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RESEARCH TIMELINE

Second language writing from a complex dynamic systems perspective

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Introduction

This work provides a chronological and thematic account of empirical studies and position papers on second language (L2) writing scholarship from a complex dynamic systems theory (CDST) perspective. As a theoretical framework, CDST was formally introduced into applied linguistics research by Diane Larsen-Freeman in 1994 (Larsen-Freeman, 1994). However, more than a decade passed before CDST-L2 writing studies emerged in the literature, with Larsen-Freeman (2006)* frequently cited as the first related publication. Initially, scholarship focused primarily on the quality of linguistic output (e.g., measures of complexity, accuracy, and fluency, or CAF) in North American and European contexts. Since these early foci, studies have expanded to cover a range of constructs and contexts that employ increasingly sophisticated and diverse research methods (for a recent collection of studies, see Fogal & Verspoor, 2020). In this time, a CDST approach to L2 writing research has matured alongside a general CDST view of language change that has contributed, through empirical studies, to understanding the nonlinear, adaptive, context dependent, and complex and dynamic nature of L2 development (see Hiver et al., 2021, for an overview).

Alongside emergentist approaches to language change such as usage-based linguistics and connectionism, a complexity theory framework emphasizes the interconnected nature of the human experience and, in the present context, the dialogue informing the science that endeavors to study it. Accordingly, generating a thematic timeline of scholarly activity associated with CDST and L2 writing is no straightforward task. A CDST perspective requires, for instance, that one acknowledge straightaway that any thematic strand—including one linked to a metatheory like CDST—is necessarily comprised of an inter-and intra-disciplinary foundation that predates and informs the integration of CDST and L2 writing scholarship. Accordingly, like other threads of applied linguistics research, much of what is listed below is closely connected to previous work. For example, such precursors include a vast body of scholarship on corpus linguistics (see Flowerdew, 2010) and L2 writing (see Manchón & Matsuda, 2016) that, through works such as Wolf-Quintero et al. (1998) and Norris and Ortega (2009*), have inspired a notable collection of CDST studies exploring the CAF triad. In addition, researchers in this domain have also drawn from CDST scholarship outside of applied linguistics. For example, Thelen and Smith (1994), Davis and Sumara (2006), Morin (2008), and Byrne and Callaghan (2014) have all had a direct impact on how L2 writing scholars approach writing phenomena through a CDST lens (influencing, for example, epistemology and methods). Moreover, expansive discussions about CDST and its (a) place and utility as a comprehensive theory of language development (de Bot et al., 2007*; Herdina & Jessner, 2002; Larsen-Freeman, 2017; Larsen-Freeman & Cameron, 2008*), (b) related methods (Hiver & Al-Hoorie, 2016, 2020; MacIntyre et al., 2017; Verspoor et al., 2011*), and (c) pedagogical value (Larsen-Freeman, 2012; Levine, 2020; Mercer,

*Denotes that the full reference is in the timeline itself.

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2016; Verspoor, 2017) have all impacted relevant L2 writing research. Accordingly, as influence can be drawn from an expansive network that emphasizes the interconnected nature of a CDST framework, a comprehensive account of related relationships is beyond the scope of the present context.

Moreover, even within the sub-discipline it is impractical to trace the extensive body of scholarship on CAF; for example, considering the need to account for nascent interests in other features writing scholars have recently pursued (see, for instance, attention to agency in Byrnes, 2020a*, Nitta, 2020*, and Nitta & Baba, 2018*; a focus on individual differences in Huang et al., 2021*, Lowie & Verspoor, 2019*, Nitta, 2020*, and Nitta & Baba, 2018*; or attention to written corrective feedback in Fogal et al., 2020* and Lee et al., 2021*). As such, given the vast number of publications under the wider CDST umbrella, only those that were explicitly CDST- and L2 writing-focused in their orientation are included below, with few notable exceptions (see Norris & Manchón, 2012* and Norris & Ortega, 2009*). Further, complementary approaches (e.g., sociocultural or ecological frameworks) are not presented, nor are works published in languages other than English. Rather, the timeline draws from widespread L2 contexts (e.g., Canada, China, Indonesia, Italy, Japan, Thailand, the Netherlands, South Korea, and the United States), across a range of second and foreign languages (e.g., Chinese, Dutch, English, Finnish, and German) and is comprised primarily of journal articles and book chapters, representing both seminal works and studies by emerging scholars. Collectively, the selections below (a) highlight the scope of scholarship despite the area's recent (and CAF-focused) beginnings, (b) emphasize the momentum and interest this approach presently enjoys, and (c) underscore the utility of the framework for researching L2 writing.

These areas of attention have also been underpinned by two distinct motivational profiles driving research: the first investigates L2 writing data to study writing development (e.g., Baba & Nitta, 2014*; Fogal, 2019*; Macqueen, 2012*), and a second explores L2 writing performance to better understand general language development (e.g., de Bot et al., 2007*; Huang, et al., 2020*; Larsen-Freeman, 2006*). By way of a brief historical overview, the literature within these threads reveal early (and ongoing) attention to variability as a prominent feature of analysis, with initial and continued attention concentrated on patterns of interaction and variability at inter- and intra-individual and group levels across time as characteristics of dynamic systems and markers of development (see early works by Verspoor, Lowie and colleagues). This early attention to variability was developed largely through research on the CAF triad (see studies by Verspoor and colleagues as well as a collection of works by Housen and Bulté) and primarily in the European context. While said foci remain an important feature of CDST-L2 writing studies (e.g., Huang et al., 2021*), later publications expanded beyond these areas in something of a shift away from learner output to research that takes a broader, less granular approach to systems thinking than initial trends indicated (i.e., moving beyond syntax-level interactions that chart how, for example, accuracy and fluency co-develop) to include, for instance, context as a meaningful feature of CDST research (e.g., Hepford [2020] on social ecosystems; Nitta [2020*] on study abroad; Byrnes [2020a*, 2020b] and Fogal [2020a*, 2020b] on *CURRICULUM* as a construct of investigation).

These foci were complemented by new or renewed attention to research methods germane to investigating complex systems and L2 writing (i.e., methods that are systems oriented and process—rather than product—focused: e.g., biographical retrodiction [Nitta, 2020*], system mapping [Fogal, 2020b, 2021*], a multilevel synchrony method [Rosmawati, 2020], renewed attention to phase shift analyses [Hepford, 2020], and mixed method approaches [Baba, 2020; Gilmore & Gánem-Gutiérrez, 2020]). These and other methods (see MacIntyre et al., 2017; Verspoor et al., 2011*) are needed as working with CDST concepts (e.g., co-adaptation, emergence, and attractor states—see Larsen-Freeman & Cameron, 2008*, for a rendering of these concepts) require researchers to reconceptualize conventional approaches to related studies (see MacIntyre et al., 2017). For example, high frequency data collection points help shed light on adaptive, developmental processes, while accounting for context enables a systems-orientated, relational understanding of L2 developmental phenomena—both core foci of CDST research. Such efforts have led to advances in L2 writing scholarship, including complementary and at times novel perspectives on (a) task-based learning and task-based repetition (see a

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collection of studies by Baba and Nitta and Verspoor, Lowie, and colleagues), (b) dynamic usage-based linguistics (Huh et al., 2018*; Verspoor & Smiskova, 2012*; Verspoor et al., 2012*; Vyatkina et al., 2015*), (c) multilingualism (Cenoz & Gorter, 2011*; Herdina & Jessner, 2002; Huang et al., 2020*), (d) the pedagogical potential of CDST-inspired findings for students and instructors (Huh et al., 2018*; Jackson & Park, 2020*; Nitta & Baba, 2014*; Tin, 2011*; Verspoor, 2017) and curriculum development (Byrnes, 2020a*, 2020b; Fogal, 2020b, 2021*), and (e) psychological factors (e.g., self-regulation and agency) informing writing development (Han & Hiver, 2018*; Jackson & Park, 2020*; Nitta & Baba, 2015*, 2018*; Nitta, 2020*; Wind & Harding, 2020). These themes have helped complement and frame current understandings and research designs, respectively, into L2 writing development, and have forged new paths forward (Bulté & Housen, 2020b*; Byrnes, 2020a*; Huang et al., 2021*). In addition, this research framework has captured the attention of young scholars and increasingly informs research projects at the graduate level.

This timeline traces how CDST-L2 writing research has arrived at its present state *AND* outlines recent arguments for moving it forward. Accordingly, the timeline serves not only to describe the past and present, but also to outline how prominent voices in the field envision its continued development. This work, then, will help those familiar with the scholarship to consolidate their thoughts, and will assist readers eager to join the conversation to understand how this relatively new approach to L2 writing research has established itself in its present form. Such a historical and thematic perspective can serve as a helpful precursor for charting a path forward. To support this endeavor, the following codes are employed to assist readers with tracking development and change in the field.

Coding

A. Building theoretical validity
B. Methods (and their expansion)
C. Constructs
    1. CAF
    2. beyond CAF
D. Expanding conventional CDST borders
    1. expanding research agendas
    2. expanding contexts
        a. language of investigation
        b. context of investigation
E. Pedagogy and planning
    1. classroom
    2. curriculum
F. Dynamic usage-based linguistics

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2006	Larsen-Freeman, D. (2006). The emergence of complexity, fluency, and accuracy in the oral and written production of five Chinese learners of English. *Applied Linguistics*, *27*(4), 590–619.	This study examined variability as a source of data and explored its potential role as a facilitator of stable linguistic performance. **Larsen-Freeman** investigated how CAF measures (the dominant constructs of investigation for the subsequent decade) developed over time in five adult Chinese learners of English. Disaggregated data described how changes in L2 writing were marked by relatively unique developmental paths characterized by elevated levels of progress and regress. Engaging with the concept that *variability meaningfully serves development*, this focus influenced the direction of a long series of related works (e.g., BULTÉ & HOUSEN, 2018; HUANG et al., 2021; MACQUEEN, 2012; SPOELMAN & VERSPOOR, 2010; VERSPOOR Et al., 2008*).[1] Alongside later studies like DE BOT et al. (2007) and VERSPOOR et al. (2008), this work also underscored the potential of CDST as framework for understanding how L2 writing develops.	A B C.1 D.1
2007	de Bot, K., Lowie, W., & Verspoor, M. (2007). A dynamic systems theory approach to second language acquisition. *Bilingualism*, *10*(1), 7.	This publication was primarily a position piece that applied CDST concepts using L2 writing data to traditional interpretations of SLA. Analyses of syntactic complexity in the compositions of a homogeneous group of secondary school students of English underscored inter-and intraindividual differences across learners—development consistent with LARSEN-FREEMAN (2006) and a CDST perspective of L2 writing. This work helped catalyze variability analyses in later studies (e.g., BABA & NITTA, 2014; FOGAL, 2020a; HUANG et al., 2021; MACQUEEN, 2012; VERSPOOR et al., 2008; SPOELMAN & VERSPOOR, 2010).	A B C.1 D.1 D.2.b
2008	Verspoor, M. H., Lowie, W., & van Dijk, M. (2008). Variability in second language development from a dynamic systems perspective. *Modern Language Journal*, *92*(2), 214–231.	The authors presented a longitudinal case study (three years) exploring features of CAF in 18 writing samples composed by a single advanced learner of English at a Dutch university. Their findings supported LARSEN-FREEMAN'S (2006) suggestion that variability precedes developmental jumps. Notably, **Verspoor et al.** advanced this position by highlighting that differences in variation may also indicate stages of development. Moreover, in underscoring (intra-individual) variability, Verspoor et al. expanded LARSEN-FREEMAN'S (2006) treatment of variability by introducing relevant analytic techniques closely aligned with CDST. Notably, the techniques helped to propel subsequent studies (e.g., BABA & NITTA, 2014; FOGAL, 2019; ZHENG, 2016), and included the use or consideration of min-max graphs, smoothing, connected growers, detrended data, attractors—all features that received significant attention in a methods-related volume edited by VERSPOOR et al. (2011)—and attention to phase transitions or phase shifts (e.g., BABA & NITTA, 2014; FOGAL, 2019; HEPFORD, 2020; NITTA & BABA, 2014).	A B C.1 D.1
2008	Larsen-Freeman, D. & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford University Press.	In defined sections of this seminal monograph on CDST and applied linguistics, **Larsen-Freeman and Cameron** employed data from previously published L2 writing studies (e.g., LARSEN-FREEMAN, 2006) to highlight the utility of CDST as a useful framework for examining and explaining L2 writing development. As with earlier studies (DE BOT et al., 2007; LARSEN-FREEMAN, 2006), the theory itself was foregrounded rather than in-depth discussions of findings related to L2 writing. This work proved instrumental in guiding researchers to apply CDST principles to L2 writing phenomena.	A B D.1 E.1

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Year	References	Annotations	Theme
2009	Norris, J. M., & Ortega, L. (2009). Towards an organic approach to investigating CAF in instructed SLA: The case of complexity. *Applied Linguistics*, *30*(4), 555–578.	Although this publication was not presented as a CDST study, its impact has been considerable. **Norris and Ortega** raised concerns about research that traditionally fragmented the CAF triad (and its component parts) in a reductionist framework frequently aligned with a linear view of development. They argued, instead, for an *organic approach* to CAF research that engaged observations longitudinally and that aligned with multidimensional, dynamic (non-linear and variability oriented), and inter-related and interactive processes (including a focus on context) informing CAF development. This and similar calls (LARSEN-FREEMAN, 2006) were subsequently and widely engaged by CDST-oriented researchers investigating L2 writing processes (e.g., BULTÉ & HOUSEN, 2020a; SPOELMAN & VERSPOOR, 2010; VYATKINA et al., 2015; WANG & TAO, 2020).	B. C.1 D.1
2010	Spoelman, M. & Verspoor, M. H. (2010). Dynamic patterns in development of accuracy and complexity: A longitudinal case study in the acquisition of Finnish. *Applied Linguistics*, *31*, 532–553.	**Spoelman and Verspoor** drew from NORRIS AND ORTEGA (2009) and examined several complexity and accuracy measures in 54 writing samples composed across three years by one Dutch university student of Finnish. A first in this subdiscipline, this study employed Monte Carlo simulations, an analytic method seen in later works (e.g., FOGAL, 2020a; VERSPOOR et al., 2011). Their findings corroborated earlier (LARSEN-FREEMAN, 2006; VERSPOOR et al., 2008) and then later reports (BABA & NITTA, 2014; MACQUEEN, 2012; VERSPOOR et al., 2012) that highlighted moments where progress and regress preceded stable linguistic performance, emphasizing that variability studies can provide insights into developmental processes. Moreover, this work supported NORRIS AND ORTEGA's (2009) claim that CAF measures are neither constant over time nor collinear. As with much of the subsequent scholarship, this study was the first to foreground L2 writing scholarship rather than to use related data to demonstrate the efficacy of CDST for explaining language change.	B C.1 D.1 D.2.a
2011	Cenoz, J., & Gorter, D. (2011). Focus on multilingualism: A study of trilingual writing. *THe Modern Language Journal*, *95*(3), 356–369.	While this study examined features of the CAF triad, these were not explicit in the report. Rather, this work was the first to employ CDST outside of an overt CAF framework and focused on multilingualism across three languages (Basque, Spanish, and English) in secondary school writers in the Basque Country (Spain). **Cenoz and Gorter** moved away from treating each language independently and instead explored the context holistically by examining interactions across the three languages (see too DE ANGELIS & JESSNER, 2012). Building on VERSPOOR et al. (2008), their work highlighted connected growers across languages and argued that developing multilingualism engages non-linear and interdependent (L2 writing) processes.	B C.2 D.1 D.2.a D.2.b

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2011	Tin, T. B. (2011). Language creativity and co-emergence of form and meaning in creative writing tasks. *Applied Linguistics*, *32*(2), 215–235.	**Tin**'s analyses of English poetry composed by Indonesian university students advanced the present context in four ways: her work (1) was the first to use data from writers outside the Western context; (2) examined the creative use of language (through acrostics and similes) rather than a conventional focus on academic writing; (3) investigated writing composed in pairs, allowing for analyses of interactions within dyads and with the text and task, highlighting a holistic approach to language development across a broad sweep of the learning environment, and; (4) explored microgenetic changes during text construction (see too FOGAL, 2019), thus operationalizing timescales relativistically (i.e., systematically, in a context-dependent manner—see de Bot, 2015) rather than through the longitudinal lens frequently called for. Tin's findings demonstrated how salient yet formal constraints (the acrostics task) generated selection pressures that engendered new writing strategies and complex and innovative language use, emphasizing how form and meaning co-evolve, thus substantiating earlier arguments (NORRIS & ORTEGA, 2009; VERSPOOR et al., 2008) about co-dependency and connected growers concerning CAF features.	B C.1 D.1 D.2.b E.1
2011	Verspoor, M.H., de Bot, K. & Lowie, W. (eds.). (2011) *A dynamic approach to second language development: Methods and techniques.* John Benjamins.	This edited volume outlined tenets of a CDST approach to investigating language change and L2 writing development, but its primary focus was to elaborate on research methods such as variability analyses and modelling. The volume explicitly emphasized analytic techniques concomitant with a CDST perspective and provided meaningful guidance on their use (e.g., min-max graphs and Monte Carlo simulations). This publication had a notable influence on subsequent L2 writing studies (e.g., BABA & NITTA, 2014; FOGAL, 2020a; PENRIS & VERSPOOR, 2017; ZHENG, 2016).	A B D.1
2012	Macqueen, S. (2012). *The emergence of patterns in second language writing: A sociocognitive exploration of lexical trails*. Peter Lang.	Discussed tangentially in previous works, **Macqueen** advanced the literature by foregrounding emergence and adaptive imitation. Her work examined how the use of chunks (or patterns of language use—see too VERSPOOR & SMISKOVA, 2012) developed in the writing of four international undergraduate students composing in English. Through lexical trail analyses, this work documented how learners adapted their language resources in unique ways and as a precursor to stable linguistic performance. Macqueen's findings supported earlier (SPOELMAN & VERSPOOR, 2010, VERSPOOR et al., 2008, 2012) and then later positions (e.g., BABA & NITTA, 2014; FOGAL, 2020a; HUANG et al., 2021) concerning variability as a potential marker of meaningful developmental shifts in L2 writing. Macqueen's attention to emergence as a conceptual tool capable of generating insights into L2 writing development encouraged later studies to examine emergence as a more central theme (e.g., BABA & NITTA, 2014; FOGAL, 2019; MACQUEEN & KNOCH, 2020; see too TIN, 2011).	A B C.1 D.1

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Year	References	Annotations	Theme
2012	Verspoor, M., & Smiskova, H. (2012). Foreign language writing development from a dynamic usage based perspective. In R. Manchón (Ed.), *L2 writing development: Multiple perspectives* (pp. 17–46). De Gruyter Mouton.	Like MACQUEEN (2012), this study explored the development of chunks. Employing a dynamic-usage based (DUB) theory—shades of which are presented in VERSPOOR et al. (2008) and SPOELMAN & VERSPOOR (2010)—the researchers examined writing samples in the Netherlands composed across two years by two groups of secondary school students of English (a low and high language input group). Via a detailed variability analysis (see VERSPOOR et al., 2011) of a single learner from each group, **Verspoor and Smiskova** documented variegated learning trajectories in the high input learner. This finding substantiated earlier results (e.g., (LARSEN-FREEMAN, 2006; VERSPOOR et al., 2008) that underscored variability's function as a driver of change and the utility of variability analyses for detecting developmental patterns. As a meaningful framework for examining frequency of input in the CDST domain, the DUB approach also inspired later studies (e.g., BULTÉ & HOUSEN, 2020a; CHAN et al., 2015; VERSPOOR & SMISKOVA, 2012; VYATKINA et al., 2015).	A C.1 D.1 D.2.b F
2012	De Angelis, G., & Jessner, U. (2012). Writing across languages in a bilingual context: A dynamic systems theory approach. *L2 writing development: Multiple perspectives*. In R. Manchón (Ed.) *L2 writing development: Multiple perspectives* (pp. 47–69). De Gruyter Mouton.	This study focused on interaction patterns (see too VERSPOOR & SMISKOVA, 2012 and PENRIS & VERSPOOR, 2017) across languages that inform writing development in multilingual learners. **De Angelis and Jessner** examined fluency data in the compositions of eighth-grade students in Italy writing in Italian (L1), German (L2), and English (L3). Their work documented patterns of interaction that influenced development across all three languages. Alongside CENOZ AND GORTER (2011), this study helped establish links between research on multilingualism and L2 writing through a CDST lens by having underscored the value of said theory for (1) exploring multidimensional and dynamic interactions engaged by multilingual writers, and (2) moving related studies on multilingual writers away from a reductionist framework and toward a holistic treatment of multilingualism.	C.1 D.1 D.2.a D.2.b
2012	Norris, J. M., & Manchón, R. M. (2012). Investigating L2 writing development from multiple perspectives: Issues in theory and research. In R. Manchón (Ed.), *L2 writing development: Multiple perspectives* (pp. 221–244). De Gruyter Mouton.	As part of a wider synopsis on L2 writing research, **Norris and Manchón** devoted considerable space to discussing some of the benefits of a CDST approach to researching L2 writing. They provided useful insights and direction for research methods moving forward (e.g., longitudinal designs with high frequency data collection points and explicit connections between theory and methods) and emphasized the general importance of L2 writing studies to capture the wide swath of variables informing teaching and learning spaces in formal educational contexts (see related explicit discussions [BYRNES, 2020a] and relevant methods [FOGAL, 2021]). This commentary is particularly noteworthy, as it acknowledged and demonstrated growing attention from researchers not explicitly associated with CDST (see too NORRIS & ORTEGA, 2009) to its value as a framework for L2 writing scholarship.	B D.1 E.1

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Year	References	Annotations	Theme
2012	Verspoor, M. H., Schmid, M. & Xu, X. (2012). A dynamic usage based perspective on L2 writing, *Journal of Second Language Writing*, *21*, 239–263.	This work marked a milestone: the first explicitly framed CDST study published in the flagship journal of L2 writing scholarship. Like NORRIS AND MANCHÓN (2012), this study helped consolidate CDST as a mainstay theoretical perspective on L2 writing studies. Under the DUB framework (see too VERSPOOR & SMISKOVA, 2012; VYATKINA et al., 2015), **Verspoor et al.** used a cross-sectional design to examine texts composed by 489 Dutch secondary school students. They demonstrated a need for re-envisioning how proficiency is measured in writing data, calling for research oriented to dynamic and nonlinear developmental behavior as a tool for gaining insight into L2 writing processes.	B C.1 D.2.b F
2014	Nitta, R., & Baba, K. (2014). Task repetition and L2 writing development: A longitudinal study from a dynamic systems perspective. In H. Byrnes & R. M. Manchón (Eds.), *Task-based language learning: Insights to and from writing* (pp. 107–136). John Benjamins.	**Nitta and Baba** expanded the present context by researching task-based language teaching and learning. The authors explored the effects of task-type repetition on the writing of Japanese learners of English, with foci on different components of the CAF triad. Their work explored 1300 repeated timed writing tasks composed over one academic year. The study documented how repeated writing tasks improve grammatical and lexical features and underscored pedagogical advantages of iterative writing practices when employed over the long term (see too BABA & NITTA, 2014 and HUH et al., 2018). Their work also corroborated earlier findings on the role of variation in writing development and importantly documented phase shifts at the group (i.e., classroom) level—notable as earlier works (VERSPOOR et al., 2008; SPOELMAN & VERSPOOR, 2010) recorded such shifts only in individuals.	B C.1 D.2.b E.1
2014	Baba, K. & Nitta, R. (2014). Phase transitions in development of writing fluency from a complex dynamic systems perspective. *Language Learning, 64*, 1–35.	This study was the first to foreground phase shift analyses in L2 writing studies. Building on earlier studies (SPOELMAN & VERSPOOR, 2010; VERSPOOR & SMISKOVA, 2012; VERSPOOR, et al., 2008) and providing focus for later work (FOGAL, 2020a), **Baba and Nitta** examined fluency development in two Japanese university students of English over a single academic year. Their work showed how minor changes in writing conditions generated meaningful fluency development. Such increases were accompanied by variability in tandem with sudden phase shifts—substantiating earlier findings (VERSPOOR et al., 2008; SPOELMAN & VERSPOOR, 2010) that showed how notable changes in different elements of the CAF triad were frequently accompanied by high levels of variability. As with NITTA AND BABA (2014), this work also underscored the pedagogical value of iterative writing tasks for L2 writing development.	B C.1 D.2.b E.1
2015	Nitta, R. & Baba, K. (2015). Self-regulation in the evolution of the ideal L2 self: A complex dynamic systems approach to the L2 motivational self system. In Z. Dörnyei, A. Henry, & P. D. MacIntyre (Eds.), *Motivational dynamics in language learning* (pp. 367–396). Multilingual Matters.	Like CENOZ AND GORTER (2011) and later FOGAL (2019), this case study helped introduce non-CAF constructs to the present context. **Nitta and Baba** examined motivational dynamics through the lens of L2 writing. Through analyses of iterative writing tasks (see NITTA & BABA, 2014), L1 reflective writing, and participant interviews they employed self-regulation (see also HAN & HIVER, 2018; JACKSON & PARK, 2020; NITTA & BABA, 2015) as a construct to examine how writers' self-images changed through multiplex interactions of the self and learning eco-system. Their research underscored self-regulation and co-adaptation as useful concepts in L2 writing research for understanding individual differences in learner motivation (see too LOWIE & VERSPOOR, 2017 and HUANG et al., 2021) as well as immediate and long-term learning outcomes.	B C.2. D.1 D.2.b

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Year	References	Annotations	Theme
2015	Chan, H., Verspoor, M., & Vahtrick, L. (2015). Dynamic development in speaking versus writing in identical twins. *Language Learning*, *65*(2), 298–325.	Using a DUB approach, **Chan et al.** compared how sentence complexity developed longitudinally in the speaking and writing of a set of Taiwanese twins learning English in secondary school. Using a hidden Markov model, Chan et al. traced developmental stages and outlined how different measures of syntactic complexity interact. Syntactic complexity developed at different rates across modes, and the twins demonstrated unique developmental paths. This work highlighted how statistical techniques like hidden Markov chains (see VERSPOOR et al., 2017) can help elucidate trajectories and patterns of developmental phenomena (see FOGAL, 2020a, using Monte Carlo simulations).	B C.1 D.1 F
2015	Vyatkina, N., Hirschmann, H., & Golcher, F. (2015). Syntactic modification at early stages of L2 German writing development: A longitudinal learner corpus study. *Journal of Second Language Writing*, *29*(1), 28–50.	Through a DUB framework and focused on the development of syntactic complexity in beginner learners of German writing, **Vyatkina et al.** demonstrated how specific and global measures of syntactic complexity can function as indices of development in novice writers. Using mixed effects modeling, their work underscored the benefits of a nuanced approach to developmental data through analyses of group trends and individual variation, demonstrating nonlinear developmental trajectories consistent with earlier studies (e.g., CHAN et al., 2015; DE BOT et al., 2007).	B C.1 D.2.a F
2016	Zheng, Y. (2016). The complex, dynamic development of L2 lexical use: A longitudinal study on Chinese learners of English. *System*, *56*, 40–53.	Similar to MACQUEEN (2012) and VERSPOOR AND SMISKOVA (2012), this case study explored the development of lexical bundles. **Zheng** examined how different features of lexical development changed over time and how interactions between words and lexical bundles informed usage in Chinese learners of English studying in a Chinese university. Using analytic tools presented in VERSPOOR et al. (2011), Zheng underscored the utility of min-max graphs (see too BABA & NITTA, 2014; FOGAL, 2019, 2020a; VERSPOOR et al., 2017; VERSPOOR & SMISKOVA, 2012) and Monte Carlo simulations (see FOGAL, 2020a) for investigating change and interactions over time, having noted that lexical use and development is an interactive process that informs learners' L2 lexical structures. Zheng also highlighted a lack of socio-cultural dimensions in her study, something that later publications foregrounded (e.g., FOGAL, 2019; NITTA, 2020).	B C.2 D.2.b
2017	Verspoor, M. H., Lowie, W., Chan, H. P., & Vahtrick, L. (2017). Linguistic complexity in second language development: Variability and variation at advanced stages. *Recherches en Didactique des Langues et des Cultures: Les Dahiers de l'Acedle*, *14*, 1–27.	**Verspoor et al.**'s longitudinal study investigated changes in six measures of complexity in the writing of three advanced Dutch learners of English. Aimed partially at detecting comparable learning paths across a similar group of learners and using a hidden Markov model (see too CHAN et al., 2015), they found that learners demonstrated unique learning paths, despite measures of syntactic and lexical complexity that followed similar patterns. As earlier (e.g., LARSEN-FREEMAN, 2006; VERSPOOR et al., 2008; BABA & NITTA, 2014; VYATKINA et al., 2015) and then later (e.g., FOGAL, 2019; MACQUEEN & KNOCH, 2020) studies have demonstrated, development was marked by variegated inter-individual learner trajectories. Moreover, the authors stressed the importance of examining such learning paths as means for understanding more individual patterns of development, noting that development is a unique process (rather than a product) maintained by each learner.	B C.1 D.1 D.2.b

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Year	References	Annotations	Theme
2017	Penris, W., & Verspoor, M. (2017). Academic writing development: a complex, dynamic process. In S. E. Pfenninger & J. Navracsics (Eds.), *Future research directions for applied linguistics* (pp. 215–242). Multilingual Matters.	**Penris and Verspoor**'s longitudinal case study examined the development and interaction patterns of 13 variables associated with syntactic and lexical complexity in 49 writing samples composed across 12 years by one advanced Dutch learner of English. Notably, this work compared development across two periods of study: four years in a teacher training program, and after five years of employment, three years in a graduate school program. Employing methods outlined in VERSPOOR et al. (2011) and corroborating earlier findings (e.g., SPOELMAN & VERSPOOR, 2010) concerning dynamic and non-linear learning processes, Penris and Verspoor recommended the finite verb-token ratio as a meaningful index of writing development among advanced learners given its propensity to correlate strongly with syntactic and lexical variables. They also suggested average sentence length and academic vocabulary as useful measures of development over time as both indices demonstrated growth across the study's timeframe.	B C.1 D.2.b
2018	Nitta, R. & Baba, K. (2018). Understanding benefits of repetition from a complex dynamic systems perspective. In M. Bygate (Ed.), *Learning language through task repetition* (pp. 279–309). John Benjamins.	This work contributes to a series of publications on the impact of task repetition (BABA & NITTA, 2014; NITTA & BABA, 2014, 2015; FOGAL, 2019; HUH et al., 2018), individual differences (HUANG et al., 2021; NITTA & BABA, 2015), and the role of self-regulation and motivational dynamics on writing development (HAN & HIVER, 2018; JACKSON & PARK, 2020; NITTA & BABA, 2015). This longitudinal case-based study (i.e., examining a case as a complex system) focused on task-as-affordance and explored changes in CAF measures as well as self-regulatory functions over 30 weeks in compositions composed in English (L2) and Japanese (L1). **Nitta and Baba** emphasized that repeated tasks over the long term may meaningfully impact writing development and can influence learners' agentive stance toward learning. With some earlier studies focused on individual differences, this was the first to foreground agency in the present context (see LARSEN-FREEMAN, 2006 and VYATKINA et al., 2015 for brief mentions).	B C.1 C.2 D.1 D.2.b E.1
2018	Han, J., & Hiver, P. (2018). Genre-based L2 writing instruction and writing-specific psychological factors: The dynamics of change. *Journal of Second Language Writing*, *40*, 44–59.	**Han and Hiver** expanded the present context by investigating learner psychological processes informing genre-based writing instruction. Their work examined how a set of psychological constructs interact and impact learners' motivational profiles. Through a time-series analysis across nine weeks and using cluster analyses (see too FOGAL, 2021) to identify groups of psychological profiles in middle school learners of English in South Korea ($N = 174$), this work documented how a genre-based pedagogy guided learners' self-regulatory capacities and underscored, for example, how said capacities are more dominant than writing anxiety, serving as a potential influence on learners' mastery of the target genre. Their findings complement a growing body of research on L2 writing motivational dynamics—see related discussions, for example, on self-regulation (JACKSON & PARK, 2020; NITTA & BABA, 2015, 2018).	B C.2 D.1 D.2.b E.1

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Year	References	Annotations	Theme
2018	Huh, M. H., Lee, J., & Ha, H. S. (2018). EFL writing development through repetition of a literature-reading-writing task. *Korean Journal of Applied Linguistics*, *34*(4), 53–74.	Using the DUB framework (see VERSPOOR et al., 2012), **Huh et al**. expanded research on task repetition (BABA & NITTA, 2014; NITTA & BABA, 2014, 2015) with a specific focus on reading-to-write tasks. Exploring changes in CAF measures over one semester in a new context (English learners in a Korean university), the authors documented—like many earlier studies—that despite sharing some similar developmental features, students at different proficiency levels demonstrated variegated learning patterns. They also noted the positive impact of task repetition on writing fluency (see BABA & NITTA, 2014). In addition, their work expanded the purview of a CDST approach by corroborating findings (TIN, 2011; FOGAL, 2019) on the value of literary works as a complement to academic prose for developing classroom-based L2 writing.	C.1 D.2.b E.1 F
2018	Bulté, B., & Housen, A. (2018). Syntactic complexity in L2 writing: Individual pathways and emerging group trends. *International Journal of Applied Linguistics*, *28*(1), 147–164.	This longitudinal study examined an atypically large set of syntactic complexity measures (n = 5) in the writing development of ten young learners of English in the Netherlands. Focused on individual variation, **Bulté and Housen** demonstrated how notable degrees of variability marked individual development despite near linear group-level changes in complexity (see too VERSPOOR et al., 2008). These findings demonstrated the potential developmental function of variability associated with L2 writing (BABA & NITTA, 2014; LARSEN-FREEMAN, 2006; SPOELMAN & VERSPOOR, 2010). In addition, this work emphasized a cautionary note: Bulté and Housen argued for a restrained approach to interpreting trends and trajectories in individual development, noting that instances of variability at the learner (rather than group) level may result from the process of measurement, assessment, and L2 performance. While variability remains an important facet of CDST research, they called for a more critical and cautionary approach to interpreting individual variability than earlier studies on L2 writing complexity may have done. A variant of this position is revisited in BULTÉ AND HOUSEN (2020b) in significantly greater detail.	A B C.1 D.2.b
2019	Fogal, G. G. (2019). Tracking microgenetic changes in authorial voice development from a complexity theory perspective. *Applied Linguistics*, 40(3), 432–455.	Employing methods outlined in VERSPOOR et al. (2011), **Fogal** followed CENOZ AND GORTER (2011) and NITTA AND BABA (2015) by shifting attention away from the CAF framework. Fogal examined cognitive processes informing authorial voice development (see too FOGAL, 2020a) in Japanese learners of English using microgenetic analyses of repeated tasks. This report supported earlier findings about the benefits of task-type repetition (NITTA & BABA, 2014) for advancing features of L2 writing proficiency and underscored the efficacy of microgenesis (TIN, 2011) for researching timescales relativistically. In addition, this study highlighted (like TIN, 2011 and HUH et al., 2018) the pedagogical potential of literature (rather than conventional academic prose) as a learning-to-write tool. This work was also among the first to demonstrate non-linear and variegated patterns of writing development beyond the CAF context (see too FOGAL, 2020a; MACQUEEN AND KNOCH, 2020).	B C.2 D.1 E.1

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Year	References	Annotations	Theme
2019	Lowie, W. M. & Verspoor, M. H. (2019). Individual differences and the ergodicity problem. *Language Learning*, *69*(S1), 184–206.	Continuing a series of studies on individual differences (e.g., NITTA & BABA, 2015, 2018; VERSPOOR et al., 2017), **Lowie and Verspoor** examined if variability co-related with increased writing ability. They explored the effects of motivation and aptitude on writing development, as measured by different CAF aspects. Performing variability analyses at the group and individual level across a nearly homogenous group of 22 first-year secondary school learners of English in the Netherlands, Lowie and Verspoor documented group level results that did not map onto individual learners, underscoring a lack of ergodicity. For example, co-relations with growth-related variables failed to show similarities across high performing learners who also demonstrated unique developmental trajectories over time. Importantly, this work underscored that variability functioned as a better predictor of proficiency gains than did individual differences and re-emphasized the effectiveness of longitudinal case studies for unpacking individual learners' developmental processes (e.g., see FOGAL, 2020a; MACQUEEN, 2012; NITTA, 2020; NITTA & BABA, 2018; VERSPOOR et al., 2008; SPOELMAN & VERSPOOR, 2010). See HUANG et al. (2021) for a replication study of this work.	A B C.1 C.2 D.2.b
2020	Fogal, G. G. (2020a). Investigating variability in L2 development: Extending a complexity theory perspective on L2 writing studies and authorial voice. *Applied Linguistics*, *41*(4), 575–600.	This publication progressed from earlier variability studies and employed related analytic techniques, including Monte Carlo analyses and min-max graphs (see too SPOELMAN & VERSPOOR, 2010 and ZHENG, 2016) to examine changes in authorial voice (see also FOGAL, 2019) in one learner across four years of undergraduate studies. **Fogal** examined how and when features of voice developed in a Thai learner of English studying in a Thai university. This work substantiated earlier arguments regarding variability as a driver of change but did so outside the CAF framework. Doing so expanded the explanatory utility of CDST across a wider range of L2 writing constructs than typically reported on in the literature (similarly, see; FOGAL, 2019; NITTA & BABA, 2015; ZHENG, 2016) This study also emphasized the potential of variability studies for identifying moments in developmental trajectories that merit further investigation (e.g., where characteristics of a phase shift are present).	A C.2 D.1 D.2.b
2020	Huang, T., Steinkrauss, R., & Verspoor, M. (2020): Learning an L2 and L3 at the same time: Help or hinder? *International Journal of Multilingualism*, Advanced view.	Expanding on research into multilingualism and L2 writing (CENOZ & GORTER, 2011; DE ANGELIS & JESSNER, 2012), this year-long study explored how learning multiple languages concurrently affects English writing development. Using writing samples from two groups (English only learners [L2] or English and another language [L2 + L3)], development was charted through holistic scores of CAF features. **Huang et al.** documented no meaningful differences between the two groups. However, variability analyses showed that L2 + L3 learners demonstrated greater non-linearity in fluency development. While the addition of a third language may have negatively impacted L2 fluency stability, previous studies have shown how such instability is characteristic of long-term growth in L2 writing. This work thus corroborated previous findings that have emphasized the waxing and waning of different linguistic subsystems as part of development (e.g., BABA & NITTA, 2014; FOGAL, 2020a; VERSPOOR & SMISKOVA, 2012).	C.1 D.1 D.2.a

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Year	References	Annotations	Theme
2020	Jackson, D. O., & Park, S. (2020). Self-regulation and personality among L2 writers: Integrating trait, state, and learner perspectives. *Journal of Second Language Writing*, *49*.	Following on studies that explored beyond the CAF context (e.g., CENOZ & GORTER, 2011; FOGAL, 2019, 2020b; HAN & HIVER, 2018; NITTA & BABA, 2015), this investigation complemented work on motivation and self-regulation (HAN & HIVER, 2018; NITTA, 2020) and contributed to a nascent focus on individual differences (HUANG et al., 2021; LOWIE & VERSPOOR, 2019; NITTA, 2020; NITTA & BABA, 2018). This two-part, sequential study (cross-sectional and then longitudinal, and following a replace with Quantitative/Qualitative design) investigated the impact of interactions between self-regulation and a pair of personality variables on L2 writing processes. Across a series of findings that underscored, for example, the positive and negative effect of personality traits on self-regulation and L2 writing processes, **Jackson and Park** expanded related discussions by widening the analytic lens of a CDST approach to exploring self-regulation and L2 writing processes (see too NITTA, 2020).	B C.2 D.1
2020	Murakami, A. (2020). On the sample size required to identify the longitudinal L2 development of complexity and accuracy indices. In W. Lowie, M. Michel, A. Rousse-Malpat, M. Keijzer, & R. Steinkrauss (Eds.), *Usage-based dynamics in second language development* (pp. 29–49). Multilingual Matters.	**Murakami**'s exploratory study primarily addressed methods concerned with gauging the longitudinal development of CAF measures and examined the number of data points required to identify learner development over time. Through an analysis of a learner corpus of 2,160 writings composed by 54 learners of English, Murakami reported the number of data points required to reliably measure development varied by indices and the statistical model. Like VERSPOOR et al. (2011) and BULTÉ AND HOUSEN (2020b), among others, this contribution broadened discussion concerned with research methods focused on developmental trajectories related to CAF (and potentially other) constructs.	B C.1 D.1
2020	Bulté, B. & Housen, A. (2020a). A DUB-inspired case study of multidimensional L2 complexity development: Competing or connecting growers? In W. Lowie, M. Michel, A. Rousse-Malpat, M. Keijzer, & R. Steinkrauss (Eds.), *Usage-based dynamics in second language development* (pp. 50–86). Multilingual Matters.	**Bulté and Housen**'s case study further demonstrated the value of DUB-informed approaches to studying L2 (writing) development (see too SPOELMAN & VERSPOOR, 2010; VERSPOOR et al., 2008, 2011; VYATKINA et al., 2015). The authors tracked the interrelationships and development of four complexity measures in the writing of ten Dutch secondary school learners of English across two years. Through group and individual level analyses, they documented patterns of change consistent with earlier DUB studies (e.g., dynamic and competing and supportive relationships among complexity measures, as well as unique developmental trajectories). This work also supported earlier calls (e.g., NORRIS & ORTEGA, 2009; SPOELMAN & VERSPOOR, 2010) to capture a suite of complexity indices for revealing (L2 writing) developmental processes. While Bulté and Housen concluded with a note of optimism about the future of the DUB framework, their work also expressed a prudent voice about DUB-informed analyses (see too BULTÉ AND HOUSEN, 2018, 2020b), having cautioned researchers regarding the selection of analytic tools and the over-interpreting of related data.	A B C.1 D.1 F

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Year	References	Annotations	Theme
2020	Fogal, G. G., Baba, K., & Nitta, R. (2020). A complex dynamic systems account of corrective feedback and L2 writing development. In M. Riazi, L. Shi, & K. Barkaoui (Eds.), *Writing in a second language: Learning, teaching, and assessment. A book in honour of Alister Cumming* (pp. 164–189). Cambridge Scholars Publishing.	This work was the first to explicitly address written corrective feedback (WCF) from a CDST perspective (see too LEE et al., 2021). Primarily a position piece that considered ways a CDST approach differs from, yet simultaneously complements, conventional analyses of WCF, **Fogal et al.** considered the principles of co-adaptation and iteration as characteristics of dynamic systems capable of generating meaningful insights for theory (e.g., generating a holistic account of WCF that accounts for context and individual learners) and pedagogy (e.g., the opportunity co-adaptation presents for empowering instructors in delivering effective WCF)). This work also helped to establish research outside early attention to the CAF triad as a new and complementary norm (see too, for example, CENOZ & GORTER, 2011; FOGAL, 2019, 2020a; HAN & HIVER, 2018; JACKSON & PARK, 2020; NITTA & BABA, 2015, 2018).	A C.2 D.1 E.1
2020	Wang, Y. & Tao, S. (2020) The dynamic co-development of linguistic and discourse-semantic complexity in advanced L2 writing. In G. G. Fogal & M. H. Verspoor (Eds.), *Complex dynamic systems theory and L2 writing development* (pp. 49–78). John Benjamins.	**Wang and Tao** introduced grammatical metaphor as a meaning-making dimension for exploring and widening the exploratory lens of the CAF framework. Their case study of two advanced Chinese learners of English examined complexity measures through variability analyses (see VERSPOOR et al., 2011) and highlighted change consistent with complex systems (i.e., nonlinear progress and dynamic interactions across different linguistics subsystems). They underscored, for example, variability associated with learners moving from a verb- and clause-dominated academic writing style to a synoptic, noun-dominated discourse. Addressing earlier calls (BULTÉ & HOUSEN, 2020a NORRIS & ORTEGA, 2009; SPOELMAN & VERSPOOR, 2010), this study contributed new ways of thinking about and researching complexity by including linguistic *and* semantic dimensions in their analyses.	B C.1 C.2 D.1
2020	Macqueen, S. & Knoch, U. (2020). Adaptive imitation: Formulaicity and the words of others in L2 English academic writing. In G. G. Fogal & M. H. Verspoor (Eds.), *Complex dynamic systems theory and L2 writing development* (pp. 82–108). John Benjamins.	This two-part study first examined writing from sources and formulaicity in compositions produced by 480 test-takers. Through a case study, **Macqueen and Knoch** then explored how an L2 writer worked with language chunks as part of an adaptive process into a new discourse community. Their work demonstrated how early phases of L2 writing development are marked by imitation, while later stages result in conventional syntactic constructs generated from interactions between internalized patterns of language and source texts. This study introduced formulaicity and adaptive imitation into the present context, foregrounding source use, lexical combinations (MACQUEEN, 2012; VERSPOOR & SMISKOVA, 2012), and agency (NITTA, 2020; NITTA & BABA, 2018; BYRNES, 2020a) to shed light on how learners' writing develops.	B C.2 D.1

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Year	References	Annotations	Theme
2020	Nitta, R. (2020). Biographical retrodiction for investigating the evolution of learner agency and L2 writing development through study abroad experiences. In G. G. Fogal & M. H. Verspoor (Eds.), *Complex dynamic systems theory and L2 writing development* (pp. 133–158). John Benjamins.	**Nitta**'s work contributed three important features to the present context. First, Nitta introduced readers to biographical retrodiction. Designed to capture salient features of development, researchers begin with learner outcomes and then use first-person accounts of long-term language learning to trace learners' developmental trajectories. Second, this study engaged a new context of investigation (the study abroad experience) to explore how two focal learners advanced their writing proficiency. In doing so, Nitta demonstrated how agency was revised, adapted, and reformulated through different experiences inside and outside the classroom, showing how hardships, for example, may function as perturbations in agentic systems. Third, these findings expanded awareness of learner agency and substantiated its utility as a meaningful construct of analysis in CDST-L2 writing research (see too BYRNES, 2020a; NITTA & BABA, 2018).	B C.2 D.1 D.2.b
2020	Bulté, B. & Housen, A. (2020b). A critical appraisal of the CDST approach to investigating recentlinguistic complexity in L2 writing development. In G. G. Fogal & M. H. Verspoor (Eds.), *Complex dynamic systems theory and L2 writing development* (pp. 207–238). John Benjamins.	Following on their earlier work, (BULTÉ AND HOUSEN, 2018, 2020a), this critical appraisal of CDST-inspired studies on linguistic complexity examined a selection of related publications. **Bulté & Housen** outlined five specific concerns in this context, including, for example, selection and confirmation biases, generalizability, and the contribution of "noise" to datasets—that is, that variability is not always a developmental marker. Their work also highlighted the struggles some researchers have with operationalizing CDST (concerns, they emphasized, typical of engaging with a new epistemology) and demonstrated through sample analyses both the potential of CDST to make meaningful contributions in said context and its complementary nature to research out from under the CDST umbrella. Their critique here and across all three recent publications was a welcomed contribution to the scholarship and provided a meaningful focus of attention for continued studies.	A B C.1 D.1
2020	Byrnes, H. (2020a). Envisioning L2 writing development in CDST under a curricular optic: A proposal. In G. G. Fogal & M. H. Verspoor (Eds.), *Complex dynamic systems theory and L2 writing development* (pp. 241–270). John Benjamins.	In this position piece, **Byrnes** argued (see too Byrnes, 2020b) for CDST-L2 writing research to reconceptualize time and development beyond conventional linguistic subsystems as treated at the individual or group (i.e., classroom) level. To complement these earlier foci and to build on previous recommendations (NORRIS & MANCHÓN, 2012), Byrnes proposed, for one, to operationalize *curriculum* as a viable construct of study that would enable researchers to map and assist writing development across longer timespans (e.g., four years of undergraduate studies) and larger developmental contexts (a curriculum of study) than established research generally allows for. To assist with this call, Byrnes invited readers to reconceptualize such spaces as "simplex systems" (van Geert & Steenbeek, 2014), a call FOGAL (2021) unpacked and employed in greater detail.	A B C.2 D.1 D.2.b E.2

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Year	References	Annotations	Theme
2021	Fogal, G. G. (2021). System mapping simplex spaces: Facilitating change in L2 educational contexts from a complexity theory perspective. *International Review of Applied Linguistics in Language Teaching*, Advance view.	Following on BYRNES (2020a), **Fogal** employed simplex systems and introduced system mapping as conceptual and analytic tools, respectively, for understanding and guiding L2 writing development at the curricular level. This study examined how relevant stakeholders (administrators, instructors, and students) viewed the influence of a set of variables associated with L2 writing development across multiple sections of a university course. Using a system mapping technique described therein and with the aid of cluster analyses (see too HAN & HIVER, 2018) to identify relationships across and within groups, Fogal documented how system mapping can account for interactions in L2 writing spaces (operationalized as simplex systems) atypical of classroom research by engaging the larger context such spaces are embedded in (e.g., administrative) and are informed by (e.g., learner histories), thus pushing understanding of classroom-based L2 writing research beyond the teacher-learner interface. Like recent works by BULTÉ AND HOUSEN (2020b), BYRNES (2020a), and MURAKAMI (2020), this work contributed to expanding earlier methods-related discussions (VERSPOOR et al., 2011).	A B C.2 D.1 D.2.a D.2.b E.2
2021	Lee, I., Luo, N., & Mak, P. (2021). Teachers' attempts at focused written corrective feedback in situ. *Journal of Second Language Writing*, Advance view.	**Lee et al**. build on FOGAL et al.'s (2020) introduction of CDST principles into written corrective feedback (WCF) scholarship. Rather than focusing exclusively on learners' writing, this study examined how two school teachers in Hong Kong worked with WCF in the secondary school setting. This ten-month study was unique in the present context in that writing teachers and their lived experiences were foregrounded. Expanding FOGAL et al. (2020), this study demonstrated—among other findings—the benefit of focused WCF as an iterative tool capable of moderating teachers' WCF behavior, leading to opportunities for instructors to personalize WCF for individual learners.	C.1 C.2 D.1 D.2.B E.1
2021	Huang, T., Steinkrauss, R. & Verspoor, M. (2021). Variability as predictor in L2 writing proficiency. *Journal of Second Language Writing*, Advance view.	In a further study examining individual differences (e.g., NITTA & BABA, 2015, 2018; VERSPOOR et al., 2017) and variability in writing output, this replication study of LOWIE & VERSPOOR (2019) focused on a different population of learners (22 Chinese adults studying English in a Chinese university). Using measures refined from LOWIE & VERSPOOR (2019), this work explored relationships among affective and cognitive aspects of individual differences (motivation, language aptitude, and working memory) on writing gains over one academic year. **Huang et al**.'s findings replicated those of LOWIE & VERSPOOR (2019): variability functioned as the best predictor of writing gains and writing proficiency. Furthermore, this study provided evidence for the function of variability as a meaningful driver of L2 writing development. To advance related research, Huang et al. invited future studies to substantiate these findings and to account for the dynamic interaction of factors informing individual differences across time.	A B C.1 C.2 D.1

[1]* Author names appear in capitals when the study referred to appears elsewhere in this timeline.

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