

Psychological Resilience in the Interaction of L2 Willingness to Communicate and Foreign Language Anxiety: The Three Time Scales Model

第二言語 WTC と外国語学習不安の相互作用における心理的レジリエンス — 3つの時間尺度モデル —

Tokuji NORO *

野 呂 徳 治 *

Abstract

The present study investigated psychological resilience in the context of L2 learning and use, referring to the DS theory for the theoretical rationale. The interactive fluctuation and patterning of L2WTC and FLA were examined as the target locus for L2 resilience. Seven Japanese university students who had participated in study-abroad programs in English-speaking countries for nine to ten months were interviewed. For data collection and analysis, the three time scales model developed by Lewis (2000) was employed to delineate and explicate the emergence and development of L2 resilience. As a result of the content analysis of the interview data, distinct characteristics and processes of the L2WTC–FLA interaction were extracted in each of the three time scales of *microdevelopment*, *mesodevelopment*, and *macrodevelopment*, while L2 resilience was also observed emerging and developing in a manner peculiar to each time scale. The major antecedent causal factors of L2 resilience were success in L2 communication and interest in topics in the microdevelopment scale; enjoyment in L2 communication and active involvement in activities in the mesodevelopment scale; and adaptation to new life, anchorage in daily life, and lasting human relationships in the macrodevelopment scale. As the factors seen in common to all three time scales were gratitude and a strong sense of purpose. As an implication for future research, the issue of educational intervention to foster L2 resilience was pointed to, with the three ways to foster resilience in language learning suggested by Oxford (2016) as examples.

Key words : psychological resilience, second language willingness to communicate (L2WTC), foreign language anxiety (FLA), dynamic systems (DS) theory, three time scales

1. Introduction

It is generally acknowledged that second language (L2) learners, with their insufficient language knowledge and limited control of it, are vulnerable beings in the face of difficulties of language learning and use, and cannot get away from experiencing negative emotions like anxiety, self-doubt, and disappointment in the process of L2 learning and use. In fact, it seems like inevitable destiny that awaits those who have set foot on the journey of L2 learning. We also notice, however, that during the journey there is variation among learners as to the extent of this vulnerability; that is, some learners experience rather severe emotional damages and distress from their failures, while others seem to get over the setbacks with no trouble at all as if they instinctively knew how to deal with such difficulties. What bears direct relevance to this difference in vulnerability among L2 learners is

* Department of English, Faculty of Education, Hirosaki University

* 弘前大学教育学部英語教育講座

psychological resilience, or the ability to withstand difficulties and bounce back.

Research on psychological resilience began in developmental psychology in the 1970s and 80s with investigation into children raised in the adverse circumstances for the origins of mental illness and behavioral problems (Masten, Best, & Garmezy, 1990, as cited by Hiver & Solarte, 2021). Those children in the face of extreme adversity were expected to be overwhelmed by their extreme physical, emotional, and psychological deprivation. On the contrary, it was revealed that many of them were actually thriving, leading to further investigation into the effects of resilience on human development. The increasing interests and expectations expressed in the investigation into psychological resilience in L2 learning and use in recent years represent this same research agenda. In other words, it is the possible domain-specificity of psychological resilience that inspires the academic endeavor to explicate its involvement in the varying degrees of vulnerability observed among L2 learners in the face of difficulties and its possible effects on their L2 mastery and performance.

Another takeout from the research on general psychological resilience will be the kind of approach taken in many of its research designs. Resilience is often conceptualized as a function of the individuals in dynamic interaction with their environment, providing rich possibilities for research from the dynamic systems (DS) perspective. From the DS perspective, resilience can be seen as an adaptive developmental process “involving a dynamic interaction of psychological and social factors in particular environments, thereby enabling individuals to successfully resolve or adapt to risks and threats” (Wright, Masten, & Narayan, 2013, as cited by Hiver & Solarte, 2021). The DS approach to general resilience will be relevant and equally applicable in the resilience research in L2 learning and use as the need for more context-dependent and idiosyncratic explanations of L2 learner development increases.

The present study investigates psychological resilience in L2 learning and use (L2 resilience). It specifically aims to explicate the emergence and development of L2 resilience, addressing the interaction between L2 learners’ willingness to communicate (L2WTC) and foreign language anxiety (FLA) as the target locus for L2 resilience. L2WTC and FLA are known to directly influence L2 learning and use, with the former considered mostly as facilitating the process while the latter predominantly debilitating it. The two constructs, however, do not “stand alone”; they should rather be seen as mutually interacting and fluctuating while influencing the process of L2 learning and use. In the present study the interaction between L2WTC and FLA is considered as a self-organizing process in L2 learning and use. Following the DS theory, the present author conceptualized the interactive fluctuation of L2WTC and FLA as “phase transition” of an “attractor” or a relatively stable state that a dynamic system can take at any given time during its self-organizing process (Noro, 2016). This L2WTC–FLA attractor can be explained in terms of the DS theory as going through “perturbation” moving “the system out of its current attractor,” so that “it may settle into a new attractor” (Keating & Miller, 2000). The emergence and development of L2 resilience are to be delineated to explicate the L2 resilience involvement in this phase transition of the L2WTC–FLA attractor.

In so doing, the present study looks to the three time scales model which Lewis (2000) proposed to explain emotional development: moment-to-moment emotional fluctuation or *microdevelopment*; hourly, daily to weekly mood change or *mesodevelopment*; and longer-term, monthly to yearly personality structuring or *macrodevelopment*. As elaborated below, the model hypothesizes the distinct but mutually related psychological mechanisms of emotional development for each time scale. The present author examined the model by qualitatively analyzing the empirical data he gathered to consider its applicability to the phase transition of the L2WTC–FLA attractor (Noro, 2020). The model was judged to fit the trajectories of its interactive fluctuation and patterning. Thus, it is expected that the model will work for L2 resilience as well.

2. Background

2.1 Conceptualizing L2 resilience

Psychological resilience is seen from the two dimensions by definition; first, it entails some kind of difficulty or adversity to struggle against, and secondly, it involves adapting to and bouncing back from it. Thus, one cannot be considered as resilient unless he or she first experiences difficulty or adversity. The second dimension of resilience is also seen as twofold: adaptation or the “*sustaining*” aspect of resilience”, and bouncing back from the adverse or the “*recovery*” aspect of resilience” (Luthar, Chicchetti, & Becker, 2000, and Windle, 2011, as cited by Hiver & Solarte, 2021). This understanding of resilience equally applies to L2 resilience. As mentioned above, the process of L2 learning and use sees the continued experience of failure and distress, leading to disappointment and self-doubt. Thus, it becomes crucial for learners if they can “sustain” their motivation and positive attitudes toward L2 learning and “recover” from their difficulties and failures.

As domain-specific exploration of psychological resilience, research on L2 resilience is proliferating in recent years, with its conceptualizations and definitions provided in its own right. Reviewing L2 resilience research, Hiver and Solarte (2021) point to multidimensionality of L2 resilience, referring to the individual learner factors, teacher characteristics and teaching practices in the L2 classroom, and the contexts of instruction and social environments as involved in it. All these specific factors or “dimensions” contribute to making L2 resilience unique and distinct, leading to domain-specific exploration of L2 resilience.

In the present study, L2WTC and FLA are considered as the major dimensions which directly affect the emergence and development of L2 resilience. As the L2 learner experiences the fluctuations of L2WTC and FLA in the process of L2 learning and use, the learner’s L2WTC and FLA are seen as possibly interacting with each other, which, in terms of the DS theory, is explained as the attractor going through phase transition (Noro, 2016). Thus, the emergence and development of L2 resilience as a dynamic adaptive and recovery process in the face of difficulties of L2 learning and use are conceptualized as interacting with this very phase transition of the L2WTC–FLA attractor while playing a critical role in mediating it. In other words, the variation of L2 learner vulnerability is expected to be explained in terms of how L2 resilience is involved and represented in the interactive fluctuation of L2WTC and FLA.

2.2 The three time scales model of emotional development

Investigating L2 resilience interacting with the L2WTC–FLA attractor phase transition and mediating it, the present study employs the three time scales model which Lewis (2000) proposed to explain emotional development: moment-to-moment emotional fluctuation (microdevelopment); hourly, daily to weekly mood change (mesodevelopment); and longer-term, monthly to yearly personality structuring (macrodevelopment).

Table 1

Three scales of emotional self-organization

Developmental scale	Microdevelopment	Mesodevelopment	Macrodevelopment
Duration	Seconds-minutes	Hours-days	Months-years
Emotional development	Emotional interpretation	Mood forging	Personality shaping
Description	Rapid convergence of cognitive interpretation with emotional state	Lasting entrainment of interpretive bias with narrow emotional range	Lasting interpretive-emotional habits specific to classes of situations
Dynamic systems formalism	Attractor	Temporary modification of state space	Permanent structure of state space
Psychological mechanism	Cognition-emotion coupling or resonance, successful goal-directed action	Cognition-emotion coupling, goal preoccupation, inhibited or unsuccessful action	Cognition-emotion complementarities that arise from and constrain coupling in emotional interpretations and moods

Note. Adapted from “Emotional Self-Organization at Three Time Scales,” by M. D. Lewis, 2000, *Emotion, Development, and Self-Organization: Dynamic Systems Approaches to Emotional Development*, by M. D. Lewis and I. Granic (Eds.), p. 59.

Table 1 shows some of the characteristics that Lewis (2000) hypothesizes for emotional self-organization in each of the three scales. As the table shows, microdevelopment concerns emotional interpretations, and mesodevelopment pertains to mood forging, whereas macrodevelopment is involved in personality shaping. As the description of each time scale, microdevelopment naturally will take on more frequent, momentary changes of emotional states, while mesodevelopment and macrodevelopment show lasting mood and stable personality respectively, which is also represented by the dynamic systems formalism of each time scale; microdevelopment is seen as an attractor, while mesodevelopment and macrodevelopment are considered temporary modification of *state space* and permanent structure of *state space* respectively. *State space* is where attractors are located and surrounded by “regions of states that gravitate to the attractor” (Lewis & Granic, 2000, p. 9), naturally taking on more stable formation than attractors do.

As for the psychological mechanism of microdevelopment, cognition–emotion coupling or resonance is supposed to lead to goal-directed action tendencies, causing emotional interpretations. In mesodevelopment, however, the cognition–emotion coupling may lead to prolonged goal preoccupation, because those goals unattained keep the action tendencies, which narrows the emotional range with certain biased interpretations and causes rather lasting moods. In macrodevelopment, cognition and emotion are supposed to complement each other with certain interpretive-emotional habits specific to situations through repeatedly experiencing emotional interpretations and rather lasting moods, leading to personality structuring.

The present author applied this three time scales model to his endeavor to explicate the interactive fluctuation and patterning of L2WTC–FLA. The model proved not only providing relevant and valid scales to investigate the L2WTC–FLA interaction in the temporal perspective but also instrumental in explaining its interactive fluctuation and overall L2-related emotional development (Noro, 2020). Thus, it is expected that the model will contribute to the explication of the emergence and development of L2 resilience.

3. The Study

3.1 Research questions

The present study aims to explicate the emergence and development of L2 resilience. It specifically addresses the following two research questions:

- 1) How are the interactive fluctuation and patterning of L2WTC and FLA represented over different time periods?
- 2) How is L2 resilience involved in the L2WTC–FLA interaction?

3.2 Participants

Seven Japanese university students who had participated in study-abroad programs in English-speaking countries for nine to ten months were interviewed.

3.3 Data collection

The participants were asked to retrospect and describe their unforgettable L2 communication experiences in as much detail as possible in terms of the following three viewpoints:

- 1) How they succeeded or failed in overcoming the communication difficulties that they were faced with
- 2) How their L2WTC and FLA fluctuated accordingly over the time period corresponding to each of the three time scales
- 3) How they bounced back from the negative attitudes that they experienced, if any, through their L2WTC–FLA fluctuations over the time periods corresponding to the three time scales

3.4 Data analysis

The verbal data obtained in the semi-structured interviews were qualitatively analyzed to trace and illustrate the interactive fluctuation and patterning of L2WTC and FLA, and the involvement of psychological resilience in them, following the three time scales model.

4. Results and Discussion

4.1 Interactive fluctuation and patterning of L2WTC and FLA

As a result of the content analysis of the interview data, distinct characteristics and processes of the L2WTC–FLA interaction were extracted in each of the three time scales, as summarized in the column of “L2WTC–FLA fluctuation/patterning” in Table 2, which describes the three scales of the L2WTC–FLA fluctuation and patterning, and the emergence and development of L2 resilience. The microdevelopment of the L2WTC–FLA interaction most likely goes through frequent and wide-ranging fluctuations. As observed in the preliminary study of the L2WTC–FLA interaction (Noro, 2020), the common emotional experiences, such as enjoyment and satisfaction in successful L2 use, and frustration and disappointment in failed situations, are surmised to be the major causes for the fluctuations. In the DS terms, these emotional experiences which are appraised in the emotional interpretations in the microdevelopment scale perturb the L2WTC–FLA attractor to move out to another stable state, causing its attractor phase transition.

The scale of mesodevelopment is conceptualized as an intermediate scale linking microdevelopment and macrodevelopment (Lewis, 2000). As elaborated above, mesodevelopment is involved in forging moods that last for hours to days. According to Lewis’s theorization, moods last because certain intentions or goals remain unattained, with intentional orientations lingering on. Thus, mostly negative types of moods are seen in this scale, which is supported by the interview data as well. The L2WTC–FLA interaction in this scale shows less frequent and narrower-ranging fluctuation, with rather negative moods forged by the participants’ discouraging L2 experiences like unsuccessful communication or maladjustment to the host cultures. It should be noted, however, that some participants had positive types of moods, like eagerness or satisfaction, prevail in them, with the state space for the L2WTC–FLA attractor modified to be fit for L2 learning and use.

The macrodevelopment of the L2WTC–FLA interaction can be characterized by stabler and more orderly patterning, which corresponds to more or less the participants’ accommodation processes in the new linguistic/cultural contexts. Their L2WTC–FLA interaction most typically showed a gradual increase in L2WTC in contrast with a decrease in FLA, contributing to shaping of a more positive attitude toward L2 learning and use. It is equally possible, however, that in some unfortunate cases the L2WTC–FLA interaction may take patterns of an avoidance tendency toward L2.

Table 2

Three scales of the L2WTC–FLA fluctuation and patterning, and the emergence and development of L2 resilience

Developmental scale	Microdevelopment	Mesodevelopment	Macrodevelopment
L2WTC–FLA fluctuation/patterning	Frequent, wide-ranging	Less frequent, narrower-ranging	Stabler, more orderly
Emergence/development of L2 resilience	Success in L2 communication Interest in topics Gratitude to interlocutors Strong sense of purpose in L2 learning	Enjoyment in L2 communication Active involvement in activities Gratitude to people around Strong sense of purpose in L2 learning	Adaptation to new life Anchorage in daily life Lasting human relationships Gratitude to close people Strong sense of purpose in L2 learning

4.2 Emergence and development of L2 resilience in the L2WTC–FLA interaction

As with the interactive fluctuation and patterning of L2WTC and FLA, L2 resilience was also observed emerging and developing in a manner peculiar to each time scale. The major antecedent causal factors are listed up in the column of “Emergence/development of L2 resilience” in Table 2. The causal factors typically observed in the microdevelopment scale include success in communication, interest in topics, and gratitude to interlocutors. The positive L2WTC–FLA interactive fluctuation can be explained as L2 resilience perturbing the L2WTC–FLA attractor in L2 failure to cause its attractor phase transition to the approach tendency toward L2 learning and use.

In the mesodevelopment scale, enjoyment in L2 communication, active involvement in activities, and gratitude to close people are among the most prominent antecedent causal factors of L2 resilience. The L2WTC–FLA interaction tends to be of a rather negative nature and keep its state space, forging rather negative lasting moods. Successful emergence of L2 resilience, however, enables the modification of the state space for the L2WTC–FLA attractor, molding positive moods.

L2 resilience involved in the macrodevelopment of the L2WTC–FLA interaction is enhanced by adaptation to a new life, anchorage in a daily life, lasting human relationships, and gratitude to close people as the major antecedent causal factors. Compared to the microdevelopment and mesodevelopment of L2 resilience, the emergence and development of L2 resilience and L2WTC–FLA interaction in the macrodevelopment scale were more evidently observed mutually influencing each other. Thus, it is most likely that enhanced L2 resilience will lead to increased L2WTC and decreased FLA in the most typical case, and vice versa. Therefore, in the DS terms, it should be reasonable to conclude that L2 resilience constitutes an attractor in its own right and that it belongs in the same space state as the L2WTC–FLA attractor and contributes to the permanent structuring of the state space.

Among the major antecedent causal factors of L2 resilience listed in Table 2, gratitude and a strong sense of purpose are observed in common to all three time scales. As for gratitude, the target person is slightly different in each time scale, but the existence of the person means so much to the learner in each of his or her contexts. In other words, these persons are all “significant others” (family members, peers, teachers, mentors, etc.) who play the central role in developing resilience (Hiver & Solarte, 2021), and their “significance” is the same in L2 learning and use. The other factor, a strong sense of purpose, may be more pertinent to resilience in the context of learning like L2 resilience than to general psychological resilience. Hiver and Solarte (2021) argue that “resilient learners draw on a clear sense of purpose, are goal-oriented and autonomous”, which literally echoes this factor.

5. Conclusion

The present study investigated psychological resilience in the context of L2 learning and use, referring to the DS theory for the theoretical rational. The interactive fluctuation and patterning of L2WTC and FLA were examined as the target locus for L2 resilience. For data collection and analysis, the three time scales model developed by Lewis (2000) was employed to delineate and explicate the emergence and development of L2 resilience. The content analysis of the interview data revealed that the microdevelopment of the L2WTC–FLA interaction most likely goes through frequent and wide-ranging fluctuations, with the major antecedent causal factors including success in L2 communication and interest in topics. In the mesodevelopment, the L2WTC–FLA interaction shows less frequent and narrower-ranging fluctuations, in which the positive moods toward L2 learning and use are maintained by enjoyment in L2 communication and active involvement in activities, while the macrodevelopment of the L2WTC–FLA interaction can be characterized by stabler and more orderly patterning, with adaptation to a new life, anchorage in a daily life, and lasting human relationships as prominent causal factors. The other major antecedent causal factors observed in common to all three time

scales are gratitude and a strong sense of purpose in L2 learning, with the former most likely relating to the role played by “significant others” such as family members and friends, and the latter representing being goal-oriented and autonomous in L2 learning and use.

As an implication for future research, the issue of educational intervention to foster L2 resilience should be of primary importance. Referring to Masten, Cutuli, Herbers, and Reed (2011), Oxford (2016) suggests three ways to foster resilience in language learning as follows:

- (a) providing assets, which in our field might be language books, computers, materials, interesting and exciting lessons, and opportunities to use the language; (b) mobilizing protective factors, such as attachment relationships with language teachers or mastery experiences that increase language learners’ self-efficacy; and (c) removing or reducing risks, such as embarrassment or failure for language learners, but without reducing an appropriate sense of classroom challenge (Oxford, 2016, p. 30).

The ways she suggests may sound nothing special in terms of enhancing learners’ motivation and improving the quality of educational practice in language classrooms, but when we look at them from the viewpoint of fostering L2 resilience in the L2WTC–FLA interaction, they should all have new meanings and approaches.

Acknowledgement

This work was supported by JSPS KAKENHI Grant Number JP19K00874.

References

- Hiver, P., & Solarte, A. C. S. (2021). Resilience in psychology. *The Routledge handbook of the psychology of language learning and teaching*. Routledge.
- Keating, D., and Miller, F. K. (2000). The dynamics of emotional development: Models, metaphors, and methods. In M. D. Lewis & I. Granic (Eds.), *Emotion, development, and self-organization: Dynamic systems approaches to emotional development* (pp. 372–392). Cambridge University Press.
- Lewis, M. D. (2000). Emotional self-organization at three time scales. In M. D. Lewis & I. Granic (Eds.), *Emotion, development, and self-organization: Dynamic systems approaches to emotional development* (pp. 37–69). Cambridge University Press.
- Lewis, M. D., & Granic, I. (2000). *Emotion, development, and self-organization: Dynamic systems approaches to emotional development*. Cambridge University Press.
- Luthar, S. S., Chiccetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71 (3), 543–562. <https://doi.org/10.1111/1467-8624.00164>
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and psychopathology*, 2 (4), 425–444. <https://doi.org/10.1017/S0954579400005812>
- Masten, A. S., Cutuli, J. J., Herbers, J. E., & Reed, M. G. J. (2011). Resilience in development. In S. J. Lopez, & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (2nd ed., pp.117–131). Oxford University Press.
- Noro, T. (2016). A dynamic systems approach to the interaction between WTC and anxiety in L2 oral communication, *Bulletin of the Faculty of Education, Hirosaki University*, 116, 89–95. <http://hdl.handle.net/10129/6239>
- Noro, T. (2020). Interactive patterning of L2 willingness to communicate and foreign language anxiety: The three time scales to examine emotional development, *Bulletin of the Faculty of Education, Hirosaki University*, 123, 149–157. <http://hdl.handle.net/10129/00007012>
- Oxford, R. L. (2016). Toward a psychology of well-being for language learners: The ‘EMPATHICS’ vision. In

- P. D. MacIntyre, T. Gregersen, & S. Mercer (Eds.), *Positive psychology in SLA* (pp.10–87). Multilingual Matters.
- Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology*, 21(2), 152–169. <https://doi.org/10.1017/S0959259810000420>
- Wright, M. O., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R.B. Brooks (Eds.), *Handbook of resilience in children* (2nd ed., pp. 15–37). Springer.

(Accepted on September 2, 2022)