An Exploration of One Learner's Affective Experiences
from a Dynamic Perspective

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Abstract

This paper examines the perceptions of one Chinese learner of English at a university. From a Dynamic System Theory (DST) perspective, the learner's perceptions, affective experiences and classroom learning will be explored by identifying the non-linear relationships between them. This paper aims to investigate the relationship between the learner's perceived affective experiences and her self-reported performances in a foreign language classroom. The learner is a second-year university student from a foreign language university in China. Diary, questionnaire, semi-structured interview, and class observation were applied to investigate this 6-month longitudinal study. Emotional ambivalence including several different affective patterns and four attractor states, namely, Integrative Disposition, Self-esteem, External Incentives and Autonomy were identified.

Keywords: Foreign Language Acquisition (FLA), Dynamic System Theory (DST), Affective Experiences, Non-linear Relationship

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Introduction

In terms of the motivational and affective aspects in Foreign Language Acquisition (FLA) studies, currently, most studies tended to provide evidence to support the potential linear relationship between the target emotion, such as anxiety and one aspect of language learning, such as L2 speaking (Chen & Lee, 2011). However, it is possible that similar speaking performances amongst the learners may result from different patterns of affective change other than only one emotion. This assumption can be linked to Dörnyei's (2010) reconceptualization of Individual Differences. "… even people with outwardly similar ID patterns can travel very different paths as a result of some difference in a personality constituent that is seemingly irrelevant or of secondary importance"(Dörnyei, 2010, p.262). Therefore, it can be more fruitful if the combinations of different emotions were studied as a whole and from a more open non-linear relationship mapping angle to identify their potential changes over time and their impact on the learner's self-reported performances.

The purpose of this case study is to investigate the nonlinear dynamic relationship between the learner's perceived affective experiences and self-reported performances. It is important to obtain a fuller understanding of the dynamism of the learner's emotional and motivational change through learning. The traditional "Variable" identification, which implied a causal link in the first instance, may not be adequate enough to theorise such dynamism (Dörnyei, 2009; Larsen-Freeman, 2006). Therefore, Dynamic System Theory (DST) was applied as a new paradigm to study the nonlinear relationship between motivation, emotions and performances.

Dynamic System Theory (DST)

Meiss (2007) defined DST as "a trajectory as a function of a single parameter (time) on a set of states (the phase space) is a dynamical system" (p. 105). DST was originally a branch of theoretical mechanics, which was originally designed to mimic the dynamic system. Subsequently, DST developed as a mathematical tool for the analysis of a number of issues, for example, the trajectory of the moon under the influence of the sun, the earth and other planets. In the realistic world, there was a system for each level (de Bot, 1996). Therefore, DST has been adapted and used in different disciplines, from economics to infectious diseases; from meteorology to the solution of practical problems, such as heart rate control, and oil drilling. Although DST was a relatively new theory (van Geert & Steenbeek, 2005), it remained attractive and made more researchers to begin working from a dynamic perspective.

Application of DST in FLA

More scholars tended to apply DST into FLA researches, because of DST's unique characteristics, for example, self-organization and non-linear, which might fulfill the isolation gaps being revealed from the traditional research. Several examples can

support this trend. For example, Larsen-Freeman (2012) argued that DST was a new transdisciplinary theme for FLA. The most important researchers applying DST to FLA included 'Five Graces Group'[1], Larsen-Freeman, de Bot, Herdina and Jessner, van Geert and Dörnyei. These researchers have shifted from studying discrete factors to studying the whole from moment to moment. Traditional linear studies have revealed the inadequacy of studying the change and individual complexity. For example, Dörnyei (2010) argued that sometimes a seemingly irrelevant tiny difference between learners can lead to a huge difference in their path selection, though they may have very similar ID patterns. Therefore, researchers start to study the combination of traits instead of isolating discrete factors.

Research Questions

From a dynamic perspective, what is the relationship between the learner's perceived affective experiences and her self-reported performances in a foreign language classroom?

Phenomenographic Approach to This Case Study

The aim of the current study is to investigate the relationship between the learner's perceived affective experiences and her self-reported performances in a foreign language classroom from a DST perspective. For this purpose, phenomenography, developed by Ference Marton (1981) was employed as a qualitative research theoretical framework for this study. Phenomenography is "the empirical study of the qualitatively different ways in which a phenomenon can be experienced, perceived, apprehended, understood, conceptualized" (Marton, 1994).

The rationale to choose phenomenography as research methodology is that the ultimate goal of phenomenography is to explore the perceptions individuals hold regarding a given phenomenon through different timescales (Marton, 1981). In addition, the current phenomenographic study adopts a second-order perspective to identify how the learners conceive their world rather than a first-order perspective. The definition and measurement of affective experiences are in accordance with componential theory from a DST perspective.

Research Design

Methods. Four tools were employed for data collection: Diary, Questionnaire, Semi-structured Interview, and Class Observation. This applied to the first procedure of triangulation to validate phenomenographic data. To be specific, 6 months with an interval of 2 months was covered for this longitudinal study. The data collection was

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[1] Authors of the "Five Graces Group" : Clay Beckner, *University of New Mexico*; Nick C. Ellis, *University of Michigan*; Richard Blythe, *University of Edinburgh*; John Holland, *Santa Fe Institute*; Joan Bybee, *University of New Mexico*; Jinyun Ke, *University of Michigan*; Morten H. Christiansen, *Cornell University*; Diane Larsen-Freeman, *University of Michigan*; William Croft, *University of New Mexico*; Tom Schoenemann, *Indiana University*

in learner's first language, Chinese Mandarin in order "not to let the lack of L2 proficiency affect the participants' expressiveness" (Zheng 2012, p. 87). The data was then transcribed and translated into English.

First three tools had different emphasis points. To be specific, diary entries were designed for keeping records of her affective experiences. The learner was asked to keep diaries every week. She could write almost anything relating to her affective experiences. These notes could be irrelevant to FLA teaching and learning activities. Questionnaires were designed to obtain the learner's learning and performances. Interviews were designed according to Mercer's (2012) interpersonal and intrapersonal concept, aiming to integrate her perceived affective experiences and self-reported performances.

In this study, the learner was studied over 18 weeks (equals to 6 months with an interval of 2 months) from 28 April to 27 June (9 weeks) and from 1 September to 31 October (9 weeks). The reason for the selection of the above two periods of time is that, in the selected university, this period covers 7 regular tests (twice a month), 2 big exams (one final and one mid-term exam) and one English Oral Competition, which may significantly affect learner's emotions, motivations and English performances.

The learner was observed once a week as she attended the Comprehensive English class. This module has been selected for classroom observation because it included all kinds of English activities, namely, speaking, writing, listening, reading and grammar. Also, the learner was asked to write the diary entry once a week after her attendance at the observed class and provided copies of her diary entries once a week to me for constant comparison. She was interviewed twice a month after she has received feedbacks after her regular tests, big exams and the competition. The interviews were audio-recorded. Each interview lasted around half an hour's time. She was asked to complete a questionnaire consisting largely of open-ended questions to supplement the written information gathered from the diary entries. The questionnaire was distributed twice per month and the learner was given several days in which to complete them. The diary entries and questionnaires may garner similar information from the learner but this was done over different time scales, with the diary entries gathering short term responses and the questionnaires medium term. Class observation was applied for the purpose of being involved in the same context with the learner. Therefore, the researcher was able to obtain the knowledge of the context about the classroom activities.

Sampling. The learner was from a Foreign Language University in China. She was a second-year Chinese student of English who was selected at random from one class and asked to volunteer to take part in the study. The learner was studying a degree in English. The first reason for choosing a second-year university student instead of year one, three or four is because if the learner may be a very confident English speaker (like year four), she may not have strong negative emotions about learning English as

a learner in other years may have. Secondly, another reason is according to the possible access of the learner. Since this study is an in-depth investigation across six months including two semesters and one summer vacation in between, year one students are new to university and busy with the military training while year three students are in their intern period. Therefore, the year two students are the most suitable participants for this research.

Data Analysis. Nine individual interviews took place at two-week intervals. The interviews were audio-recorded and the transcript of interviews was interpreted and analysed using NVivo software for qualitative data analysis. Also, the data from the diary entries was analysed using NVivo as well as those gathered from open-ended questionnaire responses.

Thematic analysis was the system of analysis because it ensured both accessibility and flexibility (Braun & Clarke, 2012). The categories for analysis were not predetermined, and the analysis was carried out inductively. To be specific, the coding framework was based on "recurrent issues in the text' rather than 'established criteria' or 'a set of theoretical constructs" (Attride-Stirling, 2001, p. 390-391). Theme generalization was according to Basic Themes which referred to "lowest-order premises evident in the text"; Organizing Themes which refers to "categories of basic themes grouped together to summarize more abstract principles"; and Global Themes which refers to "super-ordinate themes encapsulating the principal metaphors in the text as a whole" (Attride-Stirling, 2001, p. 388).

Ethical Consideration. Regarding ethical issues, please refer to my ethical approval form which was submitted and approved by the University of Warwick.

Results and Discussion

Fiona was a self-perceived highly motivated learner with great confidence and self-esteem. Also, she reported that she was an autonomous learner who designed detailed study plans and organised her time schedule for purpose of better English language development. Especially, her proficiency in spoken English ranked top 3 in her grade, according to the result of the previous year's university wide English Oral Competition. She positively participated in activities and held many leading positions, namely, the leading actress of the English Drama Club, the member of the Model United Nations Association, and the representative of the English class. She had clear goals for her future. She claimed that she would like to study an MA in Interpreting and Translating in the University of Bath, UK after her graduation. Therefore, everything she did, as she argued, was for this clear goal.

Fiona's Affective Experiences

Through the whole period of this study, 10 affects of different intensities were identified from Fiona's responses including: Admiration, Anxiety, Confidence, Contentment, Enjoyment, Expectation, Interest, Jealousy, Relaxation and Stress. These affects interacted with each other at different intensities and appeared to coalesce into 21 combinations. Within each combination, the affects interacted with each other at different levels, and each finally reached a stable state for the duration. According to this stability, these combinations were categorised into 4 salient affective patterns.

(a) Higher Level Positive Affective Pattern
(b) Mixed Lower Level Negative and Higher Level Positive Affective Pattern
(c) Mixed Lower Level Positive, Lower Level Negative and Higher Level Negative Affective Pattern
(d) Mixed Lower Level Negative and Lower Level Positive Affective Pattern

Perceived Facilitative Affective Experiences

Three patterns of affective experiences (a, b & d, outlined below) could be identified as more facilitative for Fiona's performance. From her responses, these patterns of affective experiences related to better performance than her perceived English proficiency would have suggested. The affective experiences appeared to have positively affected her performance as she perceived it.

(a) Higher Level Positive Affective Pattern

Fiona commented that a trail of higher level positive affects including expectation, relaxation, confidence, interest, contentment, admiration and enjoyment related to her good performance in regular exams.

(b) Mixed Lower Level Negative and Higher Level Positive Affective Pattern

Fiona reported two of higher level positive affects including expectation and confidence. Also, she reported three lower level negative affects including anxiety, jealousy and stress. From her responses, these combinations of affective experiences related to better performance than her perceived English proficiency would have suggested. The affective experiences appeared to have positively affected her grammar performance in week 14 and writing performance in week 14.

[Sample Extract 1: Interview]

> L: "Regarding your grammar performance (week 14), how did you feel after you received the feedback from your teacher?"

Fiona: "Well, before the exam, I felt a little bit stressful and anxious, because thought that I did not do well last time. And during these two weeks, I have reviewed thoroughly, and therefore, I believed that, I really expected to take this exam, to validate my ability and effort. I believed that I did well during the exam and the feedback from my teacher met my expectation."

(d) Mixed Lower Level Negative and Lower Level Positive Affective Pattern

Fiona reported that two lower level positive affects including expectation and relaxation and together with one lower level negative affect, anxiety facilitated her reading performance in week 8.

Perceived Debilitative Affective Experiences

Two patterns of affective experiences (c & d, outlined below) could be elicited as more debilitative for Fiona's performance. From her responses, these combinations of affective experiences related to poorer performance than her perceived English proficiency would have suggested. The affective experiences appeared to have negatively affected good or average performance.

(c) Mixed Lower Level Positive, Lower Level Negative and Higher Level Negative Affective Pattern

Fiona reported that one lower level positive affect admiration, lower level negative affects anxiety and stress, together with one higher level negative affect jealousy negatively affected her good or average vocabulary performance in week 6.

(d) Mixed Lower Level Negative and Lower Level Positive Affective Pattern

Fiona reported one lower level positive affect expectation and two lower level negative affects anxiety and stress. From Fiona's responses, this pattern of affective experiences related to poorer performance than her perceived English proficiency would have suggested. The affective experiences appeared to have negatively affected good or average grammar performance in week 4.

[Sample Extract 2: Diary]

Fiona: "Though I expected to validate my effort, but my expectation to take the exams was not as strong as the week before. Because in class, the teacher told us that the grammar section may include paragraphs outside Syllabus, which made me feel a little stressful. And before the exam, I felt a little bit anxious and I knew that I may not perform as well as last time."

Fiona's Self-reported Performance Trajectory

Identified Attractor States

From Fiona's responses regarding her self-reported performances, altogether four attractor states, namely, Integrative Disposition, Self-esteem, External Incentives and Autonomy were identified.

Integrative Disposition

Integrative Disposition was termed by Dörnyei (2009) according to Ushioda's (2001) classification of motivation dimensions. Dörnyei (2009) argued that from Ushioda's (2001) eight motivation dimensions, Integrative Disposition represents a broad cluster which consisted of "Personal goals; Desired levels of L2 competence; Academic interest; Feelings about French-speaking countries or people" (p. 30). For example, from Fiona's responses, she had clear goals for her future to study at University of Bath, therefore, she "searched information on the University of Bath". Moreover, her performances met her desired level of L2 competence and willingness of being "named more to lead reading vocabulary in class".

Self-esteem

Branden (1994) defined Self-esteem as "the disposition to experience oneself as being competent to cope with the basic challenges of life and of being worthy of happiness". In addition, The National Association of Self-Esteem (1997) refined it as "the experience of being capable of meeting life's challenges and being worthy of happiness". For example, Fiona claimed that in week 10, her "self-doubt" decreased because of her successful election to become a "member of Model United Nations Association". Another example from her responses was her "positively helping teacher to prepare before class begins" reflecting that her healthy self-esteem had increased positive behaviour.

External Incentives

From Fiona's explanation, External Incentives including teacher's appraisal and peers' approval made a powerful attractor state. Two salient External Incentives related to optimal performance and two other external incentives related to worst performance. For example, in week 6, Fiona argued that she was "not satisfied with the teacher" because the teacher pointed out other students to lead reading new vocabularies instead of her. And her self-reported vocabulary performance significantly declined to the worst point. Another example related to good performance, positive behaviour and peers' approval. She positively attended "drama practicing activities" and "Model UN practicing activities" because she could receive affirmative comments from her peers, which facilitated her speaking performance in week 10.

Autonomy

In Self-determination theory (SDT), three features including competence, relatedness and autonomy were introduced by Deci and Ryan (1985). Identified regulation was claimed to be a more Autonomy driven form of extrinsic motivation. This argument can be linked to Dörnyei's (2009) illustration that identified regulation "occurs when people engage in an activity because they highly value and identify with the behaviour, and see its usefulness" (p. 14). For example, Because Fiona was a self-perceived highly motivated student with clear future goals, from her daily behaviour, for example, "keep daily detailed study plans, being specific to minute", "listen to BBC one hour daily", and "use Economist to practice reading". From these responses, it was obvious that Fiona could organize her time effectively to achieve better performance.

Regarding Fiona's self-reported performances, 6 trajectories were identified to present changes in her self-perceived performances over the six-month time window. The interactions between her self-reported performances, different attractor states and affective patterns were also presented.

Figure 1 displays Fiona's self-reported vocabulary performance (green dashed line) trajectory; Figure 2 displays her self-reported grammar (blue dashed line) performance trajectory; Figure 3 displays her self-reported reading (red dashed line) and listening (yellow dashed line) performance trajectories; and Figure 4 displays her self-reported speaking (orange dashed line) and writing performance (purple dashed line) trajectories.

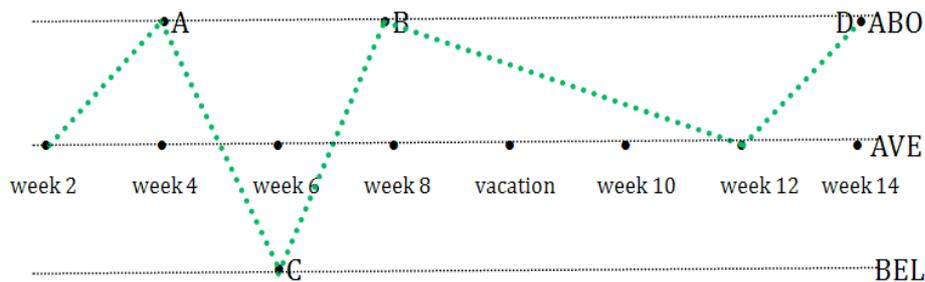➤ Fiona's Self-reported Vocabulary Performance Trajectory

Figure 1 Fiona's Self-reported Vocabulary Performance

Figure 1 shows how Fiona's self-reported vocabulary performances changed over time. Four crucial points A, B, C and D were identified from her responses. Regarding Fiona's self-reported vocabulary performances, she argued that the initial condition which referred to the state that the system was in at the beginning of this investigation (MacIntyre & Gregersen, 2012) was "to study an MA in Interpreting and Translating in the University of Bath, UK". In this study, the initial condition referred to the identifying attractor state the performance system occupied at the time Fiona started her class in week 1, which was system component "Personal Goals" that was categorised as the attractor state of Integrative Disposition.

Over the time window of the study, four attractors, namely, Integrative Disposition, Self-esteem, External Incentives and Autonomy were identified. The movement between the system components within each attractor as well as their interactions with the affective groups significantly related to the change of Fiona's self-reported performance trajectory.

To be specific, Fiona argued that she believed her vocabulary performance started at the average point in week 2, when she argued that she could do better because she has already "finished first round GRE vocabulary recitation during vacation". In the following two weeks, the attractor of Integrative Disposition together with the facilitative affective experience of Higher Level Positive Affective Pattern correlated with her self-reported excellent performance in week 4 at Point A. After reaching the optimal performance state, she argued that her performance dramatically decreased to the worst point in week 6. At Point C, she was not satisfied with the teacher's feedback at all, which was categorised as the attractor of External Incentives. In the meantime, she commented on the debilitative affective experience of Mixed Lower Level Negative, Lower Level Positive and Higher Level Negative Affective Pattern as well. At the end of the first semester, at Point B, the attractor of Self-esteem together with the facilitative affective experience of Higher Level Positive Affective Pattern moved again and she reported that she perceived her vocabulary performance was very good during the final exam. After the vacation, Fiona kept a record of her detailed study plans to monitor herself to make progression in the vocabulary development which was categorised as the attractor of Autonomy. She argued that her performance was normal in week 12 and went upward to the optimal state in week 14 at Point D during the mid-term exam. Also, Higher Level Positive Affective Pattern was reported in the meantime.

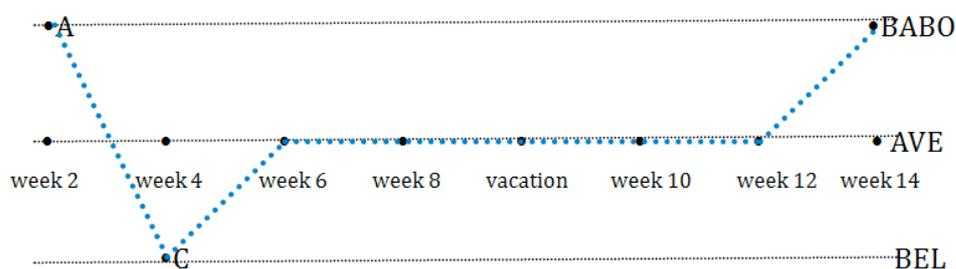➢ Fiona's Self-reported Grammar Performance Trajectory

Figure 2 Fiona's Self-reported Grammar Performance

Figure 2 shows how Fiona's self-reported grammar performances changed over time. Three crucial points A, B and C were identified from her responses. Regarding Fiona's self-reported grammar performances, she argued that the initial condition was "positively helping her teacher with class preparation" because she believed that she was "more competent than others to be the teacher's assistant". In this study, the initial condition referred to the identifying attractor state the performance system

occupied at the time Fiona started her class in week 1, which was the attractor state of Self-esteem.

Two attractors Self-esteem and External Incentives were identified. At Point A, Fiona reported that she believed her grammar performance reached its the optimal state in week 2. Fiona felt that she was "more competent than others to be the teacher's assistant", which could be categorised as the attractor Self-esteem, together with the facilitative affective experience of Higher Level Positive Affective Pattern was seen to correlate with her self-reported excellent performance. After reaching the optimal performance state, she reported that her performance dramatically decreased to its worst Point C in week 4. In the following weeks afterwards, she argued that her grammar performance slightly went upward to the average state, and kept at the average level for weeks until finally reaching the optimal state again at Point B in week 14. One attractor state of External Incentives moved constantly from week 4 onwards, with interactions with different affective groups. In week 4, Fiona argued that the teacher's feedback was not inspiring at all and she in the meantime reported Mixed Lower Level Negative and Lower Level Positive Affective Pattern. However, she positively shared her opinions with her teacher and classmates. During the time after week 4, she gained confidence in herself again and renewed expectations for her future, though sometimes she felt a little bit anxious and stressful. Such combination of affects with different intensity can be categorised into Mixed Lower Level Negative and Higher Level Positive Affective Pattern.

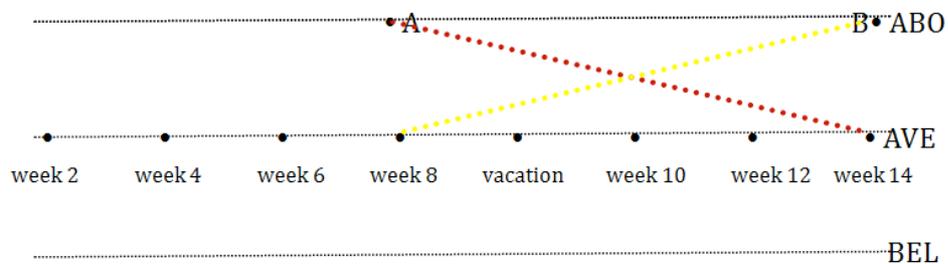➢ Fiona's Self-reported Listening and Reading Performance Trajectory

Figure 3 Fiona's Self-reported Listening and Reading Performance

The yellow dashed line referred to Fiona's self-reported listening performances whereas the red one referred to her reading aspects. Figure 3 shows how Fiona's self-reported listening and reading performances changed over time. Two crucial points A, and B were identified from her responses. Her English listening and reading ability only tested twice during the whole studied time window. The aspects of listening and reading were tested in the final exam in week 8 of the first semester and the mid-term exam in week 14 of the second semester. Fiona reported that she kept detailed study plans to practice her English reading ability by reading articles from Economist regularly, and "listening to BBC one hour daily" to practice her English listening ability. One attractor of Autonomy was reported to interact with the affective experience of Higher Level Positive Affective Pattern. Same attractor state was

reported by Fiona correlating with her optimal listening performance at Point B and optimal reading performance at Point A. At Point A, Mixed Lower Level Negative and Lower Lever Positive Affective Pattern was identified. Her self-reported listening performance trajectory started at an average point in week 8 and went upwards to the optimal state in week 14. Her self-reported reading performance reached the optimal state in week 8 and went downward to the average state in week 14.

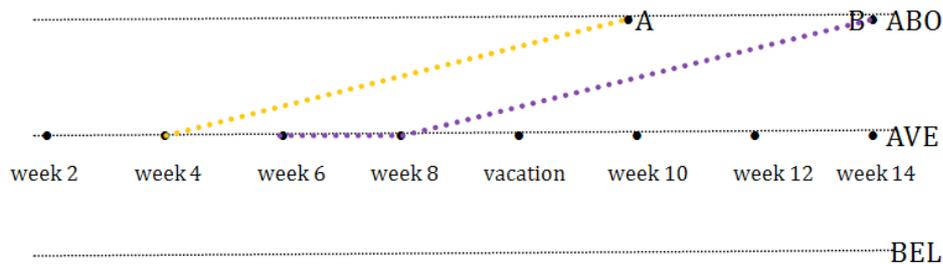> Fiona's Self-reported Speaking and Writing Performance Trajectory

Figure 4 Fiona's Self-reported Speaking and Writing Performance

The orange dashed line referred to Fiona's self-reported speaking performances whereas the purple one referred to her writing aspects. Regarding Fiona's self-reported speaking performances, she claimed that she was really confident in her English speaking ability. Her proficiency in spoken English ranked top 3 in her grade, according to the result of the previous year's university wide English Oral Competition. She positively participated in activities and held many leading positions. From her responses, she believed that her English speaking ability was much better than her peers since she was only eight in her primary school study. Such belief and her confidence of English speaking ability accumulated over time. This response can be linked to Greenwald and Banaji's (1995) perspective of implicit self-esteem. This response can be categorised as the attractor Self-esteem. One affective pattern of Higher Level Positive Affective Pattern was also reported significantly related to her English speaking optimal performance at Point A in week 10.

Regarding the writing section, Fiona reported 3 self-perceived performances in week 5, 8 and 14. She reported that she positively practice her writing ability by "submitting pieces of writings to university newspaper" and "finding a foreign teacher to proofread her writings" which can be categorised as the attractor Autonomy. She also consulted with teachers and peers to improve her writing ability, which can be categorised as the attractor External Incentive. From her responses, her perceived performance in week 5 and 8 was average and in week 14 was very good. Mixed Lower Level Negative and Higher Level Positive Affective Pattern was reported relating to her optimal performance at Point B in week 14.

Conclusion

First, initial conditions which were defined by Verspoor (2014) as "the conditions subsystems are in when the researcher starts measuring" (p. 45) were reported significantly relating to the Fiona's group recognition and career goals. As she reported, in her class, two groups existed relating to three career goals. To be specific, Civil Service Exam Group related to career goals of Studying for a Master Degree in China and Going for a Job Directly after Graduation; whereas GRE Group related to the career goal of Studying a Master Degree Abroad. Fiona was reported that she would like to study abroad after graduation and she reported that she belonged to GRE group at the beginning of this research.

Second, the learner's perceived affective patterns are more complicated than a dualistic view of not being positive, then should go for negative. As responses from Fiona, four affective patterns were reported including simultaneous affects at different intensities. This finding left a question relating to the predictability issue from Dörnyei's three-step template which "Retrodictive Qualitative Modelling" (RQM). How to predict the learner's affective experiences from a non-dualistic view? It was clear that even belonged to the same affective pattern, different affects were identified at different timescales and different research contexts. These affects were reported as simultaneous affective groups rather than discrete affects. The learner's affective state was more complex from a DST perspective.

To conclude, this study reports the perceived affective experiences and self-reported performances of one Chinese learner's of English from a foreign language classroom. Four salient affective patterns and four attractor states were identified interacting with six different self-reported performance trajectories. The learner's specific affective patterns, attractor states and self-reported performance trajectories over time are unique. No claim should be made that other foreign language learners respond similarly to similar contexts.
The application of DST into the study of FLA affective experiences reveals both its strengths and its limitations. On the positive side, DST enables researchers to identify salient patterns, attractor states and the performance trajectories from the learners' perspectives, which it is seen as a powerful framework for future FLA affective research. On the other hand, researchers still face the methodological challenges in researching DST under FlA context, because "dynamic systems research is such a new and uncharted territory that there are simply no tried and tested research methodological templates available" (Dörnyei, 2014, p. 84). However, an increasing number of researchers see DST's strength and design empirical studies to examine different aspects within FLA settings (Nitta & Baba, 2014; Yashima & Arano, 2014; Henry, 2014; Hiver, 2014; Waninge, 2014; Mercer, 2014). As MacIntyre and Serroul (2014) said, "The nitty-gritty detail of this complex process, observed as it unfolds in idiodynamic studies of the L2 learning and communication process, provides an embarrasse de riches that hopefully will motivate future research" (p. 133).

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