

Directed Motivational Currents Under DST: A Critical Review

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Abstract

"Directed motivational currents" (DMCs) represent a novel construct within L2 motivation theory, extensively utilized in the domain of second language acquisition research. Initially introduced by Dörnyei (2013), DMCs describe a state of complete immersion in a task, aligning with the dynamic systems theory (DST), particularly during the socio-dynamic phase of L2 motivation. At the outset, Dörnyei was inspired by the 'flow experience' introduced by Csikszentmihalyi in 1975. This review centers on the construct of 'directed motivational currents' in accordance with the complex dynamic systems theory (DST). Consequently, the four significant periods in second language (L2) motivation, the complex dynamic systems theory, as well as the characteristics and dimensions of DMCs will be expounded. Additionally, this article begins with presenting its origin and reflecting on how the research of DMCs has evolved over time. This can be categorized into its validity, its application in teaching, the triggers and mediating forces involved, and its relationship with other concepts. Critiques regarding it will also be provided.

Keywords: directed motivational currents, dynamic systems theory, DST

1. Introduction

The study of second language motivation theory was initiated in the late 1950s, which has gone through the several periods from the psychosocial model proposed by Robert Gardner and Wallace Lambert to cognitive-contextual, process-oriented, ego-systems and socio-dynamic models. In 2013, Dörnyei and his colleagues introduced a novel construct that incorporated the strengths of the preceding phases, marking the most recent advancement in second language motivation theory.

And the empirical research on motivation, emerged in 1950s and 1960s, can be divided into two phases. Prior to 2005, the majority of research was centered around psychosocial model (Gardner & Lambert 1972). This model highlighted the integrative and instrumental motivational tendencies, with a particular focus on the former. On the contrary, Wen and her associates regarded the latter as the primary determinant influencing motivation to learn a second language. (Chang, 2017)

The concept of "directed motivational currents" was first introduced by Dörnyei in 2013. It describes a state of complete immersion in a task and exhibits multi-dimensional, multi-layered, and cross-disciplinary characteristics. Comprising four dimensions, namely goal/vision-orientedness, a prominent facilitative structure, positive emotionality, and triggering factors, this construct has provided valuable insights into the field of second language acquisition, albeit with some limitations in practical applicability.

In this literature review, a brief overview of dynamic systems theory will precede a more in-depth exploration of "directed motivational currents." Within the framework of dynamic systems theory, the study of DMCs adopts a non-linear approach to analyzing individual motivations, thereby opening up numerous avenues for empirical investigation. For instance, in January 2024, Chang (2024) examined the role of vision as an intervention within the context of directed motivational currents.

2. DMCs under Dynamic Systems Theory

2.1 *Dynamic Systems Theory*

Dynamic Systems Theory (DST), first proposed by Diane Larsen-Freeman in a significant article in 1997, has attracted considerable attention from researchers. It has its origins in mathematics, physics, and biology. Since the 1990s, researchers have begun to focus on second language learning from a micro perspective. Starting from the 21st century, scholars have incorporated non-linear system dynamics into the study of second language acquisition.

Under the framework of dynamic systems theory, the dynamic interaction of multiple factors gives rise to actions. In brief, it is impossible to accurately predict how a particular factor influences learners. This is due not only to the difficulty in defining the factors that affect learners but also to the interactive nature of these factors (Li, 2011; de Bot et al., 2005).

Furthermore, when Larsen-Freeman (2015) introduced dynamic systems theory. It can be observed that although students' motivations seem relatively stable over an extended period, a closer examination of a specific segment of time reveals that each curve experiences fluctuating ups and downs. This finding brought a fire-new insight into the study of second language acquisition, and dynamic systems theory rose to the occasion.

Consequently, some scholars have advocated for the study of second language acquisition under dynamic systems theory, which adopts a multi-dimensional, multi-layered, and non-linear dynamic perspective to investigate the process of language development (Zhao, Yang, 2012). The dynamic systems theory can address the deficiencies in previous studies on motivation in second language learning.

2.2 *DMCs according to Dörnyei*

Directed Motivational Currents (DMCs) were initially formulated upon the recognition that we enter a state of concentrated productivity and are able to perform tasks with a level of efficiency that far surpasses our initial expectations. The concept of directed motivation can be likened to a state of profound immersion in a task, a notion that has been well-established since Mihaly Csikszentmihalyi introduced the "flow experience" within the field of psychology back in 1975.

In the book *Directed Motivational Currents in Language Learning*, several cases are enumerated to verify the fact that there is indeed a kind of state in which people can work effectively and wholeheartedly. In 2013, Zoltán Dörnyei, a psycholinguistics professor affiliated with the School of English at the University of Nottingham in the UK, put forward the concept of DMCs. The definition according to him is given as below.

Directed motivational currents (DMCs) refers to "an intense motivational drive—or surge—which is capable of stimulating and supporting long-term behavior, such as the learning of an L2" (Dörnyei et al., 2016, p. 2).

The concept, DMCs, which refers to directed motivational currents, was officially published in Dörnyei's book *Motivational Currents in Language Learning: Frameworks for Focused Interventions*. DMCs have their roots in Dynamic Systems Theory (DST). In the construct, the modifier "directed" refers to the pathway taken by the flow of motivational energy, starting from a concrete beginning and propelling forwards toward a specific end target, which is similar to the steadfast paths of mighty ocean currents. (Dörnyei, Z., Henry, A., and Muir, C.; 2016). Nevertheless, it is distinct from the "flow experience" as described by Csikszentmihalyi in 1975.

As defined by Dörnyei et al. (2016, p. 2), Directed Motivational Currents (DMCs) are characterized as "an intense motivational drive—or surge—which is capable of inspiring and sustaining long-term behavior, such as the acquisition of a second language."

2.3 *Innovation of DMCs in Language Learning Motivation*

A DMC is regarded as the fuel for actions from the motivational perspective. To date, there is few discussions which regard motivation one part of actions. This is the innovative point of DMCs. In the field of Applied Linguistics, there are a lot of terms which give forms of individual motivation, such as 'goal', 'aspiration' and so forth. Moreover, much literature discussed that the motivational pulls of individuals are different according to different targets or goals. The above understanding of motivation segregates it from the actual actions. However, according to the book, *Motivational Currents in Language Learning*, a DMC has dual focus, one is that it focuses on the pathway towards a goal; the other is that it provides energy for action, which can be regarded to energize action. (Dörnyei, Z., Henry, A., and Muir, C., 2016)

All previous motivation theories have treated the initial energy source, often referred to as the 'motive' proper, and the actional consequence, known as the ensuing action, as two distinct entities. The unique, energizing capacity of the current sets DMCs apart from other motivational constructs. The following extract elaborates further.

“As for the L2 motivation, it is assumed that if a learner has a powerful motive to do well at school, which may stem from curiosity, interest, need, obligation, or incentive, and this motive will be reflected in his or her motivated learning behaviors and, in theory, his or her final grades. In a nutshell, within a DMC, the out working of initial motive becomes part of the energy source itself: The motivated behavior of the actor does not use up energy but, conversely, actively generates energy.” (Motivational Currents in Language Learning: Frameworks for Focused Interventions, 2016, p.xii)

In summary, the motive and the ensuing behavior constitute a unified and inseparable construct. The change in motivation is that motives are no longer perceived as solely providing energy for goal attainment.

DMCs emerged within the domain of learner motivation and is closely intertwined with the field of language learning motivation. However, it diverges significantly from other theories, as many of them predominantly concentrate on behavior in a solitary activity. Directed motivational currents illuminate intensive long-term motivation, thereby inaugurating an entirely novel area in language learning motivation. The distinguishment between directed motivational currents and other constructs in language learning motivation is that DMCs view motivation not merely as a catalyst for action but also as a self-renewing and sustainable process. (Dörnyei, Z., Henry, A., and Muir, C., 2016)

2.4 Features and Dimensions of DMCs

2.4.1 Features

Directed motivational currents possess two prominent features, namely directness and endurance. (Henry et al. 2015) Directed motivational currents elaborate the connotation of foreign language learners' conation, cognition, emotion and action, which established a framework from a holistic perspective (Chang, 2016) It is multi-dimensional. From the perspective of theoretical framework, the construct is in relation to the dimensions of conation, cognition, emotion and action, which endows it with the multi-dimensional characteristic. (Chang, 2016) It is cross-disciplinary. With regard to the theoretical underpinnings, directed motivational currents not only absorb the connotation of psychology but also incorporate concepts from geography, pedagogy, and second language acquisition, endowing it with the cross-disciplinary trait. In terms of its components, it is multi-layered. It combined the previous content in learning motivation. Criticizing the dichotomy of foreign language learning which was put forward by Gardner & Lambert (1972), Dörnyei put forward three models, which focus on layers, duration and interior of motivation.

Table 1.

Henry et al. 2015	Chang, 2016
Directness	Multi-dimensional
Enduringness	Cross-disciplinary
\	Multi-layered

2.4.2 Four Dimensions of DMCs

Henry (2015) posited that there are three dimensions within directed motivational currents, namely goal/vision-orientedness, a salient facilitative structure, and positive emotionality. Nevertheless, in certain literature, four dimensions are cited, with ownership being added. The figure below illustrates the four dimensions of DMCs.

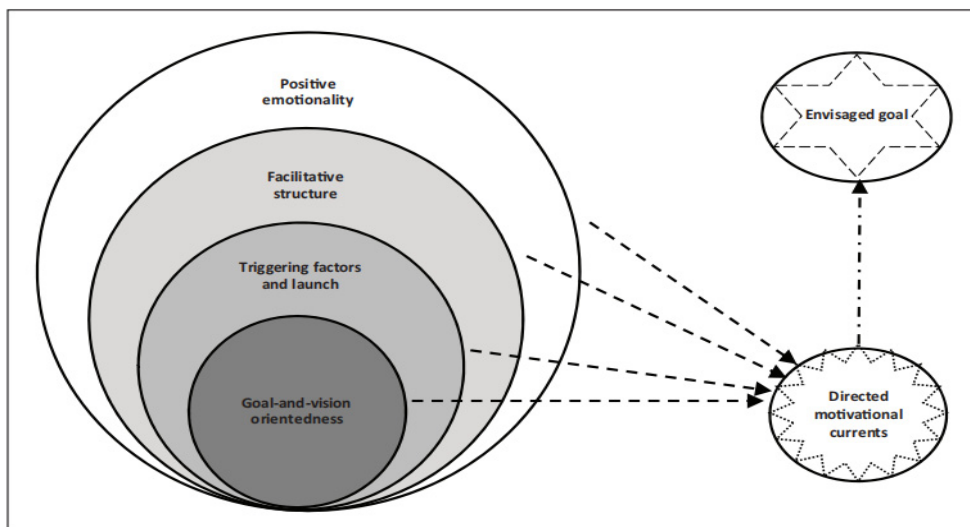


Figure 1. Dimensions of directed motivational currents

There are four dimensions of DMCs mentioned in an essay, named *What a Directed Motivational Current Is to Language Teachers*. The first is goal-and-vision orientedness. The second dimension is the launch of a triggering factor. The third is facilitative structure, and the fourth is positive emotionality. (Dörnyei et al. 2015: 98-101)

Furthermore, DMCs possess four characteristics. Firstly, during the language learning process, the motivational current trajectory of students is non-linear, dynamic, and unstable. Secondly, a DMC forms a part of self-regulation. Thirdly, DMCs stem from flow experience (Csikszentmihalyi, 1975; 1988) and share a common aspect with it. (Dörnyei et al., 2016).

3. Studies on DMCs Classified into Four Categories

3.1 *Confirming the Validity of DMCs*

The previous studies on DMCs have been predominantly empirical in nature. Henry (2015), Ibrahim (2016), Safdari and Maftoon (2017), and Chang (2017) have made significant contributions. Their primary objective was to validate this construct. Ibrahim (2016) found that second language learners do exhibit directed motivational currents in their motivational behavior. Safdari and Maftoon (2017) used retrospective interviews to analyze the motivational behavior of an Iranian adult. Their findings indicated that the characteristics of motivation corresponded with the dimensions of directed motivational currents, with goal orientation being the most prominent influencing factor. Chang (2017) investigated the motivational flow of 10 domestic English majors. It was observed that individual motivation mainly differed in goal/vision orientation and explicit facilitation structure. Yin (2018) conducted research on the trajectory of DMCs in second language writing. Ning and Cai (2019) carried out a case study of DMCs within the framework of dynamic systems theory to validate the three dimensions of DMCs. Chang (2021) found that DMC components interacted more and more along the timescales. Virtually all these empirical studies were directed towards validating the existence and significance of DMCs.

3.2 *DMCs in Pedagogy*

3.2.1 *Innovation in DMCs by Muir*

Though in the past few years, DMCs has been largely researched in the field of applied linguistics. The study of DMC in terms of the research methodology, focus and its applicability in language education is still needed. (Li, 2020) In the book *"Directed Motivational Currents and Language Education: Exploring Implications for Pedagogy"* by Christine Muir, the research on DMC has been advanced both theoretically and in application. Muir exemplifies how to utilize questionnaire-based quantitative method so as to identify language learners' DMC, which offers a powerful instrument to confirm language learners' DMC. What' more, in this book, Muir explained that how to employ intervention to trigger students' DMC. Moreover, in this book, Muir elaborates on how to use interventions to initiate students' DMC. Additionally, she demonstrates the success of the intervention with reference to the rubrics in the "All Eyes on the Final Product" framework, which is utilized to evaluate the

group DMC (Dörnyei et al., 2016).

(1) utilization of the quantitative research method on DMC, which breaks the domination of qualitative methods in this field in the past. (Li, 2020) The past qualitative studies employed retrospective interviews, for the reason that because they have the advantage of exploring under researched areas in social sciences. This method was criticized by its inability to identify DMC in the broader sense. And Muir introduced the first international questionnaire-based quantitative study.

(2) The exploration of intervention studies to initiate and sustain students' group DMC within classroom settings has been significant. The execution of an intensive group project founded on the "All Eyes on the Final Product" framework promotes group DMC. More precisely, this involves establishing a distinct end goal, furnishing feedback, and connecting the project to language studies.

3.2.2 Group DMC

In previous studies, there has been a scarcity of research on group DMC. Even fewer are the intervention studies in this regard. Although DMC is fundamentally highly individualized due to multiple personal goals and diverse learning contexts, it can manifest within a classroom among a group of language learners as a collective entity (Henry et al., 2015). To initiate group DMC, project-based instruction and various forms of group work, particularly in collaborative settings, are utilized. DMCs present pedagogical implications for teachers in maintaining suitable classroom dynamics and providing facilitative feedback.

3.2.3 DMCs to Teachers

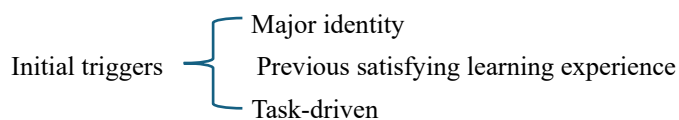
When English classes commence, teachers are required to assist students in establishing learning objectives and conation, which plays a role in arising their learning motivation. As Dörnyei and Kubanyiova pointed out, when learners have formulated a self-conation for the future, the act of learning will not be confined by the fluctuating motivation in daily life (Dörnyei & Kubanyiova 2014: 3). Ke and Lu (2022) integrated the directed motivational currents into college English writing teaching and offer the applicable suggestions to teachers. (Ke, Lu, 2022)

Significant pedagogical implications can be derived from the present work. It is recommended that language teachers and practitioners adjust their teaching plans in accordance with the distinct DMC dispositions of their students. For instance, cooperative learning might prove effective for extroverted students; however, it may not be an appropriate teaching strategy for introverted ones. Moreover, emotional support from teachers (e.g., positive feedback and encouragement) works efficiently; this could be generalized across the whole teaching process to stimulate learners' motivation and enhance their learning engagement. (Chang, Zhou; 2023) Additionally, the application of DMCs in language teaching was discussed. (Zarrinabadi & Khajeh 2023) And the application of DMCs to listening was also discussed. (Chang, Zhang Jun Lawrence, 2020)

3.3 Triggers and Mediating Forces in DMCs

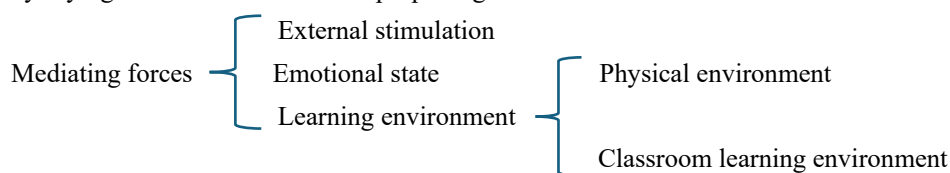
3.3.1 Initial Triggers of DMCs

In 2017, the triggers of DMCs are expectation for repay. (Chang, 2017) In the previous studies, interest, role models, and ego threat were identified as common triggers of DMCs. Additionally, new triggers are identified in the study, published in system in 2023, which are major identity and previous satisfying learning experiences. Task-driven is the most frequently referred factor. Learners' identification of their major acts as an initial impetus for motivation, which is in line with notion that individual DMCs are rooted in highly identity-relevant. (Dornyei et al., 2016; García-Pinar, 2020; Henry et al., 2015) The previous satisfying learning experience is one of triggers in DMCs shed light on the significance of positive emotionality. (Liu & Song, 2021) Be in line with goal/vision-orientation, external tasks contributed to the occurrence of DMCs, for example, IELTS, TEM4, CET-4, CATTI2; In addition, the intensify of task-driven DMCs increases with time, and it will reach a climax when a few weeks left. (Chang, Zhou; 2023)



3.3.2 Mediating Forces of DMCs

Chang found atmosphere in campus and pedagogy in class are two forces in forming DMCs. (Chang, 2017) In 2023, based on the Ken-Q analysis results, the intensify of DMCs fluctuated day by day. The three-factor approach (external stimulation, emotional state, learning environment) is verified to be the best solution to adjust DMCs. Coming across with challenges seems to increase the motivation for learners rather than dampen their enthusiasm. (Chang, Zhou; 2023) Introverted language learners were more susceptible to their emotional state and are hardly influenced by outside learning environment. The emotional state and inner world outweigh the environment, playing as important mediators to introverted learners' EFL development. As for learning environment, physical environment and classroom learning environment are mentioned. Field dependence is a mediating force related to DMCs, which is line with the previous discussion with Chang, P. (2019) Self-regulation is pivotal in keeping intense motivation, which is contrary to the finding from Henry et al. (2015) by saying DMC actions were self-propelling.



3.4 DMCs Related with Other Concepts



The research of DMCs relating to other factors are self-concept, autonomy and vision. In 2019, the study carried by Fu Pei uses the longitudinal data of three non-English major college students to analyze the development of their self-concept of spoken English learning, which shows that, vision, “implicit” behavior routines, progress check and positive emotionality are important in promoting their self-concept. A positive self-concept may further promote the continuous development of DMCs, forming a virtuous circle. For instance, during the process of a student participating in project-based language learning tasks (which are related to the stimulation of DMCs), as his or her language ability gradually improves and the tasks progress smoothly, he or she will develop a more positive perception of his or her own oral English ability. And this positive self-concept will, in turn, enhance the intensity of the motivational current in subsequent language learning activities.

Otherwise, research was carried out to find out the effects on self. (Zarrinabadi et al. 2019) Except that, the longitudinal case study carried out by Chang aims to promote five college students English learning motivation with vision intervention under the framework of Directed Motivational Current(s). Vision is counterbalanced by too high goals that devalue future expectancy and too low goals that fail to generate driving force, thus leading to the disruption of motivational current. (Chang, 2024)

4. Critiques of DMCs

Though directed motivational currents offer a total fire-new insight in language learning motivation, there still exist many drawbacks and limitations when applying into practice. The previous literature which discussed about it only provides us the introduction of its theoretical background and theoretical framework. How we put it into practice is still unsolved. As I mentioned above, it is multi-dimensional, cross-disciplinary and multi-layered, which implies that it is difficult to figure out how the factors effect on and relate to each other. What's more, the construct, directed motivational currents overly underline the subjective role of foreign language learner and neglect the role of other objective factors. (Chang, 2016) The empirical research is still domestically in need. (Chang, 2016, 2017; Wang, 2016) Most studies research on DMCs theoretically. (Chang, Zhao, 2023)

The latest research gives results of the initial triggers and pivotal mediating forces of DMCs through a combination of Q methodology and retrodictive qualitative interviews with 123 EFL learners. “major identity”, “previous satisfying learning experiences”, and being “task-driven” served as three important initial triggers of learners' DMCs. Otherwise, “external stimulation”, “emotional state” and “learning environment” were the pivotal mediating forces contributing to day-to-day motivation fluctuations in learners' DMCs experiences.

Up till now, the comprehensive and fundamental understanding of DMCs is not be fully established, especially about their influential factors.

5. Conclusion

As analyzed above, this article reviews the introduction of DMCs and the research based on it over time. Four dimensions and its multi-dimensional, multi-layered and cross-disciplinary characteristics are also elaborated. Under dynamic systems theory, this non-linear and dynamic construct offer bright insight in second language acquisition. The previous studies on “directed motivational currents” are mainly from four veins, as classified in this article. First, confirmatory studies related to DMCs aim to assess the validity of DMCs as a theoretical construct in various contexts. Second, the effect of DMCs on second language acquisition. To be more specific, listening, writing and spoken English are involved. Some feasible suggestions for teaching are also given, especially in group DMCs, such as setting a goal before teaching and conducting progress check. Third, intervention studies which aim to facilitate learners’ DMCs so as to promote their language learning proficiency. It not only sheds light on the field of motivation but also offer new insights to classroom practitioners. It was significant for the intervention in authentic education. In the latest research, triggers and mediating forces of DMCs are unveiled by Chang (2023) from Chongqing University. Fourth, the studies related with other concepts emerge from 2019 till now, including the relationship with self-concept, vision and so forth.

Additionally, Directed Motivational Currents (DMCs) offers rich and valuable implications for second language teaching. By adjusting teaching plans according to students’ DMC dispositions, selecting appropriate teaching strategies, creating a favorable learning environment and providing effective emotional support, teachers can better stimulate and guide students’ learning motivation and promote the effective improvement of their second language proficiency. In future second language teaching practice, educators should conduct in-depth research on and apply the DMCs theory. They should continuously explore and innovate teaching methods and means so as to meet students’ increasingly diverse learning needs and lay a solid foundation for cultivating second language learners with high-level language abilities and strong learning motivation. In a nutshell, the introduction of DMCs under dynamic systems theory brings much inspiring research and provides implication to teaching in the field of L2 acquisition.

References

- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco, CA: Jossey-Bass.
- Chang, Haichao. (2016). Directed Motivational Currents: New Developments in Second Language Motivation Theory Research. *Modern Foreign Languages*, 39(5), 704-713+731.
- Chang, Haichao. (2017). A Qualitative Investigation into the Changing Mechanism of English Majors’ Learning Motivation: Based on the Theory of Directed Motivational Currents. *Foreign Language World*, (3), 39-47.
- Chang, Pengyun, & ZHANG Jun Lawrence. (2020). A Micro-Change Study of Directed Motivational Currents in College Students’ English Listening. *Modern Foreign Languages*, 43(2), 200-212.
- Chang, P., & Zhou, L. (2023). Pinpointing the pivotal mediating forces of directed motivational currents (DMCs): Evidence from the Q methodology. *System*, 117, 103095. <https://doi.org/10.1016/j.system.2023.103095>
- Chang, Haichao. (2024). A Vision-Driven Intervention Study on College Students’ English Learning Motivation under the Framework of Motivational Currents. *Modern Foreign Languages [J/OL]*, 1-12 [2024-01-14]. <https://doi.org/10.20071/j.cnki.xdwy.20240010.004>
- Dörnyei, Z., & M. Kubanyiova. (2014). *Motivating Learners, Motivating Teachers: Building Vision in the Language Classroom* [M]. Cambridge: Cambridge University Press
- Dai, Yuncai, & Zhou Lin. (2016). Second Language Acquisition Research from the Perspective of Dynamic Systems Theory: Deficiencies and Countermeasures. *Foreign Language World*, (3), 57-63+96.
- Dörnyei, Z. (2019). From integrative motivation to directed motivational currents: The evolution of the understanding of L2 motivation over three decades. *The Palgrave handbook of motivation for language learning*, 39-69. https://doi.org/10.1007/978-3-030-28380-3_3
- Fu, Bei. (2019). The Development and Change of Self-Concept in Oral English Learning from the Perspective of Directed Motivational Currents: A Longitudinal Case Study of Non-English Major College Students. *Foreign Language World*, (4), 50-57.
- Henry, A., Davydenko, S., & Dörnyei, Z. (2015). The anatomy of Directed Motivational Currents: Exploring intense and enduring periods of L2 motivation. *Modern Language Journal*, 99, 329-345. <https://doi.org/10.1111/modl.12214>

- Ke, Yue, & Lu Xiangpeng. (2022). A Preliminary Exploration on the Application of Directed Motivational Currents Theory in College English Writing Teaching. *Modern English*, (7), 13-16.
- Li, Lanxia. (2011). Dynamic Systems Theory and Second Language Development. *Foreign Language Teaching and Research*, 43(3), 409-421+480-481.
- Ning, Jiangeng, & Cai Jinting. (2019). A Case Study of Directed Motivational Currents from the Perspective of Dynamic Systems Theory. *Foreign Language Teaching*, 40(3), 69-75. <https://doi.org/10.16362/j.cnki.cn61-1023/h.2019.03.012>
- Wang, Zheng. (2016). Basic Understanding, Methods and Theoretical Applications of Second Language Motivation Research in China: Problems and Suggestions. *Foreign Language World*, (3), 64-71.
- Wang, Xiaolu, Yang Lianrui, & Yan Haijuan. (2017). A Study on Directed Motivational Currents in Second Language Learning from the Perspective of Dynamic Systems Theory. *Contemporary Foreign Language Studies*, (4), 49-54+110.
- Zarrinabadi, N., Ketabi, S., & Tavakoli, M. (2019). *Directed motivational currents in L2* (pp. 33-47). Cham, Switzerland: Springer. <https://doi.org/10.1007/978-3-030-05472-4>
- Zarrinabadi, N., & Khajeh, F. (2023). Describing characteristics of group-level directed motivational currents in EFL contexts. *Current Psychology*, 42(2). <https://doi.org/10.1007/s12144-021-01518-9>

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