second language acquisition and applied linguistics research literature with reference to the non-interface position, form-focused instruction, and a large impact (reconceiving grammar).	The study can help researchers move beyond process-product research and enact more ecological research considering interconnectivity of classroom events.	1, 2, 4, 6, 7, 9, 11, 16,	2, 3, 4, 5, 8, 10	1, 5
Larsen-Freeman (2015d)	The study reviews varying SLA and linguistics theories and then argues that applied linguistics should adopt a new conceptualization of language with specific reference to chaos/complexity theory contributing to 12 features of complex systems.	The study has implications for scholars and teachers, helping them to realize more about the genetic inheritance, the initial limitations and conditions on human language and their impact on language development.	1, 2, 4, 13, 14, 15, 16	1, 2, 3, 4	1
Larsen-Freeman (2016a)	The study examines classroom-oriented research and classroom ecology in the context of complex dynamic systems theory.	CDST contributes to effective teaching and learning, and doing research, so teachers and researchers can benefit it.	1, 2, 6, 7	1, 2, 4, 5, 10	1
Douglas Fir Group (2016)	Jointly authored by a group of fifteen scholars, the article examines the field of	The study can potentially inspire readers and SLA scholars to investigate	1, 4, 8, 11, 12, 13, 14, 15	1, 2, 4, 6, 9, 10	1

	SLA, the multifaceted nature of learning and teaching, transdisciplinary issues, a framework for theories, and complexity theory issues.	varying facets of SLA and social and academic activities without giving up their particular approach.			
Larsen-Freeman (2017a)	The study reviews and situates SLA research in historical context and provides cognitive, social and sociocognitive accounts and then justifies the argument with CDST.	There exist implications for teachers, researchers, program managers, teacher trainers, and language assessors: All should consider the social ecology.	1, 2, 4, 6, 7, 12, 15	1, 2, 3, 4, 5, 6, 8	1
Larsen-Freeman (2017b)	As a first-person singular article, the study provides a brief, exciting and informative account of Diane Larsen-Freeman's professional life.	There exist potential implications for all researchers, educators, as it reviews both SLA details and her own academic career.	1, 2, 4, 7, 8, 10, 11	1, 2, 3, 4, 9	1
Larsen-Freeman (2018c)	The study examines World Englishes (WE) and second language development (SLD), indicating that SLD researchers gain some deep insight from WE. Therefore, they contain commonalities, between which a dialogue can be created.	Researchers need to recognize the significance of CDST in providing English as a Lingua Franca, SLD and WE with discourse for interacting with those who investigate language use and development.	1, 2, 3, 11	1, 2	1, 5
Larsen-Freeman (2019a)	The article examines the launching of the Journal for the Psychology of Language Learning which centers around research in psychology in the context of transdisciplinary perspectives and contributes CDST-oriented research to the field of psychology.	The study orientates the conventional mentality of those interested in research into psychology to CDST-oriented research and encourages multidisciplinary and transdisciplinary collaboration.	1, 4, 6, 7, 11	1, 2, 4, 5, 6, 9	1
Larsen-Freeman (2019b)	The study examines conceptualization of agency in CDST in light of the relational and emergent nature of agency and the structure–agency complementarity as well as viewing agency as a spatially–temporally situated phenomenon.	The study has potential implications for optimizing language learning outcomes by recognizing learner agency and helping learners develop ethics of responsibility within the framework of transdisciplinarity.	1, 2, 4, 7, 11, 12, 14, 15	1, 2, 8, 9, 10	1
Larsen-Freeman (2019c)	A historical account of second language acquisition/development in terms of varying theories and disciplines are examined and the recent call for a transdisciplinary approach is discussed.	Teachers can use CDST to explore novel ways of teaching and provide their learners with iterative practice helping them adapt their language resources.	1, 2, 4, 7, 9, 10, 11, 12, 13, 14, 15	1, 2, 3, 4, 6, 7, 8, 9, 10	1

Evans & Larsen-Freeman (2020)	Two non-finite adverbial constructions learned by an untutored adult French learner is examined with use of CDST approach with use of a CDST-driven longitudinal design. A clear bifurcation in the developmental trajectory was identified.	Instruction must be viewed in light of the interaction and interdependency of subcomponents of syntax in varying settings.	1, 3, 6, 7, 9, 11, 13	1, 2, 3, 9	1, 2, 3, 4
Hiver et al. (2021)	The significance of a transdisciplinary approach to research is examined in light of encouraging researchers to adopt a pragmatic transdisciplinary approach which is problem-oriented in nature.	It helps researchers to move beyond conventional research and boundaries of disciplines and helps teachers understand the interrelated and interdependent factors implicit in the classroom.	1,2, 4, 5, 6, 7, 10, 14, 15	1, 5, 9	1
Larsen-Freeman, Driver, et al. (2021)	The article deals with the issue of (developing and accessing) learner agency, teacher agency, the ecology of learning and the ecology of teaching.	Teachers can read the article and inspire their students to take control of and invest in their own learning in the present and for the future.	1, 2, 4, 7, 11, 12, 14, 15	2, 6, 7, 8, 9, 10	1, 2
Larsen-Freeman (2023d)	A webinar convened by Seyed Yasin Yazdi, clarifying issues on CDST on the basis of questions raised by Anne Burns, Hossein Farhady, Scott Thornbury, Henry Widdowson, Mathias Schulze, and Benjamin White.	The article can provide theoretical and practical knowledge base for the educators, professionals, teachers and researchers interested in complexity theory.	1, 2, 4, 6, 12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	1
Larsen-Freeman (2022b)	The study provides a reconceptualization of grammar, and surveys grammar as a resource for social interaction. That is to say, it investigates the way grammar and multimodality enact social practices with reference to complexity theory.	The study has implications for teachers and researchers, as it provides an elaborated account of the way to treat grammar teaching within the framework of CDST and the way involvement in grammar interacts with social variables.	1, 4, 9	1, 2, 3, 4, 5, 6, 9	1
Al-Hoorie, Hiver, et al. (2023)	Three approaches for replication in the context of CDST are examined and three conditions for replication, i.e., results interpretability, theoretical maturity, and terminological precision, are presented.	Researchers need to recognize the fact that solutions to the replication challenges and crisis are decades old, so a CDST perspective might prove beneficial.	1, 6, 7	1, 2, 4, 5, 8, 9, 10	1

Table 5*Analysis of the Book Chapters*

Chapter	Theory-practice link	
	Annotations	Relevance to language pedagogy or research
Larsen-Freeman (1974)	The chapter investigates the notion of complexity as one of the components placed on the continuum of grammatical structures, serving as a basis for most ESL grammar textbooks. The result is to make ESL courses more student-oriented and less teacher or theory centered.	The study has implications for the researchers, as they are invited to do further research along the lines of a thorough quantitative study of varying structures in varying situations the language learners might encounter.
Larsen-Freeman (1977)	The current book chapter presents discourse analysis as a potentially effective approach for studying second language acquisition. Therefore, the structure of discourse-level language, L1 acquisition through conversation interaction, and the relationship between age issues and conversational analysis are examined.	The study has implications for teachers and researchers; they need to realize the significance of discourse analysis in developing the fluency of L2 speakers through considering the semantic and communicative roles of speech acts.
Larsen-Freeman (1978c, 1983c, 2004b)	The chapters survey the implications of morpheme studies for SLA with reference to Dulay and Burt's discovery concerning the order of acquisition for eight English morphemes. The study examines the reported research and related issues on the order of acquisition and subsequent research on morpheme studies, all indicating the existence of a pattern for morpheme studies, however with some variant features. The study reports the findings and the effectiveness of research studies conducted on morpheme studies.	There are implications for educators and professionals; teachers need to consider the effectiveness of teaching lexical items associated with morphemes in context and also researchers need to replicate the studies in varying settings. Further, it inspires researchers to do research in their related field associated with morpheme study.
Larsen-Freeman (1982)	The study surveys issues on SLA, indicating that the acquisition of a language involves more than learning its linguistic structures, as learning lends itself well to a social context. Therefore, the study details the roles of communicative competence in a second language.	There are implications for teachers, as they need to consider communicative syllabus along the line of communicative methodology and help their learners with communicative activities rather than purely structural activities.
Larsen-Freeman (1983a)	Diane Larsen-Freeman elaborates on two different approaches in her plenary address at the Second Language Research forum at UCLA: The 'Wait a minute' version and 'on the other hand' version. Borrowing Schumann and Lamendella's models, Krashen's Monitor theory and model of second language learning and learning by Swain, she details the issues.	The chapter has psychological, theoretical and pedagogical implications for researchers and teachers. It can potentially contribute to scholars and educators' knowledge base and help them reflect on the way their action is informed by their different approaches to theoretical claims.
Larsen-Freeman (1983b)	The study reports on some of the studies and research findings associated with a second language index of development. The index serves as a developmental basis or yardstick for measuring and providing a description of second language proficiency.	Teachers, program managers and researchers can learn about efforts to construct an L2 index of development, including a discussion of T-unit length.
Larsen-Freeman (1983d)	The chapter examines the differences and effectiveness of training teachers and educating a teacher. Diane Larsen-Freeman compares the processes of	The study has implications for teacher trainers, program managers, and syllabus designers. They need to realize that syllabus and methodology in teacher training courses should be finely-tuned to

	training teachers for specific situations with educating a teacher for any situation.	both the immediate and long-terms needs and goals of language learners and that a teacher education process can be designed to do so.
Larsen-Freeman (1985a)	A brief account of theories and models in SLA is provided with an emphasis on the learning process, leading in the end to a new research agenda, i.e., the emergence of SLA.	Researchers and educators need to realize that there exists no comprehensive theory and model of learning, although this does not necessarily mean that knowledge of current theory and model is not effective and valuable.
Larsen-Freeman (1985b)	The study examines longitudinal research and cross-sectional research and varying related issues such as subject, task, time, equipment, materials, environment (classroom, or home), context (nonverbal, or conversational), length (of items or tasks), validity and reliability issues and many other related issues.	The study has potential room for experienced and novice scholars; reading the chapter can help them to view the considerations and design research, either a qualitative or quantitative research, in accordance with the needs of the study.
Larsen-Freeman (1985c)	The chapter examines the leftmost box of tripartite schema: Input + Blackbox + output and considering some other issues, such as L1= L2 hypothesis, differential success hypothesis, native speaker/non-native speaker interaction, and learning and learner and varying models and theories.	The study has multiple implications for curriculum developers, syllabus designers, teachers, teacher trainers, researchers, and course evaluators. Clearly, it can help them consider factors concerning nput and its influence on learning.
Larsen-Freeman (1986a, 1986b, 1986c)	Diane Larsen-Freeman explains main issues on TOEFL and she reacts to Sandra Savignon's statements about the examination. Also, in this connection, her comments and discussions (Larsen-Freeman, 1986b, 1986c) are more informative.	The chapter has implications for scholars and teachers interested in research into international tests such as TOEFL and IELTS. Diane Larsen-Freeman's belief that, after 50 years, removing grammatical accuracy from tests of communicative competence is a grave mistake and has implications even now.
Larsen-Freeman (1989a)	The discussion examines Diane Larsen-Freeman's personal musings regarding Charles Fries. First, she starts with skepticism, but finishes it with optimism and surveys the source of an idea, i.e., where ideas come from and the priority of oral language.	The implication of the study is that researchers need to know that ideas have their own sources and attributions, so whatever idea is expressed should be understood within the context where it was first proposed. Also, the study indicates Charles Fries' contribution to the field should be appreciated.
Larsen-Freeman (1990)	The study examines the fact that either there exists an interdependence between theory, practice and research or not. To this end, varying psychological and linguistic issues and concerns, and SLA approaches and theories are reviewed.	The study can help teachers review SLA theories, provide them with theoretical knowledge base and motivate them to do research and connect it to their own practice.
Larsen-Freeman (1991b)	The study examines the state-of-the-art issues regarding teaching grammar and that where it came from. To this end, a historical view of teaching grammar examines main issues relevant to teaching grammar from linguistic, psychological, and SLA perspectives.	The article summarizes both consensus and disagreement regarding the teaching of grammar, by reviewing a number of linguistic theories.
Larsen-Freeman (1991c)	The study clarifies the differences and similarities between ESL and foreign language teaching within the US with reference to syllabi, authentic materials, discourse analysis, teaching/learning process and issues related	The study can provide an effective background for the teachers and teachers trainers; it can lead them to discuss what makes the teaching of particular languages unique and what does the teaching of all languages have in common.

	to learners and teachers. It makes the case that teachers of English and modern language teachers can learn from each other.	
Larsen-Freeman (1991d)	The study reviews and surveys language teaching methodologies and their features and provides a summary of empirical research and practice areas for future research agendas, including process and product studies, and language teacher studies.	One potential implication is that teachers are not and should not be a slave to teaching methods; rather they have their own idiosyncratic characteristics and personal values and context-sensitive experiences which should be respected.
Cohen, Larsen-Freeman & Tarone (1991)	This paper examines six SLA research agendas, elaborates on the impact of SLA research on classroom instruction and examines issues such as teachers' awareness, comprehensible input, focus on form, error correction, pronunciation, speech act sets, and learning strategies.	The implication is that teachers' SLA knowledge and scholars' research can clearly affect both teachers' classroom teaching activities and scholars' investigations.
Larsen-Freeman (1992)	Believing that a training process is situation-oriented and an education process is individual-oriented, the study reviews key issues, characteristics and challenges related to the difference between the two with reference to a three-dimensional model.	The chapter can be used in teacher training courses as a part of syllabus and create a solid ground for teacher trainers or teacher educators in terms of theoretical knowledge base, helping them to justify their training or education practice.
Larsen-Freeman (1993a)	The study examines the usefulness of metalanguage for teacher trainees with use of a 30-item translation exercise, helping them to guess the meaning of items in context; this contributes to the outcome of form-meaning mapping in metalinguistic context.	There exist implications for teachers and teacher trainers, as metalanguage and the use of metalinguistic clues and input can help teacher trainees to understand and shape the intended materials in light of trainees' needs.
Larsen-Freeman (1993b)	The study examines the role and usefulness of grammar instruction and assumptions about communication, reconciliation of grammar and communication, features that grammar and communication share and their application to pedagogy.	Teachers and teacher trainers can use the study for the purpose of orienting their way of grammar teaching with use of communicative activities, forms and practices. Also, the study can serve as a theoretical basis for justifying their practice.
Larsen-Freeman (1995a)	The study investigates grammar teaching and the related misconceptions, such as that the misunderstanding that grammar contains a set of arbitrary rules and that structures do not need to be taught. These all are viewed within a view of communicative methodology.	The potential implication is that grammar instruction should take place, so the question for teachers and researchers should not be either to teach grammar or not, but rather how to teach and research grammar.
Larsen-Freeman (1995b)	The study surveys the evolution of views of language, language learning and language teaching from approximately 1945 to 1995 and also examines these, including the overall role of linguistics in teacher education.	Teachers, researchers and teacher trainers have considered linguistics as a resource which can be drawn on for effective application in the classroom context and for enhancing the quality of education in terms of language pedagogy. However, the influence of at least certain linguistic theories seems to be diminishing, while other disciplines have been gaining in influence.

Larsen-Freeman (1996)	The chapter explores the trends, and concerns related to conducting classroom research, bringing to the forefront those issues germane to real-life decisions intrinsic to research agendas and to the problems related to SLA research.	The study can have a lot of implications, one of which is that researchers should recognize research problems and acknowledge and admit the problems they observe and occasionally they themselves commit: This is imperative with regard to ethical practice in research.
Larsen-Freeman (1998b)	Diane Larsen-Freeman provides commentaries on two case studies presented by teachers. The first has to do with the role of a textbook in language teaching, and the second on the challenges of teaching conversation in China.	Teachers and teacher educators can use the commentary and can be encouraged to provide advice regarding the problems the teachers in the case studies have raised. They can brainstorm their own solutions, drawing on their prior experience or imagining what they might do.
Larsen-Freeman (2001a)	The study examines grammar in terms of research and practice in light of some issues such as (corpus) linguistics, formal grammars, functional grammar, grammar in language education, focus on form, socio-cultural theory, discourse grammar, and connectionism.	There are implications for EFL teachers and learners, as they consider what grammar is, what research projects usefully inform it, and what pedagogical practices are effective.
Larsen-Freeman (2001b, 2014e, 2019d)	The study examines varying grammar views, offers ways for teaching grammar and provides a three-dimensional framework, learning and teaching process, form, meaning and use. It includes a discussion of feedback and related pedagogical issues, such as inductive and deductive approaches to teaching grammar. It also maintains that, grammar instruction in the context of CDST can be informative (Larsen-Freeman, 2019d).	Teachers need theoretical literacy related to grammar, as this helps them with justifying their classroom teaching activities and supporting their pedagogical practices. Also, with reference to grammaring, teachers need to consider the process of teaching grammar as well as the product.
Larsen-Freeman (2002b)	Chaos/complexity theory, as a dynamic and co-adaptive system, is offered as a way of thinking that overcomes the theoretical distinction between language use and language acquisition.	Researchers need to consider binaries and determine if there is a plausible connection between two positions, which might prove illuminating.
Larsen-Freeman (2002c)	This chapter makes the point that grammar is an important resource for making meaning in an appropriate manner. It is not as rigid as some might think; instead, it is a “grammar of choice”.	Teaching grammar as rules makes learners think that grammar is much more arbitrary than it is. Instead, teachers and students alike should understand the empowerment that knowledge of grammar affords them for making meaning and representing themselves as they wish.
Larsen-Freeman & Decarrico, (2002)	The chapter explores varying approaches and models for grammar and examines its functions and varieties in terms of descriptive grammar, formal or functional grammar, mental grammar, generative grammar, and discourse grammar.	It can be helpful for teachers to be aware of grammar-relevant theories and approaches as part of their pedagogical knowledge base.
Larsen-Freeman & Rutherford (2003)	This is an encyclopedic entry for pedagogical grammar. Among other issues it discusses are the requirements for a pedagogical grammar: that it is consistent with what is known about the nature of language, about how languages are learned and about the particular circumstances in which languages are taught.	One issue in this entry is that attention is the difficulty of completely separating lexis and grammar. Another is the question of the learnability of grammar. Above all, a pedagogical grammar should be an aid to learning.

Larsen-Freeman (2004a)	This chapter is a review of the contributions to a book on making form-meaning connections. It points both to the breadth and the narrow scope of the construct, and it suggests issues for form-meaning researchers to consider.	This chapter introduces readers to some of the complexities of what appear to be simple constructs. It invites researchers and teachers to think deeply about the complexities not only of form and meaning, but also to examine their interaction.
Larsen-Freeman (2004c)	This chapter discusses contextual analysis, and its contributions. It also suggests using linguistic corpora to enhance it. It recommends of the research methodology.	The study has implications for researchers: They can use the methodology of contextual analysis and evaluate the usefulness of using linguistic corpora in local settings.
Larsen-Freeman (2005)	The study summarizes main issues related to fossilization, a term being with us since the inception of SLA. It challenges the idea that there is an endpoint to acquisition. The system is always open to change.	While there is no denying that L1 influences L2 development, researchers and classroom teachers can investigate for themselves whether an interlanguage form is forever fixed.
Larsen-Freeman (2006b)	The study surveys the significance of making (partial not absolute) inferences about the form, meaning, and use of grammar structures with use of varying dependable data sources; it also examines generalizability for the inferences.	Researchers need to realize that for sound inference and generalization, they should use complementary data sources and must also bear in mind the locally-driven social and contextual factors affecting the inference and generalization.
Beckner, Blythe et al. (2009)	The study examines language in terms of complexity theory and explores numerous social, cognitive, contextual, cultural and personal issues in the context of dynamic and complex perspective and indicates that there exist patterns which the human brain is good at perceiving and producing.	One of the implications is for the neurolinguistics, as they need to realize that along with the complexity and dynamism associated with language-relevant issues, there are patterns which can help them give orientation to the way speech is organized for communicative purpose.
Larsen-Freeman (2009b)	The study clarifies ambiguities related to grammar through examining grammar pedagogy, approaches to grammar teaching (e.g., PPP approach, non-interventionist approach, input processing approach, focus on form approach, and grammaring approach), and other issues germane to grammar instruction and grammatical assessment.	The study can have effective application in (pre-service and in-service) training courses for raising the theoretical and practical awareness of the teacher candidates. They can be informed of the pedagogical usefulness of teaching grammar and justifying it through theoretical inferences.
Larsen-Freeman (2010b)	The chapter examines two conceptualizations of language in applied linguistics in the light of the distinction between acquisition and participation metaphors and then presents a 'middle ground' position motivated by complexity theory.	Teachers need to consider teaching language forms nonlinear, being affected by multiple-variables, all of which are interdependent, such as instructional variables, teaching approach variables, individual differences variables.
De Bot & Larsen-Freeman (2011)	The chapter reviews dynamic systems theory with specific reference to theories in applied linguistics, DST as a theory of second language development, basic characteristics of DST, DST and language learning and conducting research from DST perspectives.	The study has implications for all educators and researchers; it introduces the main tenets of DST and the way they contribute to and get connected with second language learning and development research.
Larsen-Freeman (2010c, 2015b)	The chapter elaborates on detailed issues related to considering chaos/complexity theory as a lens through which an adequate link between social perspectives and cognitive ones is made in the context of co-adaptive	The implications are profound in classroom contexts where teachers can consider wide ranges of factors involved in language instruction and where numerous dynamic and interdependent issues affect language pedagogy.

	and dynamic systems. Also, the connection between complexity theory and L2 development is detailed in Larsen-Freeman (2015b).	
Larsen-Freeman, Schmid et al. (2011)	The study reviews and surveys the developmental issues on bilingualism, ranging from modular components, hierarchical relationships and linear processes to the one driven by chaos/complexity system, which considers all the languages of the speaker merging in one developmental system.	The study can help researchers and professionals in the sense that it begins from given theories and perspectives of bilingual models and approaches to the most recently favored one informed by complexity theory.
Larsen-Freeman (2011b)	Using a question-posing approach, the study examines key concepts in language teaching, such as What is language? What is culture? What is learning? Who are the learners? What is teaching? Who are the teachers? and explores the intersecting angles of language and teaching, learners and language, context, future trajectory, and technology. Also, the connection between complexity theory and second language development is detailed in Larsen-Freeman (2011a).	The chapter has implications for educators and researchers, as reading it can have potential benefits for understanding and organizing developments in SLA field, providing a ground for reviewing main issues. In addition, the nature of viewing language education from the perspectives of transdisciplinary research and research-based design can contribute to scholars' broadening their perspectives.
Larsen-Freeman (2012e)	Briefly reviewed and surveyed, the chapter presents complexity theory more in detail through providing an informative introduction, a historical discussion, examining core issues related to complexity theory and SLA issues, data elicitation and common measures, and the application of complexity theory in the classroom.	There are implications for educators, teachers and teacher trainers: it can help teachers realize the use of complexity theory for classroom management and for directing the dynamics and co-adaptation of language learning to lead to a communicative and learner-centered outcome.
Larsen-Freeman (2013c)	The study addresses the learning process in the context of complex systems and indicates that learning proceeds through iterative adaptations rather than doing repeated exercise, and that the process of learning should be triggered by interdependent and dynamic variables of the local context.	Teachers can be helped in developing their theoretical knowledge base concerning complexity theory and their classroom pedagogy with particular reference to coadaptation and dynamism.
Larsen-Freeman (2014c)	The chapter examines and introduces ten lessons from CDST and convinces readers that CDST – as a paradigm, or meta-theory, transdisciplinary theoretical framework – is a theory that has dramatically challenged scholars' thinking and research in SLA.	Teachers need to consider learners' individual differences and change their way of teaching and treating the learners to accommodate these; also, they need to continually respond to the potential classroom or instructional problems as need be.
Larsen-Freeman (2014d)	The study adopts a formative perspective in tracing the modern-day status and study of second language acquisition through examining Selinker's contributions to the evolution and ontology of SLA and reconsideration of the interlanguage continuum endpoint.	Reading the chapter can help teachers consider the pedagogical and theoretical fact that there exists no endpoint for the language they are teaching. This can help them further understand that the goal of teaching should not be perfection, rather intelligible communication.
Larsen-Freeman (2015c)	Diane Larsen-Freeman appreciates and credits Caleb Gattegno's contribution to her way of teaching Psychologically authentic learning opportunities and organic syllabi are what she infers from the Silent Way approach, while engaging learners in meaningful communication.	Readers of this much shorter article can potentially come to realize the way Diane Larsen Freeman appreciates the other big figures contributing to some parts of her academic development.
Larsen-Freeman &	The chapter examines global educational events and covers varying challenges in terms of the inadequate preparation of youth in the globalized world, national	The chapter has implications for educational policy makers, program managers, educators, professionals and scholars: It has the potential for broadening their horizon of the present and future status of education.

Tedick (2016)	security, intercultural perception, environmental sustainability, and economic growth.	
Larsen-Freeman (2016b)	Examining the nonteleological character of complexity theory, the study examines language as a complex adaptive system which is constantly changing and argues for a nonteleological view of language, creativity and innovation, and innovation in ELF and SLA.	The implication is that since language is dynamic, teachers need to consider this dynamism in the context of creativity. This means that they can use varying instructional activities tailored to the local needs of the learners.
Larsen-Freeman (2016c)	The study considers and examines Complexity Theory as a suitable theoretical framework effective for ELF researchers, as ELF lacks theoretical tools. So, the qualities of complex adaptive systems and benefits of linking ELF with CAS are argued.	One of the potential implications of the study is that linking complexity theory to ELF promises a discourse that can transcend one's field of preference and interest and help us enter into dialogue with others.
Larsen-Freeman (2017c)	The chapter examines the major features of complexity theory and explores it in terms of metatheory and mentions its transdisciplinary implications. Then, relates it to second language development and offers some effective lessons afforded by the theory.	The study is useful for teachers, professionals and scholars; it can help them understand that complexity theory can give them lessons regarding how to treat SLA-related challenges and chances.
Blommaert et al. (2018)	The chapter focuses on dialogic explorations and prompts asked of authors regarding their current thinking, their notion of meaning/meaning-making, the way humans communicate, language and culture, individual agency and society, the use of their thinking for teachers, significant current issues, and the fit of their bricolage with others.	The study has implications for all educators, professionals and scholars in dialogic terms: The chapter can be useful for the improvement of system of education at micro, meso, and macro levels and can contribute to their way of contending with the diversity of classroom and research issues.
Larsen-Freeman (2018a)	The study reviews and surveys Complexity Theory and five of its theoretical tenets including emergence, interconnected levels and timescales, nonlinearity, dynamism, and context dependence, all positively contributing to language planning and policy and second language development.	The study has implications for agents of change, such as program managers, and language educators and planners: They need to realize that there exist resonances between the policy of language planning and second language development, and that this should lead to building a bridge between them that affirms that we live in a complex world where interventions need to be situated, contingent and adaptable, and ones that may lead to unanticipated outcomes
Larsen-Freeman (2018b)	The current chapter investigates the notion of task "repetition" in Complex Dynamic Systems Theory (CDST) and examines iteration instead of repetition and transformation instead of transfer, as learners construct their own learning paths.	Teachers and teacher trainers need to recognize learners' agency and uniqueness and respect their individual differences and also value the role and effectiveness of iteration and transformation for language teaching.
Larsen-Freeman (2018d)	The study examines English as a lingua franca and its features in the context of CDST, considered as a meta-theory and reconsiders substantial concepts, such as the nature of language and the ideology of native-speaker privilege.	The study helps demystify the misunderstanding, i.e., the view that language is static, and atomistic, one inherited from linguistics. Instead, educators and scholars need to perceive that language is dynamic and has meaning in social interaction.

Nguyen & Larsen-Freeman (2018)	The study examines tasks within the framework of task-based language teaching (TBLT) and answers the question of whether using tasks for instructing formulaic sequences makes sense. One key result is that different individuals develop their receptive and productive knowledge in different ways.	The study has implications for teachers and scholars and indicates the effectiveness of TBLT for grammatical structures, individual words, and formulaic sequences and for directing learners' attentional resources to language forms and for helping them acquire multi-word lexical chunks.
Hiver & Larsen-Freeman (2020)	Considering CDST and Gardner's socio-educational model for the rational nature of motivation, the study examines issues such as temporal-spatial context, relational units in context, reflection and resonance, and a systems view of individual differences, such as motivation.	The study has implications for researchers and teachers, as it can help them recognize 'individual differences and realize that the world today requires a more holistic relational systems from which second language learning can emerge.
Larsen-Freeman (2020b, 2020c, 2020d, 2022a)	Complexity theory, SLA and CDST, major tenets of theory, transdisciplinary issues, the role of individual difference factors in theory, and emergent view of language learners (Larsen-Freeman, 2022a) are examined. Also, general complexity and restricted complexity (Larsen-Freeman, 2020b) and the relational systems in SLA (Larsen-Freeman, 2020c) are also informative.	Due to their clear explanation, the studies can be effective for both experienced and inexperienced readers familiar with complexity theory, and with its main features such as interconnectivity and dynamism and the understanding that complexity theory brings to individual differences.
Larsen-Freeman, (2021); Larsen-Freeman & Todeva (2021)	The chapter reviews complexity theory and refers to it as CDST in the field of second language development and elaborates on its features. The theory originated in the physical sciences, but has affected many other disciplines, such as the social sciences and the humanities. Also, CDST and the use of a socio-cognitive theory for plurilingualism is informative in Larsen-Freeman and Todeva (2021).	The chapter has implications for teachers, experienced and inexperienced scholars, as it contains 10 influential prompts regarding varying issues in SLA with exclusive reference to CDST. It provides references, explains them and provides further implications for them, too. Importantly, it also enthusiastically supports plurilingualism.
Larsen-Freeman (2023a)	The chapter elaborates on complexity perspectives on language development and examines the main tenets of complexity theory, learning from a complexity theory perspective, language development from DST perspective, and its implications.	The chapter is of potential benefit, as it can help researchers and readers discern the characteristics of dynamic systems theory and its application in the classroom and its use to educational linguistics.
Larsen-Freeman (2023b)	The study provides a historical account of the establishment of the first English Language Institute (ELI) in the United States and reviews the socio-political issues, the theoretical underpinnings of the Michigan Method, needs-based knowledge construction and its use as well as issues during more recent times, i.e., a metamorphosis.	Educators, local and international teachers at English language institutes are encouraged to realize the history of their profession, as this can broaden their horizon and activate their schemata concerning the significance, the ups and downs and the way their field is shaped.
Larsen-Freeman (2023c)	The study conceptualizes language education and examines it and considers language education as a complex dynamic system. To this end, questions related to language education, such as the nature of language and culture, varying views of learning and learners, and teaching and teachers are examined.	The study has implications for program managers, teachers, teacher trainers and scholars. It helps them consider education as an emergent process and as a variable subject to growth and affected by multiple contextual and instructional variables.

Table 6*Analysis of the Books*

The Books	Annotations	Relevance to language pedagogy or research
Larsen-Freeman, (1980)	The book contains 10 seminal chapters concerning varying fundamental issues in SLA ranging from discourse and contextual analysis, to language play in SLA, etc., all providing a solid ground for understanding research approaches, replication and techniques and procedures.	The book has potential implications for researchers and teachers; researchers can use the articles in the book for doing research on varying issues and teachers can read the chapters and build their theoretical knowledge base.
Larsen-Freeman (1986d)	An ever-cited, ever-introduced and frequently used book at varying educational levels, the book <i>Techniques and Principles in Language Teaching</i> has dramatically influenced, not thousands, rather millions of educators, teachers, and teacher trainers in the globe. It was first published in 1986, then it was edited and republished (Larsen-Freeman, 2000; Larsen-Freeman & Anderson, 2011)	As all potential readers, educators, researchers, professional and stakeholders are familiar with the book and its structure, it is of much higher potential in providing competence understanding of teaching methods and approaches for them; it is recommended to be used at university level and for teacher training courses.
Larsen-Freeman & Long (1991)	The book is highly informative to educators, novice or inexperienced researchers, teachers and teacher trainers who have no prior knowledge of SLA or its research methodology. It can insightfully initiate them into SLA research.	The book, containing a glossary of terms specific to SLA research, can be used for individual study or as a textbook in a graduate course, or teacher training courses, contributing to theoretical and research-based knowledge base.
Celce-Murcia & Larsen-Freeman (1983)	The book surveys grammatical explanations and application with reference to key elements including form, meaning and use. It can help teachers with the linguistic system and details of English grammar and the way the structures are used at the discourse level in their appropriate context.	In addition to providing theoretical knowledge base and grammatical competence, the book provides some practical techniques and tips for teachers and helps them with more effective presentation of grammatical structure
Larsen-Freeman (2000b)	A more comprehensive book containing and elaborating on form, meaning and use, it provides communicative activities, presents clear grammar explanations, and exposes the readers with extensive practice tasks and exercises.	The book provides students with needed language skills and helps them communicate appropriately, accurately, and meaningfully.
Larsen-Freeman (2003)	The book shifts from a focus on grammar as rules to grammar as a dynamic process, what Diane Larsen-Freeman calls grammaring. In every single chapter of the book, she uses three tools including frameworks, investigations, and teachers' voices. The author attempts to connect theory to language pedagogy.	Authored and explained in a reader-friendly format, the book illustrates the stories of real teaching situations and brings the author's real experiences with grammar teaching to the classroom context. Therefore, it can be effective for ESL/EFL learners and teachers.
Larsen-Freeman & Cameron (2008b)	This pioneering book presents fundamental concepts and defines terms and discusses issues concerning complexity theory. It also examines and displays the usefulness and applicability of the main tenets and elements	As a novel perspective in applied linguistics and SLA, the use of complexity theory is now applicable to SLA and applied linguistics; from this theory, every teacher, professional and scholar can infer self-perceived pedagogical implications and link the theory to classroom contexts.

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	in complexity theory, relating the theory to applied linguistics and L1/L2 learning and teaching and discourse analysis.	
Ellis & Larsen-Freeman (2009b)	Ellis and Larsen-Freeman (2009b) elaborate on language as a complex adaptive system and examine its commonalities with other areas of language research.	This book can promote an understanding of how the findings of complexity theory relate to a variety of subfields, such as L1 and L2 language, structure, evolution and usage.
Larsen-Freeman, Celce-Murcia et al. (2015)	The book describes not only how each grammatical construction is formed, but also its meaning and use. The book initiates teachers and future teachers into English language teaching constructions. With its unique pedagogical focus, it can be used as a coursebook and as a grammar reference guide for all teachers of English.	The book is recommended to be used as a coursebook for language teachers and even for teacher training courses because it is featured by making meaning in textually and socially appropriate ways and can easily initiate learners, teacher candidates and teachers into grammar issues.
Larsen-Freeman (2018e)	Diane Larsen-Freeman has compiled 18 of her own research works in this book. She has written a commentary following each one. It is informative enough to provide a comprehensive view of the general issues and specific concerns associated with complexity theory and SLA theories, assumptions, principles and models.	There exist varying implications for professionals, educators and researchers in the field of applied linguistics and SLA. The book can create a very solid basis for theoretical knowledge base, so it is of potential benefit to be included in the course syllabus or to be used for self-study.

Diane Larsen-Freeman's Reflection

I begin with a sincere expression of gratitude to the editors, Zhisheng (Edward) Wen and Hassan Mohebbi, who have shaped this special issue, and to the authors who have contributed to it. I am overwhelmed by their generosity and scholarly contributions and for the opportunity that they have given me to indulgently and publically reflect on my long career. Ali Panahi's and Hassan Mohebbi's systematic review of my publications took a monumental effort. Just glancing at their compilation of the technical terminology I have used over the years afforded me a walk down memory lane (although admittedly not many others would become sentimental about technical terms!). So, thank you very much, one and all.

The review has prompted me to look back on my long career path, and I can say—paraphrasing the great Spanish poet Antonio Machado—that I made the road by walking. Plainly put, I had no grand ambition or plan. I simply allowed my curiosity and a perceived social need or a lacuna in my understanding to guide my next step. I can't resist pointing out that this is precisely how a complex system operates. Its dynamics can be conceived of as evolutionary unfolding, rather than as following an a priori or innate grand design. A complex system innovates and adapts, sometimes successfully so that the innovations become integrated, other times not so. As the system evolves, an attractor emerges, a path that the system characteristically takes, but one from which it can always depart.

I might then ask, what has been the attractor of my career? To the outside observer, it might seem an incoherent meandering one: from my early EFL teaching in Malaysia, to studying morpheme acquisition, to searching for an index of development, to grammaring, to educating language students and teachers, to discovering and reveling in complexity theory. I can certainly understand such a perception. However, to my mind, there is a thread that connects them all; it is the quest to understand language learning and, consequently, to apply this learning to language teaching. Furthermore, from each of these steps along the road, I have learned a lesson. It is these lessons that I immodestly choose to share here, using them, along with my books, to punctuate this reflection.

The first step. In 1967, inspired by US President John F. Kennedy's call to service and by my urge to "see the world," I joined the Peace Corps. I became an EFL teacher in Sabah, North Borneo, Malaysia, after three months of training to teach English—a training that included the study of Malay and cultural orientation. I was expected to implement the prevailing teaching approach at the time: Audiolingualism. During my two years in Malaysia, my students and I developed close ties (just prior to the pandemic, I was able to attend our 50-year in-person reunion there), and they learned some English; however, I always had the nagging feeling that they had learned despite my teaching, not because of it.

The first lesson that I learned, then, was that teaching does not cause learning. This lesson certainly does not mean that there is no role for teachers. On the contrary, it means that the major (though not exclusive) work of teaching is to provide learning opportunities for students. Thanks to the influence of Leo van Lier (and the biologist J.J. Gibson), I came to call the learning opportunities "affordances." In order to create affordances for learning, it was imperative that I begin with finding out what my students didn't know, and, importantly, what they did. While this may seem banal, too often I had planned my class based on the next chapter in the textbook.

To see if I could learn more about how learning takes place so that I could work in partnership with the learning of my students, I decided to matriculate in graduate school at the University of Michigan. It won't be a surprise that I encountered more questions than answers (probably the sign of a good graduate education). One experience was to prove especially significant, though, and that was meeting Pit Corder and hearing him hypothesize that there existed a built-in syllabus. It was inspiring to think that if I could teach according to my students' "natural" syllabus, I could teach in harmony with their proclivity, rather than contrary to it.

Thus, I joined with other researchers, those who were inspired by Roger Brown's L1 research, to conduct L2 morpheme acquisition order studies—though I tried to be careful to call what I found a "morpheme accuracy order" because the order was established through a cross-sectional study, not a longitudinal one. Nonetheless, researchers did report a somewhat consistent order. Through my subsequent research, I determined that the order was due more to the frequency with which the learners encountered the morphemes in the ambient language than due to any internal syllabus. Importantly, then, my second lesson was recognizing the importance of frequency in language learning.

This was a puzzling finding at the time because it could be said that a frequency explanation supported a behaviorist account of language acquisition, one that was being challenged by the "cognitive revolution" of the day. Thinking about it further, however, I realized that the same finding could support a cognitive interpretation, the latter because the more often a morpheme was encountered, the more rapidly the rules governing its behavior might be acquired. Not being able to adduce evidence at the time to definitively support one account over the other, I learned another important lesson: Frequency was simply a finding in need of an explanation. What I needed was an unambiguous theory to interpret this finding.

In the meantime, I pursued a new research agenda: constructing a second language index of development. Kenji Hakuta's study had convinced me that what was needed was some sort of L2 developmental index (not the MLU of L1 acquisition nor the scores on a proficiency test) whereby learners could be classified, without relying on the general, context-specific, and relative terms of beginning, intermediate, and advanced. I perceived the need for such an index because at the time, there was internecine feuding taking place among certain L2 researchers concerning how much learner performance could be attributed to the learners' L1. It seemed to me that the squabbling could, at least partially, be attributed to the fact that different learner populations were being studied. In order to construct a developmental index, I drew upon Kellogg Hunt's work in first language acquisition and adopted his construct of the T-unit. The story is too lengthy for me to relay now, but suffice it to say that I found that the length of error-free T-unit worked reasonably well to distinguish writing ability, but it did not do so for all learners. In other words, there were a significant number of outliers, those learners whose writing did not conform to the pattern. Thus, again, I learned a valuable lesson: Individual learner differences can undermine attempts to generalize.

This developmental index research was conducted at UCLA, where I had received an appointment, following my completion of a Ph.D. in Linguistics at the University of Michigan. I met Marianne Celce-Murcia at UCLA in 1975. She and I were assigned to teach the pedagogical grammar course to TESOL master's students. We found that there was no textbook for such a course, so we resolved to write one—beginning by preparing a set of mimeographed

handouts for our students, sharing them with colleagues when they asked, receiving feedback from both groups, and continually revising the materials—thus, the genesis of *The Grammar Book*. Much later, in 1983, when we were both teaching in a TESOL Summer Institute at the University of Toronto, during which my second son was born, also “born” was the three-dimensional Form-Meaning-Use pie chart. It became clear that grammar was more than form—knowing how to use a grammar construction also required using it as a resource to make meaning and employing it appropriately in a particular spatio-temporal/textual/social context, given one’s purpose and identity. *The Grammar Book* also makes it clear that grammar rules are not as arbitrary as some think, and therefore, the advice is to teach reasons, not rules, or, at least, not rules alone.

Also at UCLA, a student, whose name was Michael Long, enrolled in my SLA course. Mike was later to traverse his own impressive career path, but even in those early days, it was easy to recognize his brilliance. Thus, when Chris Candlin invited me to write a book on SLA, realizing that I did not have the time to do one justice, I invited Mike to be a co-author of *An Introduction to Second Language Acquisition Research*. The SLA book was a joint venture and no doubt improved with Mike’s participation (though I learned that having a co-author does not shorten the length of writing time).

Earlier, after the birth of our first son in 1978, we chose to move from California to Vermont, a state that we had come to know, one that was very attractive for its environmental consciousness, its bucolic beauty (e.g., it prohibits billboards), and its affordability. Besides, I had been offered a position at the well-known graduate School for International Training. So, move to Vermont we did. I admit that choosing to leave UCLA was not an easy decision, and we had made many friends in the area. Nevertheless, besides Vermont’s fulfilling its promise of a beautiful and affordable place in which to raise our family, my reward was that I got to work alongside colleagues who were totally invested in and committed to language teaching. And, I learned so much from them. Collectively, we affirmed not only that good teaching was about developing knowledge and skills, but it was also about cultivating positive attitudes and raising awareness. These qualities were addressed through SIT’s experiential education approach, where students were not only engaged in experiences, but were also taught how to learn from them. The upshot was another lesson for me: Teaching is educating awareness, and teaching teachers experientially helps to raise their awareness. This lesson was central to my experience of co-teaching the approaches course in the MAT program at SIT—an experience that eventually led me to write *Techniques and Principles in Language Teaching*.

It was also while I was at SIT that I was invited to edit the journal *Language Learning*. Editing meant that I was steeped in SLA research. I must say, though, that by this time, I was becoming increasingly concerned by the state of the research. My concern was that researchers were identifying more and more factors said to affect SLA, but any overall understanding was elusive. I did not question the relevance of the factors, nor the research methods that identified them, but I yearned for some holistic framework with which I could make sense of them all. On a related note, I worried that we might never get to the end of proliferating factors—a problem I later learned could be due to unbridled reductionism.

When the invitation came for me to return to the University of Michigan as a professor and as Director of its English Language Institute, I again faced a difficult decision. By then, our children had grown, and I had an affection for Ann Arbor, not only for the education I received

there, but also for personal reasons. (It is where my husband is from and where we had gotten married when we were students.) What made the decision a bit easier was knowing there was a professor at the university by the name of John Holland, a founder of a complex systems approach and a trustee at the famed Santa Fe Institute in New Mexico, which is dedicated to the study of complex adaptive systems.

Backing up a little, I should say that I first encountered complex systems when reading science writer James Gleick's book, *Chaos: Making a New Science*, which a stranger handed me at the Boston Museum of Science when I was there visiting with my family. I didn't open the book at first—it joined the stack with others on my bedside table—but when I finally opened it, I read it non-stop. Gleick had written a book about natural systems, but it was not difficult for me to apply what he wrote to language—and doing so significantly challenged the way that I had understood language previously. It was clear to me that language was a complex system, which changed, as Gleick put it, by “playing the game,” in the case of language by using it meaningfully. Gleick wrote of process rather than state; of becoming rather than being.

I later gave a paper entitled *On the Parallels between Chaos Theory and Second Language Acquisition* at the Second Language Research forum at McGill University in 1994 that was to be published in 1997 in the journal *Applied Linguistics*. Chaos/complexity theory made so much sense to me. Who could deny that language was a complex (this does not mean complicated), dynamic, nonlinear system? Insights from complexity theory contributed many other lessons, and afforded me the more holistic perspective that I was seeking, which, in turn, led me to call the learning process second language development instead of SLA. As it turns out, John Holland, Nick Ellis (with whom I later edited a special issue of the journal *Applied Linguistics* on the related theme of emergentism), and I met regularly to discuss complexity theory. We even made an eventful trip to the Santa Fe Institute, organized a conference at the University of Michigan as a result, and Nick and I co-edited the book *Language as a Complex Adaptive System*. In the meantime, I had met British scholar Lynne Cameron at a conference, and we decided to pursue our common interest in complexity theory. At a Georgetown University Round Table one March, there was a huge snowstorm that paralyzed Washington, DC and left our hotel without electrical power. Unable to get to the university due to the towering snow drifts and without electricity, Lynne and I sat in the café at a hotel, using what light there was coming through the window, and outlining on paper napkins the book that would become *Complex Systems and Applied Linguistics*, which was later to win the Modern Language Association's Kenneth Mildener award.

Exploring complexity theory further led me to collaborate with colleagues from the Netherlands (Kees de Bot, Wander Lowie, and Marjolijn Verspoor) on a theory of second language development, which we called *Complex Dynamics Systems Theory (CDST)*. I also used the opportunity I had been granted through my appointment as a Fulbright Distinguished Chair at the University of Innsbruck, Austria, to meet with Philip Herdina and Uli Jessner.

My frustration with the “inert knowledge problem” and my growing knowledge of complex systems led me to recommend teaching grammar more dynamically —“grammaring,” I called it, and I titled my next book: *Teaching Language: From Grammar to Grammaring*. I also created the challenge principle to give teachers guidance in how to adapt their lessons to address the dimension that challenged their particular students, be it Form, Meaning, or Use. I asserted that the three dimensions are learned differently and should therefore be taught

accordingly. This led me to invite former students of mine and Marianne's, who joined with others, to create the student textbook series, *Grammar Dimensions*.

I should note that complexity theory has intrigued me for many years. Its relational view of the interconnectedness of all constituents in an eco-system and its drawing attention to dynamic change in context seemed so obvious (as it has been to indigenous peoples for millennia). To me, these tenets of complexity theory also described so well the interconnectedness and dynamicity of the many components influencing language learning in human systems. This view also overcame the limitations of the traditional approach to SLA which attempted to understand the behavior of the whole by examining its parts piecemeal. Applying it to SLD, I could make the case for the agency of language learners, including acknowledging that learners soft-assemble their language resources in order to respond in an intentional way to the communicative pressures at hand. It also accommodated my finding of the effect of frequency.

In short, it was the theory I had been looking for. Yet, I came to find out that some scholars were skeptical that a theory from the physical sciences could have much to say about human learning. Furthermore, truthfully, the extensive reading I did was challenging because its scientific discourse was unfamiliar. Nevertheless, I have increasingly witnessed its being taken up throughout the social sciences, education, and even humanities. Indeed, another lesson was seeing that complexity theory is a transdisciplinary theory for our time—an ecological systems theory that does not prompt its adherents to predict and control, but rather, as applied to SLD, to retrodictively trace and account for frequently-occurring meaningful patterns in individual developmental trajectories.

In keeping with my identity as an applied linguist, it has also led me to propose certain pedagogical practices—from creating and taking advantage of spontaneous learning affordances, to designing organic syllabi, with iteration rather than repetition, grammaring, learner engagement, and co-adaptation. I also have called for acknowledging and supporting learners' agency by providing enabling conditions and for accommodating learners' individual differences through personalized learning and project-based learning. In addition, I have suggested that we teach adaptation, teaching students to use their language resources to navigate unpredictable communicative interactions and that we view transfer as transformation.

Upon retiring from the University of Michigan, the most recent step on my professional path took me to the University of Pennsylvania, where I was invited to be a Visiting Senior Fellow. I taught for 8 years (one semester each year) in the Educational Linguistics Division of Penn's Graduate School of Education. The historical and contemporary orientation of the faculty helped to deepen my understanding of the social dimension of language use, and complemented my cognitivist beginnings. My Penn colleagues indulged me in allowing me to officially change the name of one of the courses they asked me to teach—from SLA to SLD—and they also sharpened my thinking about marginalized populations and social justice issues, a theme that has rightfully moved to the forefront in our field, and one that complexity theory can accommodate. For instance, there is compelling evidence that a complex system that is diverse is stronger than a homogeneous one—and this goes for non-human and human systems; hence, complexity theory also renders theoretical support for plurilingualism and the creativity it engenders (another lesson). My scholarly research while at Penn continued to be motivated

by my quest to investigate language as a fractal—a pattern formed by an iterating complex dynamic system. Most of us find fractals mesmerizing—and, their implications for learning and teaching are profound, I believe.

I have been exceedingly privileged to deliver plenary addresses in-person and more recently online. These learning-filled experience have given me opportunities to interact with international colleagues, from whom I have learned a great deal. I am in awe of some of my colleagues who teach and learn without any of the advantages and resources I have had. Prior to the pandemic, I was able to travel widely to participate in conferences and to teach in special institutes and to learn from these individuals, some of whom I now consider friends.


Then, too, I also owe a debt of gratitude to my students over the years. From my EFL Malaysian students to my ESL, EAP, adult education, Bahasa Indonesia, MATESOL, Applied Linguistics, Educational Linguistics students, and others too numerous to mention, I have learned so much. At the same time a lesson that I have tried to model for my students is that it is important to understand an idea at the time it makes its debut in a field. It is easy to criticize by looking back.


I am also delighted that some brilliant newer scholars have also seen the relevance of CDST to applied linguistics and will contribute beyond what I am able to and persevere when I am no longer able to. Phil Hiver and Ali Al-Hoorie were among the first, but there are others, some of whom have contributed to this special issue.


The style of an autobiography, at least the one that I have adopted, encouraged me to highlight my own contributions. However, returning to the metaphor, with which I began this essay, I did not walk the road alone. I gained from the companionship of fellow travelers along the way, not the least of which has been my incredibly supportive family. Moreover, I think my path was neither as linear nor as sequential as the road metaphor implies. Then, too, I have also conveniently omitted “dead ends”—projects that I have had a major role in, which have not been brought to fruition. One simply takes what seems to be the next right step on the path, and they do not all lead to successful outcomes.

Some years ago, I participated in a closing plenary session at a TESOL Conference in Chicago, which took the form of a debate: Was teaching an art or was it a science? I was asked to defend the proposition that teaching was a science. To do so, I took the position that good teachers and good scientists are well-served when they maintain attitudes of inquiry. The activities that I have engaged with and the lessons I have learned have been the result of my cultivating such an attitude. Hmmm, I wonder what is around the next bend in the road.

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Appendix 1

Extraction of Researched Areas in the Order of Dominance and Topic Types

- Al-Hoorie, A. H., Hiver, P., Larsen-Freeman, D., & W. Lowie, W. (2023). complexity theory
- Beckner, et al. (2009). Complexity theory
- Blommaert, J., García, O., & Kress, G., & Larsen-Freeman, D. (2018). Complexity theory
- Boldt, R.F., Larsen-Freeman, D., Reed, M.S. & Courtney, R.G. (1992). TOEFL
- Cameron, L., & Larsen-Freeman, D. (2007). Complexity theory and applied linguistics.
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- Cohen, A. Larsen-Freeman, D., & Tarone, E. (1991). SLA
- De Bot, K. & Larsen-Freeman, D. (2011). Complexity theory
- Douglas Fir Group. (2016). Complexity theory and SLA
- Ellis, N. C., & Larsen-Freeman, D. (2006). Complexity theory and applied linguistics.
- Ellis, N. C., & Larsen-Freeman, D. (2009a). Syntax
- Ellis, N. C. & Larsen-Freeman, D. (2009b). *Complexity theory*
- Evans, R.D. & Larsen-Freeman, D. (2020). Complexity theory and syntax
- Hiver, P., A. H. Al-Hoorie, A. H., & Larsen-Freeman, D. (2021). Complexity theory
- Kaplan, R.B., & Grabe, W. (2000). Applied linguistics
- Larsen-Freeman, D. (1974). Grammar
- Larsen-Freeman, D. (1975a – March 5-9). morphemes studies
- Larsen-Freeman, D. (1975b). morphemes studies
- Larsen-Freeman, D. (1975c). *morphemes studies*
- Larsen-Freeman, D. (1976). morpheme studies
- Larsen-Freeman, D. (1977). discourse analysis and SLA
- Larsen-Freeman, D. (1978a). ESL index of development.
- Larsen-Freeman, D. (1978b). ESL index of development.
- Larsen-Freeman, D. (1978c). morpheme studies
- Larsen-Freeman, D. (1978d). morpheme studies
- Laarsen-Freeman, D. (1980). *Discourse Analysis and SLA*
- Larsen-Freeman, D. (1982). SLA
- Larsen-Freeman, D. (1983a). SLA
- Larsen-Freeman, D. (1983b). SLA
- Larsen-Freeman, D. (1983c). SLA
- Larsen-Freeman, D. (1983d). Teacher educations/training
- Larsen-Freeman, D. (1985a). SLA
- Larsen-Freeman, D. (1985b). SLA
- Larsen-Freeman, D. (1985c). SLA
- Larsen-Freeman, D. (1986a). SLA
- Larsen-Freeman, D. (1987a). Teaching methodology
- Larsen-Freeman, D. (1987b). Teaching methodology
- Larsen-Freeman, D. (1987c). teaching methodology.
- Larsen-Freeman, D. (1989b). Grammar.
- Larsen-Freeman, D. (1990). Teaching methodology
- Larsen-Freeman, D. (1991a). SLA
- Larsen-Freeman, D. (1991b). Grammar .
- Larsen-Freeman, D. (1991c). SLA
- Larsen-Freeman, D. (1991d). teaching methodologies
- Larsen-Freeman, D. (1992). teacher education/training.
- Larsen-Freeman, D. (1993a). translation
- Larsen-Freeman, D. (1993b). grammar
- Larsen-Freeman, D. (1995a). grammar

- Larsen-Freeman, D. (1995b). teacher education/training and linguistics
Larsen-Freeman, D. (1996). SLA
Larsen-Freeman, D. (1997a). Complexity theory and SLA
Larsen-Freeman, D. (1997b). Grammar
Larsen-Freeman, D. (1998a). SLA
Larsen-Freeman, D. (1998b). case studies.
Larsen-Freeman, D. (1998c). Life-long learning
Larsen-Freeman, D. (2000a). SLA and applied linguistics.
Larsen-Freeman, D. (2001a). Grammar.
Larsen-Freeman, D. (2001b). grammar.
Larsen-Freeman, D. (2002a). Making sense of frequency
Larsen-Freeman, D. (2002b). Complexity theory
Larsen-Freeman, D. (2002c). grammar
Larsen-Freeman, D. (2003). *grammar*
Larsen-Freeman, D. (2004a). SLA
Larsen-Freeman, D. (2004b). morpheme studies
Larsen-Freeman, D. (2004c). contextual analysis and linguistic corpora.
Larsen-Freeman, D. (2004d). Conversation analysis and SLA
Larsen-Freeman, D. (2005). SLA
Larsen-Freeman, D. (2006a). complexity, fluency, and accuracy
Larsen-Freeman, D. (2006b). grammar
Larsen-Freeman, D. (2007a).SLA
Larsen-Freeman, D. (2007b). SLA
Larsen-Freeman, D. (2007c). complexity theory and SLA
Larsen-Freeman, D. (2008). SLA
Larsen-Freeman, D. (2009a). complexity, accuracy, and fluency
Larsen-Freeman, D (2009b). grammar
Larsen-Freeman, D. (2010a). morpheme studies
Larsen-Freeman, D. (2010b). complexity theory
Larsen-Freeman, D. (2010c). complexity theory
Larsen-Freeman, D. (2011a). Complexity theory and SLA/SLD
Larsen-Freeman, D. (2011b). language education
Larsen-Freeman, D. (2011c). grammar
Larsen-Freeman, D. (2012a). language learner
Larsen-Freeman, D. (2012b). repetition
Larsen-Freeman, D. (2012c). From unity to diversity... to diversity within unity.
Larsen-Freeman, D. (2012d). Complexity theory and applied linguistics
Larsen-Freeman (2012e). Complexity theory.
Larsen-Freeman, D. (2013a). Transfer and SLA
Larsen-Freeman, D. (2013b). Complexity theory
Larsen-Freeman, D. (2013c). Complexity theory
Larsen-Freeman, D. (2013d). Complexity theory
Larsen-Freeman, D. (2014a). SLA and SLD
Larsen-Freeman, D. (2014c). complexity theory
Larsen-Freeman, D. (2014d). interlanguage and SLA
Larsen-Freeman, D. (2014e). grammar
Larsen-Freeman, D. (2015a). Grammar
Larsen-Freeman, D. (2015b). Complexity theory.
Larsen-Freeman, D. (2015c). Caleb Gattegno.
Larsen-Freeman, D. (2015d). On the need for a new understanding of language and its development.
Larsen-Freeman, D. (2016a). complexity theory
Larsen-Freeman, D. (2016b). ELF
Larsen-Freeman, D. (2016c). ELF
Larsen-Freeman, D. (2017a). SLA
Larsen-Freeman, D. (2017b). Complexity theory and Life-long learning
Larsen-Freeman, D. (2017c). Complexity theory and life-long learning
Larsen-Freeman, D. (2018a). complexity theory and SLD
Larsen-Freeman, D. (2018b). repetition and iteration
Larsen-Freeman, D. (2018c). Complexity theory and SLA
Larsen-Freeman, D. (2018d). ELF.
Larsen-Freeman, D. (2018e). SLD

- Larsen-Freeman, D. (2019a). complexity theory
Larsen-Freeman (2019b). learner agency
Larsen-Freeman, D. (2019c). SLD
Larsen-Freeman, D. (2019d). grammar
Larsen-Freeman, D. (2020a). Complexity theory and SLD
Larsen-Freeman, D. (2020b). complexity theory
Larsen-Freeman, D. (2020c). Relational systems and SLD
Larsen-Freeman, D. (2020d). Complexity theory and SLA/SLD
Larsen-Freeman, D. (2021). complexity theory
Larsen-Freeman, D. (2023d). complexity theory
Larsen-Freeman, D. (2022a). Complexity Theory and SLA.
Larsen-Freeman, D. (2022b). complexity theory and SLA
Larsen-Freeman, D. (2023a). complexity theory
Larsen-Freeman, D. (2023c). language education
Larsen-Freeman, D. & Anderson, M. (2011). Teaching methodology
Larsen-Freeman, D., & Cameron, L. (2008a). complexity theory
Larsen-Freeman, D., & Cameron, L. (2008b). Complex Systems and Applied Linguistics.
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Larsen-Freeman, D., & Strom, V (1977). ESL index of development
Larsen-Freeman, D., & Todeva, E. (2021). Complexity theory and plurilingualism
Larsen-Freeman, D., & Tedick, D. J. (2016). SLA
Nguyen, H. & Larsen-Freeman, D. (2018). SLA
Perkins, K., & Larsen-Freeman, D. (1975). Morpheme studies