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A Multiple-Case Study of Self-  
perceived Affective Experiences and Self-  
reported Foreign Language Performances  
from a Dynamic Systems Theory  
Perspective

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A thesis submitted in fulfilment of the  
requirements for the degree of Doctor of  
Philosophy in Education

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Last but not least, I wish to thank my loving parents for their care and encouragement for so many years of my life, so that I could complete my studies and pursue my dreams.

## Declaration

The work in this thesis was developed and conducted by Luanyi Xiao between October 2012 and June 2016. I declare that, apart from work whose authors are explicitly acknowledged, this thesis and the materials contained in this thesis represent original work undertaken solely by the author. I confirm that this thesis has not been submitted for a degree at another university.

Papers in publication by the author

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## Abstract

This study aims to explore the non-linear interactions between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language (FL) classroom through the lens of Dynamic Systems Theory (DST), a theory which developed from advances in the understanding of complex and nonlinear systems in physics and mathematics. The present study bridges several disciplines, namely, mathematics, physics, psychology, applied linguistics and education, in order to avoid over-simplifying the phenomenon by focusing on fragments of reality.

This study endeavours to transcend the boundaries between the above disciplines. Abstract DST concepts from mathematics and physics were initially translated into tangible FL terms acceptable to social science researchers. In addition, in order to engage with the learners, a phenomenographic approach was adopted as a qualitative method to explore the dynamism of the learners' affective experiences and their reflections on their experiences from a second order perspective. 12 second-year Chinese students of English from a Foreign Language University in China participated in this six-month longitudinal study. Diary, Qualitative Survey, Semi-structured Interview and Class Observation were utilised for data collection. Thematic Analysis (TA) was employed to describe the phenomena at a collective level. Finally, a three-layer model, the *Dynamic Model of Foreign Language Development* was proposed to draw a conclusion from this study, aiming to present a novel way of understanding the distinctive features of the learners' constant self-evaluations and their

perceptions in the different contexts across time. In summary, at a collective level, the relevant attractor states from the second layer, which were determined by three main forces, namely, cognition, emotion and motivation from the first layer, contribute to making up the relevant learning experiences in the third layer.

This study has contributed to the under-studied area of emotions and performance in FL learning. Several research and pedagogical implications have been identified. The results of this study contribute to a possible way to figure out terminological issues in an interdisciplinary study. The findings suggest that DST could allow a researcher to situate emotions and performances in one iterative system. DST might provide a possible logical solution to such a causality dilemma.

## **Chapter One Introduction**

English has become virtually a lingua franca, with people across the world engaged in learning it, as a second language (SL) or an additional language, all with varying degrees of emotion, motivation and cognition. Emotion for learning English as a foreign language (FL) appears to be a vital component of success, yet research into the ways in which the emotional states affect FL learning has not as yet yielded a clear cut relationship. In the present thesis, I am investigating the non-linear interactions between the self-perceived affective experiences of a group of learners and their self-evaluated performances through the lens of Dynamic Systems Theory (DST). This theory developed from advances in the understanding of complex and nonlinear systems in physics and mathematics. The present interdisciplinary study bridges several disciplines, namely, mathematics, physics, psychology, applied linguistics and education, in order to avoid over-simplifying the phenomenon by focusing on fragments of reality.

### **1.1 Scope of the Study**

I am seeking to explore how the learners' self-perceived affective experiences and their self-evaluated performances interact with each other. Why did I want to do a PhD in Education? My main motivation was to figure out why certain things worked better than others in a classroom. I was an IELTS (International English Language Testing System) teacher before I came to the University of Warwick for a PhD degree. As a language teacher, I observed that the same exam score was perceived differently by different learners. A 6 out of 9 in writing might be perceived as a bad score by a very good English learner. In contrast, a frustrated

English learner might want to say 'Hallelujah' in front of a 6. In addition, when confronting an exam score, the learner's emotional states varied. I was interested in knowing if I could to some extent predict the learner's behavioural pattern by the identification of learner types or the interactions between the learners' emotions and self-evaluations. Therefore, I was eager to know the theory behind the practice and decided to do a PhD.

In a later stage, after a thorough review of literature on the relationship between the self-perceived affective experiences and the self-reported performances, I found out that both were fluid in nature, and might change from time to time. It was very difficult to identify their relationship and to conceptually illustrate the changes overtime without an appropriate toolkit (MacIntyre & Serroul, 2014). Because a cause-effect relationship perspective was not sufficient to explain their relationship, my PhD supervisor, Professor David Wray, suggested to me to see things through the lens of Dynamic Systems Theory. At that time, DST's novelty had its own challenges in 'not being part of the mainstream in research' (MacIntyre et. al., 2014, p. 420). I presented at the 'Ae-Motivation 2014 International Conference on Motivational Dynamics and Second Language Acquisition' in the University of Nottingham. During the conference, I exchanged my ideas with many scholars who were specialised in DST. I realised that DST was promising and had great potential. DST would allow me to situate emotions and performances in one iterative system. In this dynamic system, both emotions and performances existed and operated equally at the same time. I was able to identify the learners' developmental trajectory through a period of time.



Therefore, I decided to observe things through the lens of DST and conducted my PhD study in this way.

My aim was to develop an in-depth understanding of the learners' awareness, their conceptions and their different ways of experiencing the phenomena from their standpoints in an FL classroom. The learners' conceptions are important as a contribution to quality teaching in that the learners themselves are responsible for learning what the teachers teach them (Rudd, 2007). In addition, the results from this thesis hopefully can expand FL learners' and teachers' thinking.

In this regard, several concepts, theories and frameworks were employed in this study. First, I employed the Component Process Model (CPM) to define an emotion as 'an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer, 2009c, p. 1307). Scholars from different disciplines in the humanities and the social and behavioural sciences have rarely agreed on the definition of emotional experiences (Scherer, 2005). Therefore, I need to carefully define the emotions in this thesis in order to measure them in accordance with my research purpose. Second, I employed Dynamic Systems Theory (DST) to explain how emotions and self-evaluations interacted with each other in one iterative system (Larsen-Freeman, 1997). Third, in order to engage with the learners, I adopted a phenomenographic approach which was introduced by Marton and Säljö (1976) as a qualitative method to assist me to explore the dynamism of the learners' affective experiences and their reflections on their experiences from a second order perspective. Fourth, in order to check the intercoder reliability and agreement, I employed the Geneva Affect Label Coder (GALC) and the GRID paradigm (Scherer *et. al.*, 2013) and the Longitudinal

Qualitative Data Summary Matrix (LQDSM) (Saldaña, 2009). Fifth, Thematic Analysis (TA) was employed as the system for data analysis as it would ensure both accessibility and flexibility (Braun & Clarke, 2012). Finally, I employed the Platonic Tripartite Framework (redefined by Dörnyei as cognition-motivation-emotion in 2009b) to outline the attractor basin for each identified attractor state in order to categorise the conceptions of a phenomenon at a collective level (Sandberg, 2000).

In summary, this thesis endeavours to transcend the boundaries between the above disciplines, aiming to establish a novel theory to describe the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in an FL classroom. This thesis has several research implications for the SL/FL researchers as well as pedagogical implications for the frontline teachers and the students.

## **1.2 Organisation of the Thesis**

This thesis is organised into four sections covering a literature review, a methodology, 12 case studies and a discussion and conclusion.

Regarding the literature review, in Chapter 2, I initially will illustrate the concepts of Second Language Acquisition (SLA), Foreign Language Acquisition (FLA) and Foreign Language Development (FLD) and the interrelationships between them. Afterwards, my review will focus on the debates about three questions: 'What are emotions?', 'How many emotions are there?' and 'How can emotions be measured?' in general psychology. By presenting a clear definition

of the FLA affective experiences in this study, I will review the relationship between the emotions and the performances in order to observe the research gaps. Finally, I will introduce the DST's origin, development and key characteristics, as well as how abstract DST concepts are translated into tangible SLA/FLA terms. The main research question and four subsidiary research questions will also be presented at the end of this Chapter.

Regarding the methodology, in Chapter 3, I will illustrate the methods and methodology that have been selected to answer the research questions. First, I will introduce the origin of phenomenography, first and second order perspective and the relationship between ontological and epistemological assumptions of phenomenography. In addition, I will elaborate the methodological considerations of phenomenography. Furthermore, I will present the rationales and the research designs for the current multiple-case study. Finally, I will elaborate how I will analyse and report the data and complete the intercoder reliability and agreement checks.

Regarding the 12 case studies, in Chapter 4, I will present the findings of each individual case. This study does not focus on the richness of the learners' conceptions. Due to the word count limit, I will only present examples for each affective pattern and describe the special points on the performance trajectories that have contributed to the understanding of a phenomenon at a collective level. I will describe the first learner Alex's self-reported performance trajectories in full and ensure that all of the 12 participants' profiles follow the same format.

Regarding the discussion and conclusion, in Chapter 5, I will make a cross-case comparison and evaluate the research findings by referring to the existing and established literature. First, I will elaborate the self-organising capacity across different affective patterns and different individuals. In addition, I will focus particularly on an illustration of self-organisation, emotional ambivalence and feedback. Second, I will compare the attractor states with a wider literature on what were termed as ‘variables’ in the traditional research. Third, a three-layer model the *Dynamic Model of Foreign Language Development* is proposed to illustrate a novel way of understanding the relationship between the learners’ self-perceived affective experiences and their self-evaluations. Fourth, I will illustrate the research implications, pedagogical implications, limitations and future research agenda and finally summarise the conclusions of this study.

## **Chapter Two Literature Review**

### **2.1 Introduction**

In this chapter, I will present a review of the literature in the following five sections. In the first section of the chapter, I will illustrate the concepts of Second Language Acquisition (SLA), Foreign Language Acquisition (FLA) and Foreign Language Development (FLD) and the interrelationships between them. In the second section, my review will focus on the debates about three questions: 'What are emotions?', 'How many emotions are there?' and 'How can emotions be measured?' in general psychology. In addition, I will elaborate the features of FL affective experiences and present the definition of affective experiences and its rationales in this study. In the third section, I will review the relationship between the self-perceived affective experiences and the objective learner performances. In the fourth section, I will review the relationship between self-perceived affective experiences and self-evaluated learner performances, and four self-related theories. In the fifth section, I will introduce Dynamic Systems Theory (DST)'s origin, development and key characteristics, as well as how abstract DST concepts from natural science are translated into tangible SLA/FLA terms which are acceptable to social science researchers. Finally, the main research question and four subsidiary research questions will be presented.

### **2.2 Second Language Acquisition (SLA), Foreign Language Acquisition (FLA) and Foreign Language Development (FLD)**

In this section, I will illustrate the concepts of Second Language Acquisition (SLA) and Foreign Language Acquisition (FLA) in Kachru's Three-circle Model of World Englishes, as well as the concept of Foreign Language Development (FLD). There are two reasons for distinguishing these concepts at the beginning of this review of the literature. First, this study aims to investigate Chinese university students' perceptions of their affective experiences and performances through learning in an English classroom. Such a context is normally defined as the FLA context. In the Reference section, however, it can be seen that many reviewed works which are based on an SLA context were not excluded. This study is written from an FLA perspective but is largely informed by theories taken from the SLA context. Therefore, it is important to understand the relationships between SLA and FLA and how the two concepts apply to this study. Second, this study focuses on the investigation from a dynamic perspective, which was categorised by Dörnyei and Ushioda (2011), situated in an FLD context. It is also important to understand how scholars re-conceptualised the traditional terms, such as Individual Differences (ID), by reconsidering language as a developing process (Dörnyei, 2009b). As a result, in the light of FLD, the trend shows that more researchers have been involved in the investigation of traditional FLA concepts through the lens of DST. This study has been designed during such an important period for FLA paradigm shifting, and the empirical results from this study suggest certain reconsiderations of some traditional FLA concepts through the lens of DST.

### 2.2.1 Kachru's Three-circle Model of World Englishes

Braj Kachru in 1985 developed the Three-circle Model of World Englishes (Figure 2.2.1), and this model has remained influential in categorising the varieties of English in the world (Melchers & Shaw, 2013). To be specific, the inner circle refers to English spoken by native speakers from countries such as the United Kingdom, the United States and New Zealand. The outer circle refers to English produced by speakers from countries such as India and Nigeria, which were once part of the British Empire. The expanding circle refers to the use of English as a medium of international communication in countries such as China and Russia, where English plays no historical or governmental role.

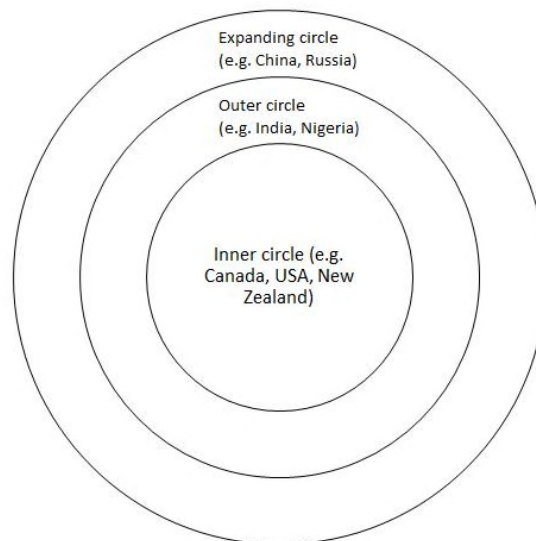


Figure 2.2.1 Kachru's Three-circle Model of World Englishes

The English of the inner circle was used as a mother-tongue language; the English of the outer circle was used as a second language; and the English of the

expanding circle was used as a foreign language or an additional language. Generally speaking, the English acquisition process in countries such as the United Kingdom or the United States was defined as First Language Acquisition<sup>1</sup>(FLA, F refers to First) or L1 Acquisition, the English acquisition process in countries such as India or Singapore was defined as Second Language Acquisition (SLA) or L2 Acquisition, and the English acquisition process in countries such as China, Japan or Thailand was defined as Foreign Language Acquisition (FLA, F refers to Foreign) (Kachru, 1992).

Kachru's Three-circle Model of World Englishes was developed and also criticised by different scholars. Mollin (2006) argued that the Three-circle Model failed to consider speakers using English as a medium for communication who do not share the same first language. On the other hand, Chien (2014) argued that there were merging areas between the expanding circle and the outer circle, due to the increasing demand of communications in English. For example, Chien (2014) argued that the usage of English in Taiwanese society was induced by globalisation. Taiwan area had been traditionally situated in the expanding circle; however, more and more Taiwanese had increasing opportunities to communicate with non-native English speakers rather than native English speakers in Taiwan area, although English was primarily learnt as a foreign language in Taiwan area. Similarly, Kobayashi (2008) argued that the varieties of English were developing due to the increasing number of people who used English for communication. In addition, Kobayashi (2008) categorised the Taiwanese English learners in his study as L2 (Second Language) speakers.

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<sup>1</sup> In order to avoid ambiguity, in this study, *First Language* will only use *L1* for abbreviation, and the abbreviation for *Foreign Language* will be *FL*.



Therefore, as Wong (2011) argued, the English learners' perceptions in the expanding circle were changing rapidly, and such change would alter their usage of English in the future.

An important difference exists between learning English as a second language and learning English as a foreign or additional language. Dörnyei (1994) argued that L2 (Second Language) learners were involved in activities and had connections with the L2 community to some extent, whereas FLA learners had less exposure to the L2 community and L2 speakers. Moreover, Dörnyei (1994) also evaluated Gardner and Lambert's theory (1972) and believed that their conclusions might not be applicable to FL (Foreign Language) learners, because the research participants were learning an L2 in an SLA context. Similarly, some empirical research revealed that SLA theories might not be transferable to some FLA settings for example, Liu's (2007) research on university students' motivation to learn English in China and Pae's (2008) research on the structural analysis of learners' L2 orientations in Korea.

On the other hand, more researchers have asserted that learning English is changing and the usage of English has changed already. Kormos and Csizer (2008) argued that English has become a global language and FL learners were not associated with any specific community as previously defined in many studies. 'A high number of students learn an L2 in a foreign language setting with the purpose of being able to communicate with other non-native speakers in an international environment' (Kormos & Csizer, 2008, p. 330). This argument can be linked to Dailey (2009), who proposed that 'learning English has been

transformed into not only being able to communicating with native speakers, but also with other non-native speakers outside of English-speaking countries' (p. 7).

In addition, the difficulty of defining a specific community emerged because of the geographic diversification of immigration (Massey & Capoferro, 2008). For example, if a Chinese learner of English was taught in China for 17 years, then relocated to America with his family and studied at an American university: can he be defined as an L2 learner or an FL learner? Let us reserve judgement for a while and add more information about this Chinese learner. He was a very shy person and almost never talked to English speakers in America. His favourite place was Chinatown, where he could get everything sorted in Chinese. Although he was living in America, he himself failed to engage in activities where English would be used as a communication tool. So could we define him to be exposed to L2 community? Furthermore, if this student was taught at an International School when he was in China, such as Harrow International School Beijing, can he be defined as an FL learner like other students from normal schools in China?

The above example might be extreme; however, it clearly reveals the difficulty of defining a specific community. Moreover, as the wide-spread application of CMC (computer-mediated communication) tools grew the geographical constraints disappeared and more learners from the expanding circle communicated with native speakers from the inner circle (Hampel, 2014). Similarly, Malinowski and Kramsch (2013) argued that CMC tools offered a novel way of FL teaching and broke down the geographical boundaries.

From above evaluation, it should be evident that differences exist between FLA and SLA, and related theories. In addition, as English has become the lingua franca in many parts of the world, the overlap between SL and FL was noted by researchers (Hampel, 2014). Many SLA theories were assumed to be applicable in different cultural settings which could be categorised as FL contexts. For example, Dörnyei's (2009a) L2 Motivational Self System was examined by many researchers in the FL context. Ueki and Takeuchi (2013) examined the Ideal L2 self from the L2 Motivational Self System in a Japanese EFL (English as a Foreign Language) context. Similarly, Kim (2012) designed a cross-grade survey analysis in Korea, and Qin and Dai (2013) examined the EFL learner's motivations in China.

This study focuses on the investigation of the perspectives of Chinese university learners of English. The target group of participants is situated in the expanding circle, and their learning of English could be defined as FLA. However, the literature reviewed is not restricted to FLA settings, and the theories that were put forward in an L2 context will not be excluded. The first reason is the overlapping areas between the expanding circle and the outer circle, due to the increasing demand for communication in English and the application of CMC tools. The second reason relates to two of the core theories from this current study, namely, DST and Platonic Tripartite Framework and their establisher and developer, Zoltán Dörnyei, from the University of Nottingham. As previously stated, Dörnyei's theories were mostly based in an L2 context (2009a, 2010, 2014, 2016) and widely held to be applicable by researchers in the FL context (Kim, 2012; Qin and Dai, 2013; Hsu *et. al.*, 2013; Li, 2014). Therefore, this

study has carefully reviewed and employed theories in the SLA context while maintaining awareness of the differences between SLA and FLA. The third reason relates to the amount of the quality literature in the FLA context. If all theories in the SLA context are excluded, as could be seen in the Reference section, there probably will be few works left. Therefore, this study will include both SLA and FLA theories and literature.

### **2.2.2 Foreign Language Development (FLD)**

Language Development (LD) can be categorised as First Language Development (L1 Development), Second Language Development (SLD) and Foreign Language Development (FLD). LD could be seen as a dynamic process which encompasses language input and language output, language acquisition and language attrition (de Bot, 2008). Researchers have become more aware of the concept of development, because both language acquisition and attrition have been included in the aspects of such developing process. For example, de Bot (2008) used the concept SLD instead of the more frequently used concept SLA in his research, aiming to describe both growth and decline of language development.

From a developing perspective, LD was one aspect of general human development (de Bot, 2008). In terms of general human development, Thelen and Smith (1994) argued: 'we approach the mystery of human development with the conviction that the acquisition of mental life is continuous with all biological growth of form and function' (p. XIII). They also considered that human development at different levels was controlled by similar processes. This view of

similarity in functioning was shared by de Bot (2008) who argued that the theories of general human development might be applicable to the investigation of LD. In addition, de Bot and Larsen-Freeman (2010) argued that they preferred the concept of development and defined SLD, as ‘the development and use of more than one language in individuals’ (p. 6).

The greater awareness of the concept of development was not a coincidence. As de Bot and Larsen-Freeman (2010) argued, they preferred the term ‘development’ rather than ‘acquisition’ because their perspectives were based on the notions of Dynamic Systems Theory (DST). From a dynamic perspective, the development is ongoing, and no individual could possibly say that one language is completely acquired (de Bot & Larsen-Freeman, 2010). They believed that linguistic skills can both grow and decline, and accordingly, ‘language acquisition and language attrition are equally relevant outcomes of developmental processes’ (p.6). A comprehensive review of DST will be presented in Section 2.7 of this chapter.

Investigating the traditional concepts through the lens of DST is not new (Dörnyei & Ushioda, 2011). The development of FLA research paradigms encompassed four successive periods ‘reflecting increasing degrees of integration with developments in mainstream motivational psychology’ (Ushioda & Dörnyei, 2012, p. 396). Four periods can be generally categorised as follows:

- ‘The social-psychological period (1959–1990), characterized by the work of Robert Gardner and his associates in Canada’;

- ‘The cognitive-situated period (during the 1990s), characterized by work drawing on cognitive theories in educational psychology’;
- ‘The process-oriented period (turn of the century), characterized by a focus on motivational change’;
- ‘The socio-dynamic period (current), characterized by a concern with dynamic systems and contextual interactions’.

(Ushioda & Dörnyei, 2012, p. 396)

Regarding the current socio-dynamic period, many aspects, such as motivation, cognition, vocabulary and grammar were starting to be reconsidered through the lens of DST, and more researchers attempted to apply DST investigating the traditional concepts. For example, Ryan and Dörnyei (2013) argued that to study L2 Self through the lens of DST can help develop a better understanding of constant change of the individual’s behaviour across different timescales as a whole. This holistic perspective was developed from Dörnyei's (2009b) reconceptualization of Individual Differences (ID). Dörnyei (2009b) argued that the traditional concept of ID which considered the learner's characteristics as being stable and monolithic was outdated. Alternatively, DST approach met the requirement of ‘certain higher order combinations of different attributes that act as integrated wholes’ (p. 243).

Because DST was a relatively new research paradigm, researchers were facing numerous challenges in investigating the SLA phenomenon from a dynamic

perspective (Larsen-Freeman, 2014). Similarly, Dörnyei (2014) argued that ‘we face serious problems when we want to conduct empirical research within a dynamic systems framework’, because ‘dynamic systems research is such a new and uncharted territory that there are simply no tried and tested research methodological templates available’ (p. 83-84). This study is situated in the socio-dynamic phase to study learners’ perceptions, affective experiences and performances through the lens of DST. This study endeavours to transcend the boundaries between different disciplines, to resolve the terminological issues, and to overcome major methodological challenges.

## **2.3 Affective Experiences**

### **2.3.1 What Are Emotions?**

In the affective science field, some questions have frequently been raised, for example, ‘What are emotions?’ ‘How many emotions are there?’ and ‘How can emotions be measured?’ Scholars from different disciplines in the humanities and the social and behavioural sciences have rarely agreed on the definition of emotional experiences (Scherer, 2005). James (1884) tried to provide an authoritative answer and argued that ‘the bodily changes follow directly the PERCEPTION of the exciting fact, and that our feeling of the same changes as they occur IS the emotion’ (p. 190). However, James’ argument only started a debate which has subsequently continued. Frijda *et al.* (1995) argued that emotions were what people said they were. However, Frijda’s Markam’s, Sato’s and Wiers’ definition also stimulated heated debates, and even the terminology of the phenomena was difficult to standardise (Davidson *et al.*, 2003). For

example, should certain phenomena be defined as ‘feelings’ or ‘emotions’ or ‘affective experiences’ or ‘moods’ and are there any differences between the above terminologies?

Gross (2010) developed a figure (Figure 2.3.1) to explain the relationships between ‘feeling’ ‘mood’ ‘affect’ ‘emotion’ and ‘attitude’. Gross (2010) argued that attitudes, emotions and moods were different types of affective states. Emotions were responses to situations that were ‘perceived as relevant to an individual’s current goals, and consist of appraisals (or ways of construing the situation) which give rise to loosely coordinated changes in experiential, behavioural, and physiological response channels’ (Gross, 2010, p. 212-213).

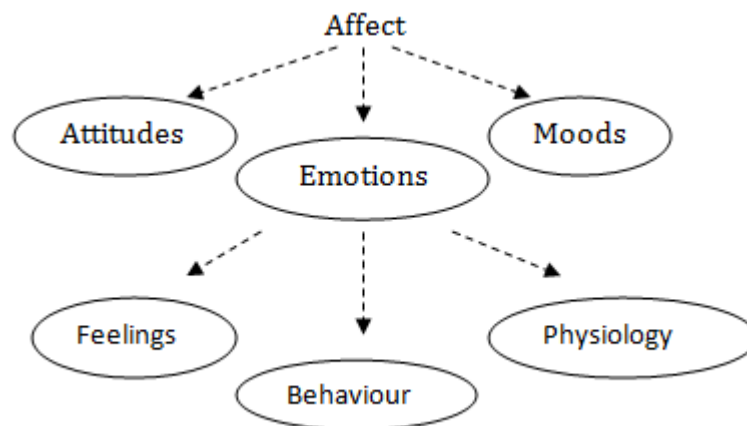


Figure 2.3.1 One Way of Organising Key Terms in Affective Science (p. 213)

However, distinctions between concepts such as ‘feeling’, ‘mood’, ‘affect’, ‘emotion’ and ‘attitude’ have been interpreted differently by different scholars. For example, Zajonc (1984) employed the word ‘affect’ and ‘emotion’ as interchangeable concepts in his study. Kaplan and Sadock (1991) argued that an



‘affect’ should be categorised as a behavioural component to an ‘emotion’.

Forgas (2001) considered that ‘emotion’ and ‘mood’ were two essential constituents of ‘affect’.

Scherer’s (2000) typology of affective states and Frijda’s and Scherer’s (2009) definition of features of emotions were ‘relatively uncontroversial and generally seen as being of central importance to the understanding of the phenomenon’ (Scherer, 2009b, p. 3459). To be specific, Scherer (2000) argued that individual affective states could be used as a general term and consisted of five components, namely, emotion, mood, interpersonal stances, attitudes and personality traits.

- ‘Emotion: relatively brief episode of synchronized responses by all or most organismic subsystems to the evaluation of an external or internal event as being of major significance (e.g., anger, sadness, joy, fear, shame, pride, elation, desperation)’;
- ‘Mood: diffuse affect state, most pronounced as change in subjective feelings, of low intensity but relatively long duration, often without apparent cause (e.g., cheerful, gloomy, irritable, listless, depressed, buoyant)’;
- ‘Interpersonal stances: affective stance taken toward another person in a specific interaction, colouring the interpersonal exchange in that situation (e.g., distant, cold, warm, supportive, contemptuous)’;

- ‘Attitudes: relatively enduring, affectively coloured beliefs, preferences, and predispositions toward objects or persons (e.g., liking, loving, hating, valuing, desiring)’;
- ‘Personality traits: emotionally laden, stable personality dispositions and behaviour tendencies, typical for a person (e.g., nervous, anxious, reckless, morose, hostile, envious, jealous)’.

(Scherer, 2000, p. 140-141)

In addition, Frijda and Scherer (2009) argued that there were four central features jointly defined what an emotion was. The four features are as follows:

- ‘Emotions are elicited when something relevant happens to the organism, having a direct bearing on its needs, goals, values and general well-being. Relevance is determined by the appraisal of events on a number of criteria, in particular the novelty or unexpectedness of a stimulus or event, its intrinsic pleasantness or unpleasantness and its motivational consistency’;
- ‘Emotions prepare the organism to deal with important events in their lives and thus have a strong motivational force, producing states of action readiness’;
- ‘Emotions engage the entire person, urging action and/or imposing action suspension and are consequently accompanied by preparatory tuning of

the somatovisceral and motor systems. This means that emotions involve several components, subsystems of the organism that tend to cohere to a certain degree in emotion episodes, sometimes to the point of becoming highly synchronized’;

- ‘Emotions bestow control precedence on those states of action readiness, in the sense of claiming (not always successfully) priority in the control of behaviour and experience’.

(cited in Scherer, 2009b, p. 3459)

According to above four features, emotion was considered as ‘a *bounded episode* in the life of a system that is characterized as an *emergent pattern of component synchronization*, preparing *adaptive action tendencies to relevant events*, as defined by their *behavioural meaning* and aiming at establishing *control precedence over behaviour*’ (Scherer, 2009b, p. 3459).

### **2.3.2 How Many Emotions Are There?**

The principles for the differentiation of emotions have differed greatly among different emotion theories (Scherer, 2000, 2005, 2009a). Concentrating on the question: ‘How many emotions are there?’ this study has reviewed three emotional theories, namely, dimensional theories of emotions, discrete emotion theories, and componential theories of emotions.

#### **2.3.2.1 Dimensional Theories of Emotions**

Dimensional theories of emotions categorised emotions by defining their locations within one, two and three dimension(s). It referred to one interconnected neurophysiological system which controlled all emotions (Posner *et. al.*, 2005). Duffy (1934) argued that all emotions can be categorised into one, two or three dimension(s) including some measures of valence, pleasantness, intensity or arousal. The models aiming to categorise all emotions into one dimension were defined as unidimensional theories, whereas those aiming to categorise all emotions into two or three dimensions were defined as multidimensional theories (Scherer, 2000).

In the case of unidimensional theories, Schneirla (1959) argued that the pleasantness – unpleasantness dimension was the most important dimension to distinguish two fundamental behavioural orientations, namely, positive emotions and negative emotions.

In the case of multidimensional theories, Wundt (1897) argued that emotions could be located into three dimensions, namely, pleasurable – unpleasurable dimension, arousing – subduing dimension, and strain – relaxation dimension. Schlosberg (1954) also proposed a three-dimensional model that subsumed pleasantness – unpleasantness dimension, attention – rejection dimension and a level of activation dimension. Afterwards, Cowie and Cornelius (2003) provided a two-dimensional model of emotions (Figure 2.3.2), with the dimensions of valence and activation. Valence referred to the positive or negative aspect of the emotions, whereas activation referred to ‘the strength of the person’s disposition to take some action rather than none’ (Cowie & Cornelius, 2003, p. 14).

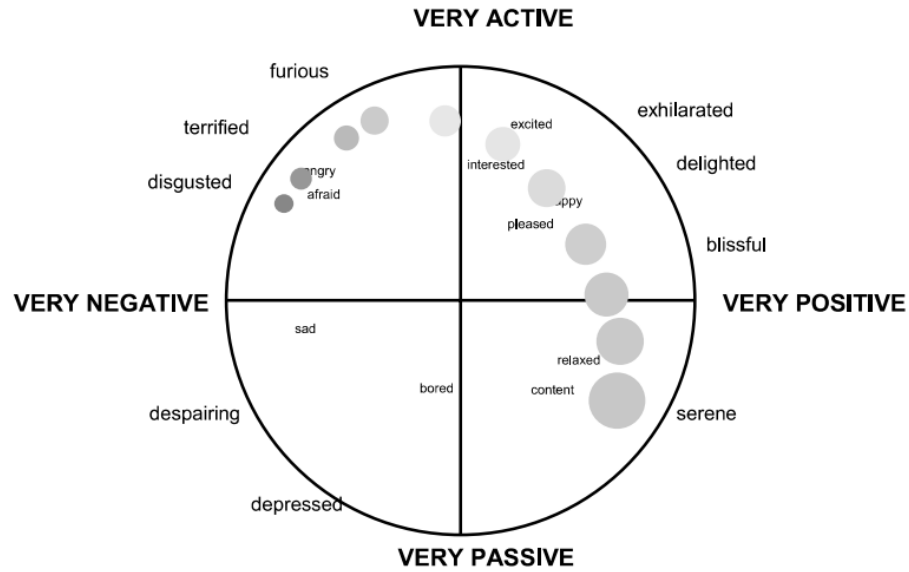


Figure 2.3.2 Cowie's and Cornelius' Two-dimension Emotion Model (p. 14)

### 2.3.2.2 Discrete Emotion Theories

Discrete emotion theories suggested that a number of core emotions existed and different emotions were evoked from separate neural systems (Posner *et. al.*, 2005). For example, Ekman and Friesen (1976) argued that there were *six* core emotions, namely, anger, disgust, fear, happiness, sadness and surprise. On the other hand, Tomkins (1962) had argued that the *six* core emotions were surprise, interest, joy, rage, fear, disgust, shame, and anguish.

### 2.3.2.3 Componential Theories of Emotions

Componential theories of emotions 'start with the assumptions that emotions are elicited by a cognitive (but not necessarily conscious or controlled) evaluation of antecedent situations and events and that the patterning of the reactions in the

different response domains (physiology, expression, action tendencies, and feeling) is determined by the outcome of this evaluation process' (Scherer, 2000, p. 149). For example, the Component Process Model (CPM), which was developed by Scherer (2009c), identified emotions as reactions to significant events and the emotions were categorised according to different appraisals to the events on multiple levels of processing. Emotion was conceptualised 'as an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer 2009c, p. 1307). Figure 2.3.3 shows the dynamic architecture of CPM.

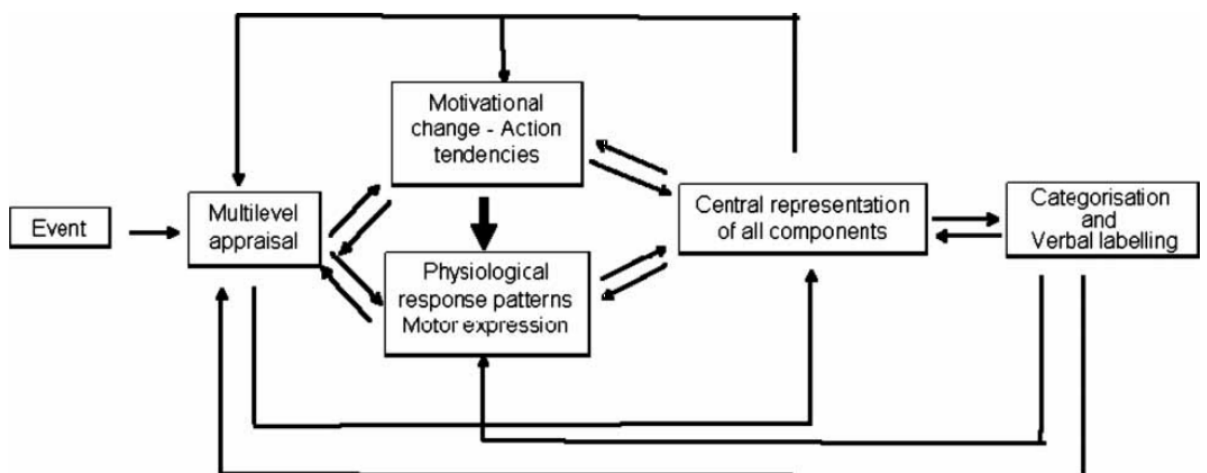


Figure 2.3.3 Component Process Model (p. 1307)

#### 2.3.2.4 A Synthesis of the Three Types of Theories

The three different types of emotion theories outlined above differed greatly in terms of their conceptualisation and operationalisation (Izard, 2010). The dimensional theories of emotions focused on the investigation of the emotions' locations in the dimensions defined and their distance between each other

(Cacioppo & Berntson, 1994). Researchers following the dimensional theories of emotions focused on the investigation of the degree of similarity on feelings (Scherer, 2000). In addition, the discrete emotion theories considered that each emotion was different in nature, in terms of the emotion's 'expressive and evaluative language', 'physiologic changes mediated by the somatic and autonomic systems' and 'behavioural sequelae, such as patterns of avoidance or performance deficits' (Lang *et. al.*, 2013, p. 101). However, Gallagher *et al.* (2014) pointed out that the three factors mentioned by Lang and his colleagues lacked correlations. Furthermore, Scherer (2000) argued that the componential theories of emotions were appraisal mechanisms 'based on a universally valid set of criteria, and influenced by cultural and individual differences' (p. 151).

### **2.3.3 How Can Emotions be Measured?**

To answer the question: 'How can emotions be measured?' researchers initially need to select a paradigm or an emotion theory to define what an emotion is according to the different research aims. Within each emotion theory, many models have been established and continue to be developed to measure emotions. For example, from the dimensional theories' perspective, Russell's (1980) circumplex model suggested that the emotions were distributed in a two-dimensional, circular space. From the discrete theories' perspective, Plutchik's Wheel of Emotions (1980) visualised eight basic emotions, namely, joy, trust, fear, surprise, sadness, disgust, anger and anticipation. From the componential theories' perspective, Scherer (2005) proposed a free-response measurement of emotional feeling, the Geneva Affect Label Coder (GALC). GALC was established on the basis of an Excel macro program with a large-scale event

sampling by Scherer and his colleagues. GALC was afterwards studied in various validation studies in different languages.

Apart from well-established emotion models within each paradigm, some researchers also offer comprehensive procedures to develop a model. For example, Scherer (2005) outlined a five-step procedure to measure an emotion.

- ‘the continuous changes in appraisal processes at all levels of central nervous system processing’;
- ‘the response patterns generated in the neuroendocrine, autonomic, and somatic nervous systems’;
- ‘the motivational changes produced by the appraisal results, in particular action tendencies’;
- ‘the patterns of facial and vocal expression as well as body movements’;
- ‘the nature of the subjectively experienced feeling state that reflects all of these component changes’.

(Scherer, 2005, p. 709)

The measurement of emotions needs to fit into emotion theory and paradigm (Frijda, 2013).



### 2.3.4 Emotions in the FLA Context

As Scherer (2005) argued, ‘The concept of “emotion” presents a particularly thorny problem...the question “What is an emotion?” rarely generates the same answer from different individuals, scientists or laymen alike’ (p. 696). Current emotion theories differ greatly in terms of the numbers of emotions and the principles that are evoked to differentiate one emotion from another. The measurement of FLA emotions depends on how researchers define the emotions being studied.

The three examples below provide the three different ways to study FLA emotions. They have both strengths and weaknesses with respect to methodological issues and results.

The first example relates to the most popular studied emotion, FL anxiety. Anxiety was defined by Horwitz, *et. al.* (1986) as ‘a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning processes’ (p. 128). They also acknowledged the uniqueness of FL anxiety and introduced the Foreign Language Classroom Anxiety Scale (FLCAS) as an instrument to measure anxiety levels.

Another example was the study designed by Garrett and Young (2009) who theorised emotions in FL learning by analysing one learner’s responses to a communicative Portuguese course. Interviews were employed by the researchers and grounded theory was applied to analyse the participant’s affective responses.

Rather than identifying what the emotions were, four main topics, namely, language awareness, teacher voice, social relations and culture learning were identified emerging 'from the transcripts as eliciting the most affective responses' (Garrett & Young, 2009, p. 212).

A third example was the study designed by López (2011) who argued although 'the process of learning a foreign language is replete with emotions, these have not been sufficiently studied in the field of English Language Teaching' (p. 43). López (2011) tried to bridge this gap and argued that six emotions including fear, happiness, worry, calm, sadness and excitement were most experienced by learners through foreign language learning. The findings were based on a weekly electronic journal written by 20 students over 12 weeks.

To sum up, firstly, the FLCAS is a 33-item individual self-report Likert scale questionnaire and largely applied in different language context by researchers worldwide (Zhao *et. al.*, 2013; Darmi & Albion, 2012; Nagahashi, 2007; Gregersen, 2005). Its strength is that the data collected by researchers are quantifiable and subject to mathematical analysis. However, one significant weakness of FLCAS is that the Likert scale questionnaire only provides five to seven options, and the spaces between each option can hardly be equidistant. Therefore, Liu (2012) pointed out that further data collection methods, for example, semi-structured interviews, classroom observations, and diaries could be applied to supplement FLCAS, in order to obtain a more comprehensive picture of foreign language anxiety.

Secondly, Garrett's and Young's (2009) research was inspiring because they applied an inductive method, grounded theory, to theorise one learner's affective response in a foreign language learning context. As they argued, the learner's affective responses were unique, and 'no claim should be made that other learners respond in similar ways to similar experiences' (p. 224). However, Garrett's and Young's (2009) research did not identify the specific emotions. On the other hand, López (2011) tried to identify specific emotions and reported that fear, happiness, worry, calm, sadness and excitement were most experienced by learners through foreign language learning. López's (2011) study not only reported negative emotions, it revealed that positive emotions, namely calm, happiness and excitement were possibly experienced by FL learners. Similarly, a growing number of researchers started to focus on positive affective experiences through the foreign language learning process (Gabrys'-Baker, 2013; Gregersen, 2013; MacIntyre & Gregersen, 2012).

### **2.3.5 Features of FL Affective Experiences**

Three features of FL affective experiences have been identified.

Firstly, feature one relates to the preference of investigating negative emotions rather than the positive ones. To be specific, most studies in terms of FL affective experiences focus much more on negative emotions, particularly on FL anxiety; whereas other emotions that individual learner might experience such as enjoyment, jealousy, relief are understudied. One possible reason may be the preconceived knowledge of the researchers. Anxiety research in FLA is relatively well established compared to other emotions. Howe and Lewis (2005)

provided an explanation of why researchers had stuck to well-established theories and framework, which may explain why other emotions are understudied.

Howe and Lewis (2005) argued:

‘We think this is because the trajectory of developmental psychology, like other dynamic systems, tends toward stability much of the time. Researchers stick to well-established habits of thinking and working, and their students acquire the same habits, often because that is the easiest road to publication and career advancement’ (p. 250).

Secondly, feature two relates to the preference of investigating discrete emotions rather than several simultaneous emotion blends. One reason for this situation could lie in the traditional methodological focus on isolation and linear relation mapping. Researchers focus on discrete variables as specific as possible to test their linear mapping to the target emotion, for example, the relationship between anxiety and English speaking proficiency. In the meantime, they risk ignoring the fact that sometimes a learner may experience more than one emotion at the same time, and that these emotions may change from time to time.

Thirdly, feature three relates to the accuracy in measuring an emotion. Different FLA researchers have defined emotions under different paradigms and applied measurements accordingly. From existing literature on examining FLA affective experiences, the main research methods are retrospective interviews, questionnaires and diary entries. A question may be framed in terms of

methodological issues with the data. How accurate are participant's retrospective reports of affective experiences? Oatley and Duncan (1992) argued that retrospective diaries were more accurate than questionnaires. Similarly, Nagurney et. al. (2005) argued that retrospective interviews helped to minimise recall bias.

An additional, another issue concerning accuracy is the participant's awareness of reality and their expression of reality. This issue concerns the relationship between reality, awareness and theory. For example, as MacIntyre and Gregersen (2012) pointed out, 'much of the existing qualitative research has tended to take a long view, with retrospective narratives emerging from interviews that may be influenced by a number of factors, such as self-serving bias, hindsight bias, and autobiographical memory biases' (p. 108).

Furthermore, Campbell *et al.* (2013) argued that although most researchers discussed the validity and reliability issues in their studies, few mentioned the intercoder reliabilities and agreement, which aimed to establish if different coders would define the same paragraph in the same codes.

### **2.3.6 Definitions of FLA Affective Experiences in this Study**

In the FLA context, emotion has proved difficult to conceptualise, because it applied to a wide range of constructs (Gardner *et. al.*, 1997). The constructs that have been studied the most included personality traits, self-concept, perceptions, motivation, learning styles, and L2 strategies (Hurd, 2000).

Moreover, FL researchers mostly referred to the emotional dimensions as the principal element of affective experiences (Arnold & Brown, 1999). For example, Imai (2010) took a particular view of FLA emotion. ‘Emotions are not just an individual’s private inner workings in response to external stimuli but are socially constructed acts of communication that can mediate one’s thinking, behaviour, and goals’ (Imai, 2010, p. 279). On the other hand, MacIntyre and Gregersen (2012) considered emotions as tools for individuals to appraise experiences and to make preparations to behave properly according to different situations; to facilitate decision making, and to promote learning.

In this study, the definition of FL affective experiences should be compatible with my research purposes. In response to the above three features (section 2.3.5), this study will investigate both positive emotions and negative emotions. The dynamic nature and constant change of the emotions will be identified. Also, I will investigate several simultaneous emotion blends rather than discrete emotions. Furthermore, the intercoder reliabilities and agreements will be checked and other reliability and validity issues will be discussed in Chapter 3.

As a consequence, the definition and measurement of the learners’ affective experiences in this study are in accordance with the componential theory of emotions from a DST perspective. The first reason is that this study is not going to investigate the degree of similarity between different emotions, which fits into the dimensional theories. The second reason is that this study does not focus on is the investigation of core emotions and how other emotions relate to the core ones, which fits into the discrete emotion theories. The third reason to define and measure the learners’ affective experiences with Scherer’s Component Process

Model (CPM) is that I am looking for the learner's perceptions and their simultaneous emotion blends, which subsume both positive and negative emotions. This aim fits into Frijda *et. al.*'s (1995) definition that emotions were what people said they were. Furthermore, an emotion has been conceptualised as 'an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer 2009c, p. 1307), which concept is significantly compatible with the research aims detailed above and the following research questions (section 2.8) in this study. This study is going to investigate phenomena through the lens of Dynamic Systems Theory (DST); therefore, CPM is within the utilisation of defining and measuring affects or emotions, which are used interchangeably in this study. Other components, such as facial expression and blood pressure, are not examined.

## **2.4 Self-perceived Affective Experience and Objective Learner Performance**

### **2.4.1 Introduction**

Regarding affective experiences in FLA, Scherer (2003) argued that generally there were two different ways to obtain these experiences in an individual: either through objective physiological indicators or through the individual's subjective reports. Some researchers have chosen both approaches as a way of triangulating their data (e.g., Dworkin, 2000; Mandryk, 2005). To be specific, objective physiological indicators refer to physiological signals including indicators of peripheral nerves such as muscle tension, and central nervous system functioning as indicated through an electroencephalogram reading (Tanaka *et. al.*, 2012). Studying the individual's affective experiences through objective physiological

indicators was usually done in the research field of neuroscience, clinical psychology, sport psychology or Human–Computer Interaction (HCI) (Tanaka *et al.*, 2012). Alternatively, other researchers obtained the individual’s affective experiences from his/her subjective reports via self-testing instruments, such as questionnaires or interviews (Scherer, 2005, 2009a). Affective experiences obtained in an SL/FL context were mostly studied through an individual’s subjective reports. These subjective reports could reveal the individual’s self-perceived types and intensities of the emotions.

Regarding FLA learner performance, there are two different approaches to trying to measure this: objective learner performance and self-evaluated learner performance. To be specific, the objective learner performance, also named as the external performance or the real-test-score performance, referred to the investigations on the relationship between a series of learner variables and the learner’s objective test scores (Zhang & Rahimi, 2014; Imai, 2010). On the other hand, the self-evaluated learner performance, was variously named as self-assessment, self-rating, self-feedback, self-appraisal, or self-reported performances (Krashen, 1982, 2009). Both types of learner performance have been examined by SL/ FL researchers.

In the SL/FL area, there have been a number of studies investigating the relationship between the individual’s affective experiences and his/her performances. According to the methods used to gather evidence about the participant’s affective experiences and the types of performances, these studies can be categorised into two groups. The first group focuses on the investigation



of the relationship between an individual's self-perceived<sup>2</sup> affective experiences and his/her objective learner performance; whereas the second group focuses on the investigation of the relationship between an individual's self-perceived affective experiences and his/her self-evaluated learner performance.

In the following sections, I will review what is known about both the relationships mentioned above. First, in terms of the relationship between the individual's self-perceived affective experiences and the objective learner performance, I will focus on the review of three different types of the relationship: an *Inverted U-shape relationship*, emotion as a *Causal Factor* to the performance, and emotion as a *Side Effect* to the performance. Second, in terms of the relationship between the individual's self-perceived affective experiences and the self-evaluated learner performance, I will focus on the review of the most frequently studied self-related theories in SLA/FLA. Finally, I will identify the research gaps and the importance to employ the Dynamic Systems Theory (DST) as an appropriate toolkit to bridge the gaps.

#### **2.4.2 Three Types of Relationships**

Three different types of relationships between the self-perceived affective experience and the objective learner performance have been identified in the major SL/FL studies. To be specific, the Yerkes–Dodson Law (1908) suggested an inverted U-shape relationship between emotions and performances. Krashen's Affective Filter Theory (1982) suggested that emotion was a causal factor in the

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<sup>2</sup> In this study, the terms of self-perceived, self-evaluated, self-reported, self-rated, self-assessed were used interchangeably. Similarly, self-evaluations, self-reports and self-assessments were used interchangeably.

performance. Sparks' and Ganschow's Linguistic Coding Deficit Hypothesis (1991) suggested that emotion was a side effect to the performance.

### 2.4.2.1 An Inverted U-shape Relationship

The Yerkes–Dodson Law (1908) originally described the relationship between arousal and performance (Figure 2.4.1). Arousal referred to the physiological and psychological state of 'being awake or reactive to stimuli' (Yerkes & Dodson, 1908, p. 472). The arousal system consisted of several different neural systems and was an essential element in many theories of emotion, such as Component Process Model (Scherer, 2009c). This Law was widely applied in the psychological field to describe the relationship between emotions, such as stress or anxiety, and performances of different tasks.

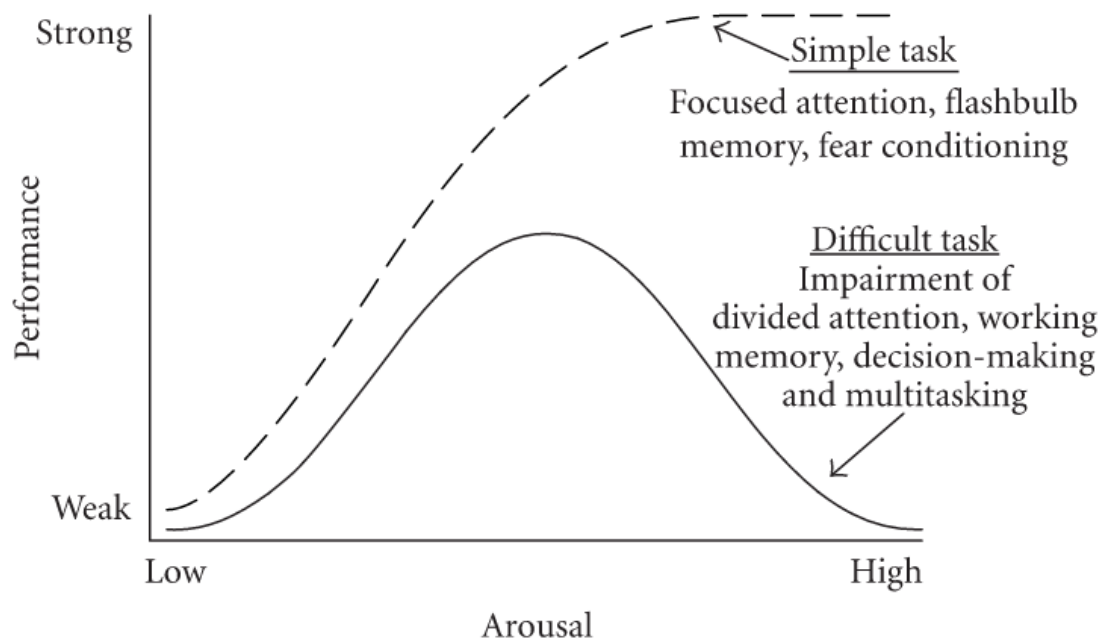


Figure 2.4.1 Yerkes–Dodson Law (1908)

The vertical axis (Figure 2.4.1) refers to the performance level and the horizontal axis refers to the arousal level. Yerkes and Dodson (1908) identified that different tasks required different levels of arousal for optimal performance. The shape of the curve can vary greatly according to the differences between the tasks (Diamond *et. al.*, 2007). The Yerkes–Dodson Law suggests that for simple tasks, the relationship between arousal and performance could be considered as linear, that is, when the arousal increases, the performance will improve.

For difficult, complex tasks, there are three levels of Yerkes–Dodson Law: low arousal level, optimal arousal level, and over-aroused level. The relationship between arousal and performance can be described as an inverted U-shape curve. Green *et. al.* (1996) illustrated that in the low arousal level, individuals were more likely to have low motivation to perform the task, and felt fatigue or less stressful. At the optimal arousal level, the individual reached his/her optimal amount of arousal to create the best performance. In the over-aroused level, the individual was over reacting, panicking and physically tense, which may result in mistakes and declines in performance.

In the SL/FL area, researchers have used the Yerkes–Dodson Law to explain the facilitating and debilitating emotions in language learning. For example, Nishimata (2008) applied the Figure 2.4.2 below to illustrate the relationship between FL anxiety and objective learner performance. Nishimata (2008) argued that the FL learner's performance improved as his anxiety level increased till the mid-point, and afterwards, the performance started to deteriorate as the anxiety level continued to increase.

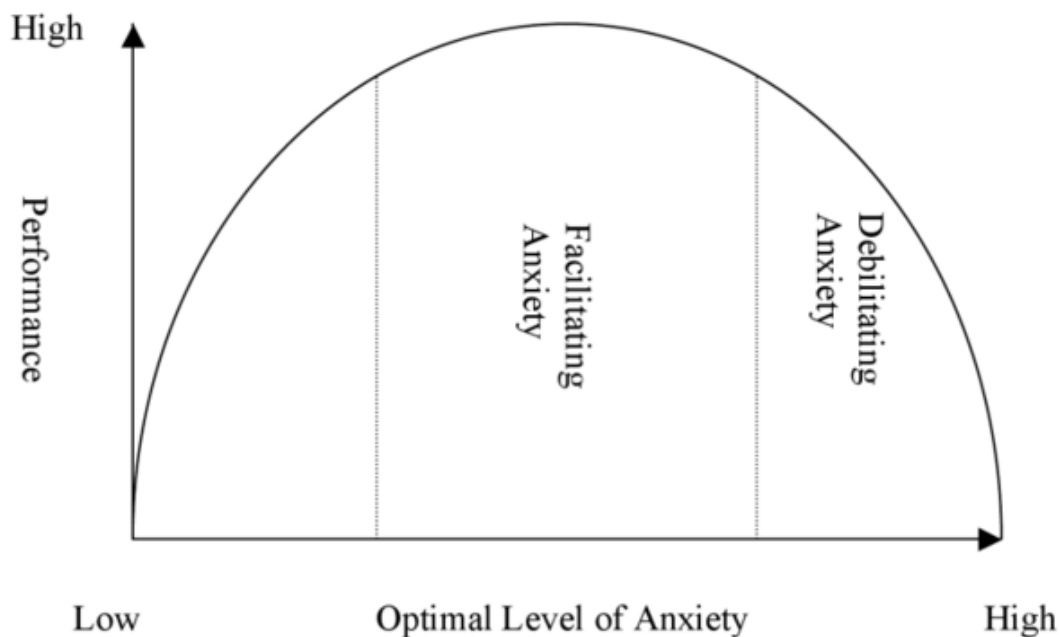


Figure 2.4.2 FL Anxiety and Learner Performance

Another feature of the application of Yerkes–Dodson Law in SL/FL learning is that researchers refer more to negative emotions, especially L2 anxiety, rather than to other kinds of negative emotions or positive emotions. For example, Chastain (1975) argued that ‘perhaps some concern about a test is a plus while too much anxiety can produce negative results’ (p. 160). Chastain’s argument agreed that the level of anxiety could have a facilitating or debilitating effect on the learner’s performance. Similarly, MacIntyre and Serroul (2014) argued that rather than the minimum or the maximum anxiety, the learner’s best performance occurred at the mid-point of the inverted U-shape model.

Considering studies on Chinese FL learners, the findings from a number of studies which have focused on the investigation of the relationship between emotion and performance could be explained by the Yerkes–Dodson Law

(Chiang, 2006; Hu & Reiterer, 2009; Shih, 2010; Chen, 2012; Lou & Wu, 2012; Xia *et. al.*, 2014; Jie, 2015). Researchers who adopt the Yerkes–Dodson Law to explain their findings agree that neither too much nor too little emotion is good for FL learners’ performances. However, their interpretations of the identified relationship vary.

For example, Jie (2015) argued that both low level and high level anxiety would cause low performance because of the effects of time pressure during the test. Learners felt too relaxed to concentrate on their tests when their anxiety level was low, and they may not finish their test when the time runs out. On the other hand, they may feel too stressful to recall what they have learnt previously when their anxiety level was high, and their constant focus on the clock may distract them from the test. In contrast, Lou and Wu (2012) argued that the intensity of emotions affected Chinese learners’ choices of their L2 strategies. The facilitating emotions at the mid-point could lead to a better choice of L2 strategies, which would in turn lead to better test performances. These findings and arguments related to Tóth (2010) who argued that although the uniformity of the relationship between emotions and performances had been identified, no consensus has been reached on the interpretation of the results.

#### **2.4.2.2 Emotion as a Causal Factor**

As Tóth (2010) argued, the reason for the inconsistent interpretation of the relationship between emotions and performances was because some researchers considered emotions as causal factors; whereas others considered emotions as

side effects. The following theories provide examples to elaborate the two conflicting views, respectively.

Krashen's (1982) Affective Filter Hypothesis was one of those theories which considered emotions as causal factors of performances. Krashen's (1982) Affective Filter Hypothesis was widely examined by Chinese FLA researchers (Wang, 2007; Peng *et. al.*, 2008; Du, 2009; Yang, 2010; Liu, 2011; Huang, 2012; Wu & Lin, 2014).

Krashen's (1982) five hypotheses are as follows:

- the Acquisition-Learning hypothesis;
- the Monitor hypothesis;
- the Input hypothesis;
- the Natural Order hypothesis;
- the Affective Filter hypothesis.

The fifth hypothesis, Affective Filter Hypothesis 'captures the relationship between affective variables and the process of second language acquisition by positing that acquirers vary with respect to the strength or level of their Affective Filters' (Krashen, 1982, p. 31). In his vision, a filter (in Figure 2.4.3) was initially introduced by Dulay and Burt (1977). This filter prevented Input from

being used in SLA. An affective filter could be considered as a mental block that can control ‘the access of comprehensible input to the Language Acquisition Device (LAD) for acquisition’ (Liu, 2015, p. 140). Moreover, the affects often referred to negative ones, such as boredom, fear, anxiety or stress. Higher or stronger affective filter could lead to less input; whereas lower or weaker affective filter could possibly lead to more comprehensible input (Krashen, 1982; 2009). In other words, a negative correlation between emotions and performances was identified by Krashen. Affective Filter Hypothesis suggests that L2 learners with stronger input may have weaker affective filter, which will ultimately result in better performance.

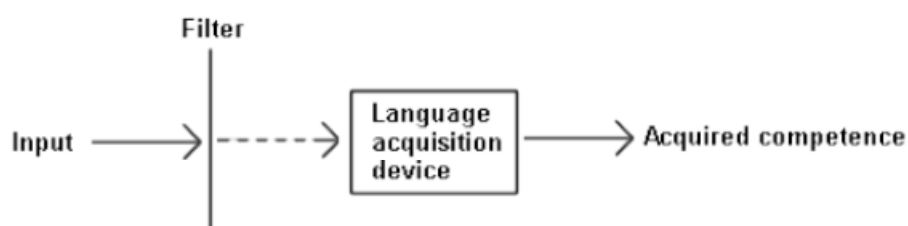


Figure 2.4.3 Affective Filter Hypothesis

Another example is Horwitz *et. al.*'s (1986) establishment of Foreign Language Classroom Anxiety Scale (FLCAS). In their vision, FL anxiety is considered as a casual factor. FLCAS is utilised to measure the amount of learner's FL anxiety through learning. FL anxiety was considered as a particular phenomenon that could cause the different performances between individuals (Horwitz *et. al.*, 1986). FLCAS consists of the three components: communication apprehension, test anxiety, and fear of negative evaluation. The scale has 33 items scored on a

5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. FLCAS has been found to be a highly reliable instrument to measure FL anxiety.

Both Krashen's (1982) Affective Filter Hypothesis and Horwitz *et. al.*'s (1986) FLCAS are widely examined in studies conducted by Chinese researchers. MacIntyre and Gregersen (2012) argued that current SL/FL studies usually focused on the role of FL anxiety in language speaking. Other emotions, especially positive emotions and other language skills, such as reading or writing were far less studied. The negative correlation between FL anxiety and speaking performances has been found in many studies (MacIntyre, 2002; Nishimata, 2008; Tóth, 2010; MacIntyre & Gregersen, 2012; Dewaele & MacIntyre, 2014; Dörnyei *et. al.*, 2014). The interpretation of such relationship concentrated on the effect of the learner's willingness to communicate (Tóth, 2010). For example, Liu and Jackson (2008) identified that there was a negative relationship between the learners' anxiety level and their speaking performances. Their findings suggested that more anxious learners were less willing to use the L2 to communicate. Similarly, Dörnyei (2005) argued that L2 learners with higher level of anxiety appeared to be reluctant to interact in the L2, which ultimately resulted in the failure of improving their speaking performances. In general, theories that consider emotions as causal factors place emphasis on how emotions trigger performance, especially on how higher level negative emotions inhibit better performances.



### 2.4.2.3 Emotion as a Side Effect

In contrast, Sparks and Ganschow (1991) held an alternative view of the relationship between FL learners' perceived affective experiences and their objective performances. Their Linguistic Coding Deficit Hypothesis (LCDH) suggests that emotions could be considered as side effects of the performances.

LCDH provided 'a viable alternative to affective explanations for FL learning problems' (Sparks & Ganschow, 1991, p. 9). LCDH assumed that 'FL learning... is enhanced or limited by the degree to which students have control over the phonological, syntactic, and semantic components of the linguistic code. A deficiency in one or more of the components is likely to affect the student's ability to learn a FL' (Sparks & Ganschow, 1991, p. 10). Sparks and Ganschow (1991) believed that FL learning was built on native language skills. Learner's FL competence was based on three linguistic codes, namely, phonological code, syntactic code and semantic code in the native language. In their vision, learner's affective experiences were merely a side effect caused by the linguistic deficiency through learning.

This alternative perspective was also empirically validated by several studies (Ganschow & Sparks, 1996; Sparks *et. al.*, 2000; Sparks & Ganschow, 2007, Hu, 2008). The findings from above studies concentrated on the emotion of anxiety and FL performances. For example, Sparks and Ganschow (2007) found out that FL learners with lower language aptitude tended to report anxiety at a higher level. Rather than suggesting emotions as causal factors of academic performances, they argued that the learners' language aptitude and native

language skills influenced the performances. The learners' perceived emotions 'may reflect students' levels of native language skills and foreign language aptitude' (Ganschow & Sparks, 1996, p. 208).

LCDH was validated by many studies. Ganschow and Sparks (1996) argued that LCDH was a reliable tool to investigate how the L1 linguistic deficiency could possibly result in SL/FL learning difficulties. However, MacIntyre (1995) in his paper, *How Does Anxiety Affect Second Language Learning? A Reply to Sparks and Ganschow*, argued that LCDH 'makes a significant omission by assigning mere epiphenomenal status to affective variables in general and language anxiety in particular' (p. 90). MacIntyre (1995) also argued that there was no doubt that learner performances could trigger affective changes; however, it should not be neglected that affective variables would influence language aptitude and language achievement. All in all, in MacIntyre's vision, it is questionable to consider emotions as side effects. On the other hand, Sparks and Ganschow (1995) in their paper, *A Strong Inference Approach to Causal Factors in Foreign Language Learning: A Response to MacIntyre*, defended themselves that, 'language aptitude is likely to account for the largest part of the variance in FL learning... affective variables can influence FL learning, although the instances in which they play a causal role is likely to be small' (p. 235). Sparks and Ganschow (1995) insisted on their views of considering emotions as side effects.

#### **2.4.2.4 Emotions as Causes or Effects?**

As Tóth (2010) argued, the question of whether to consider emotions as casual factors or side effects is still debated by SL/FL researchers. Regarding this

controversial issue, no consensus has been reached till now. The inverted U-shape relationship between emotions and performances belongs to the view of considering emotions as casual factors. So the question here is, emotion and performance, which one happens first? For example, does an individual perform badly in an exam because he or she feels very anxious; or the other way around?

A logical solution to this conundrum is that both factors are operating in a vicious cycle. Coulson and Duff (1998) argued that an emotion is ‘both cause and effect of intentional behaviour [performance]... [and] arises as a direct result of behaviour [performance], but then acts to modify that behaviour [performance] through perception and inference. None of these systems can act in isolation from the others’ (p. 69). The behaviour that Coulson and Duff mentioned can refer to the learner’s performance in the SL/FL area. In other words, emotions and performances are suggested to be considered as happening and operating at the same time as a whole unit. On the other hand, Hegel (1807) illustrated a similar issue from a dialectical perspective in his famous book *The Phenomenology of Spirit*. The nature of the two conflicting views is because we are approaching a linear cause-and-effect relationship. The reason for we are reaching such a paradox is because we only see things from a ‘this causes that’ perspective.

‘The bud disappears when the blossom breaks through, and we might say that the former is refuted by the latter; in the same way when the fruit comes, the blossom may be explained to be a false form of the plant’s existence, for the fruit appears as its true nature in place of the blossom. These stages are not merely differentiated; they supplant one another as being incompatible with one another.

But the ceaseless activity of their own inherent nature makes them, at the same time, moments of an organic unity, where they not merely do not contradict one another, but where one is as necessary as the other; and this equal necessity of all moments constitutes alone and thereby the life of the whole.’ (Hegel, 1807, 2006, p.68)

Hegel’s illustration describes that two opposing parts can be mutually exclusive; however, one of the two parts can only depend on the other's existence for its own existence to make sense. It might be possible to draw on Hegel’s illustration to describe the relationship between self-perceived affective experiences and objective learner performances. Both self-perceived affective experiences and objective learner performances exist and operate in an iterative system as a whole. Emotions can cause performances just as much as performances can cause emotions.

In section 2.4, I have discussed the relationship between the self-perceived affective experiences and objective learner performances. Comparing to the relatively substantial studies with a focus on the exploration of self-perceived affective experiences’ relationship with objective learner performances in SLA/FLA, few studies can be found with a focus on its relationship with self-evaluated learner performances. Can we use the self-evaluation as a proxy for the objective performance to identify whether the relationship between the self-perceived affective experiences and the self-evaluations follows the inverted U-shape curve? This question will be further discussed in section 2.6.

## **2.5 Self-perceived Affective Experience and Self-evaluated Learner**

### **Performance**

#### **2.5.1 Self-evaluations in SLA/FLA**

Regarding the relationship between the self-perceived affective experiences and the self-evaluated learner performances in SLA/FLA, as can be discovered from both of the terms, the affective experiences and the learner performances are self-reported. The emphasis is particularly on the awareness of the Self. Comparing to the relatively substantial studies with a focus on the exploration of self-perceived affective experiences' relationship with objective learner performances in SLA/FLA, few studies can be found with a focus on its relationship with self-evaluated learner performances. This might be because of the fluid nature of emotions and the constant changing self recognition (MacIntyre *et. al.*, 1997). Because both self-perceived affective experiences and self-evaluated learner performances are fluid in nature, and might change from time to time, it would be very difficult to identify their relationships and conceptually illustrate the changes overtime without an appropriate toolkit (MacIntyre & Serroul, 2014).

Self-evaluation was 'a process by which students (1) monitor and evaluate the quality of their thinking and behavior when learning and (2) identify strategies that improve their understanding and skills' (McMillan & Hearn, 2008, p. 40).

The definition of self-evaluation was lack of consistency because it largely depended on the purpose of evaluation, such as evaluation of learner attitudes or diagnosis to courses (Henning, 1987). Even the term self-evaluation was variously named as self-assessment, self-rating, self-feedback, self-appraisal, or

self-report (Krashen, 2009). In the SL/FL area, Bachman (2000) identified two types of self-assessment according to evaluation purposes, namely, performance-oriented self-assessment, and development-oriented self-assessment. The performance-oriented self-assessment was used for the evaluation of the learner's performance at one particular point of time; whereas the development-oriented self-assessment was used to observe 'the participants for an extended period in order to detect changes and patterns of development over time' (Dornyei, 2001, p. 194).

From the few studies which are with a focus on self-perceived affective experiences' relationship with self-evaluated learner performances, three features can be identified. First, these studies can be considered as the performance-oriented self-assessment. Second, these studies focus on the investigation of biases between self-evaluated and objective learner performances. Third, the only emotion that these studies are interested in is FL anxiety; and its measuring tool is either likert scale questionnaires or (adapted) Foreign Language Classroom Anxiety Scale (FLCAS).

For example, MacIntyre *et. al.* (1997) conducted a study on the exploration of biases in self-ratings and the role of SL Anxiety. They took the learners' self-evaluation of their SL proficiency prior to the tests; and these perceived SL competences were then compared with their objective test scores in a later stage. Moreover, they utilised a 7-point Likert scale questionnaire to measure the learners' SL anxiety. They drew a conclusion that learners with a high level of anxiety tended to underestimate their ability; whereas learners with a low level of anxiety tended to overestimate their ability. The underestimation referred to

lower ratings of perceived competence than that of actual one; whereas the overestimation referred to higher ratings of perceived competence than that of actual one. On the other hand, Cheng (2008) conducted a study in China that aimed to explore the relationship between FL anxiety, perceived English writing competence and actual English writing competence. Cheng utilised several instruments including adapted Foreign Language Classroom Anxiety Scale (FLCAS) and drew a conclusion that the learner's perceived English writing competence could better predict FL anxiety than their actual competence.

Although both MacIntyre *et. al.*'s (1997) and Cheng's (2008) studies investigated the relationship between FL anxiety, perceived competence and actual competence in SLA/FLA; their research emphasis, methodology, conceptual illustrations and findings largely differed. The occurrence for such differences or such inconsistent findings might be because they utilised different self constructs or gave different explanations of the same self construct (Mercer, 2012 & 2014). That is, the different understandings of the self and self-related concepts, such as self-perceived affective experiences or self-evaluated learner performances, may cause significant differences in findings. MacIntyre *et. al.* (1997) considered self-perceived affective experiences as casual factors to self-evaluated learner performances; whereas Cheng (2008) considered self-perceived affective experiences as effects of self-evaluations. Above researchers have different understandings of the role of an emotion and its relationship with performances; therefore, their findings are very different, although their research purposes are very similar.

Both self-perceived affective experiences and self-evaluated learner performances are perceptions from the learners' standpoint. A perception refers to 'the way in which something is regarded, understood, or interpreted' (Oxford Dictionaries Definitions, 2015). Perceptions have the power to reveal the learners' understandings, concerns, interests and needs through learning in different ways (Rudd, 2007). As previously stated, comparing to the substantial number of studies with an emphasis on the investigation of the relationship between the individual's self-perceived affective experiences and the objective learner performances, the number on the self-evaluations retains certain growing space. Regarding the self-perceived affective experiences, in the SL/FL area, a given emotion is usually tied up with the discussion of certain self-related theories (Bernat & Gvozdenko, 2005). For example, the emotion of fear is usually discussed together with the Possible Selves Theory, and the dejection-related emotion of disappointment is usually discussed together with the Self-discrepancy Theory. In order to have a better understanding of the learners' perceptions of their affective experiences and performances, I will review the most frequently discussed self-related theories in the SL/FL area.

### **2.5.2 Different Types of the Selves**

Both self-perceived affective experiences and the self-evaluated learner performance reflect a significant awareness on the self. Williams and Mercer (2014) argued that there were an increasing number of theoretical conceptualisations of the self in SLA and researchers held multiple perspectives on the self. For example, conceptualisations of the self includes self-efficacy, self-esteem, self identity, the possible self, the contextual self, the ideal L2 self



etc.. Researchers view the self in SLA/FLA from a complexity perspective, a poststructuralist theory perspective, a motivational perspective etc. Similarly, MacIntyre *et. al.* (2009) argued that the diverse conceptualisations and definitions of the self reflected the interest from various disciplines on self-specific constructs.

Considering the relationship between the individual's self-perceived affective experiences and the self-evaluated learner performance, my focus will be on the review of Higgins' (1987) Self-discrepancy Theory which consisted of three different types of the selves; Markus' and Nurius' (1986) Possible Selves Theory, Dörnyei's (2009a) The L2 Motivational Self System and Mercer's (2014) Nested Systems of the Self. The reason to select above four self-related theories, first, is because The L2 Motivational Self System is considered as 'the most influential self-specific motivation construct in SLA' (Dörnyei & Ryan, 2015, p. 86), which is widely examined in the emotional dimensions and SL/FL performances dimensions (Csizér & Magid, 2014). Second, Both of Self-discrepancy Theory and Possible Selves Theory are widely discussed in many areas, including in the SL/FL area. The L2 Motivational Self System can be considered as a synthesis and development of both theories, particularly in the SL area. Third, Mercer's (2014) Nested Systems of the Self reflects a research alternative on the self. Rather than investigating the static personal traits, the system aims to explore the self as a dynamic system from a holistic perspective. Mercer's theory is also an attempt to respond to MacIntyre's and Serroul's (2014) concern of whether researchers are employing an appropriate toolkit to explore the dynamic phenomena in SLA. Fourth, all of the four theories focus on the elaboration of

the selves, and in the meantime, depict the relationship between emotions and performances. Therefore, the four theories are selected to be reviewed in the following sections.

### **2.5.2.1 Higgins' (1987) Self-discrepancy Theory**

Higgins (1987) defined three basic domains of the self: the actual self, the ideal self, and the ought self.

- ‘the *actual* self, which is your representation of the attributes that someone (yourself or another) believes you actually possess’;
- ‘the *ideal* self, which is your representation of the attributes that someone (yourself or another) would like you, ideally, to possess (i.e., a representation of someone's hopes, aspirations, or wishes for you)’;
- ‘the *ought* self, which is your representation of the attributes that someone (yourself or another) believes you should or ought to possess (i.e., a representation of someone's sense of your duty, obligations, or responsibilities)’.

(Higgins, 1987, p.320-321)

In other words, the three types of the selves can also be explained as follows: the actual self refers to your or someone else’s beliefs of what kind of representation you actually possess; the ideal self refers to the representation you would like to

possess; and the ought self refers to the representation you should possess.

Furthermore, Higgins (1987) argued that there were four types of self-discrepancies when an individual compared between different types of selves. The self-discrepancies are usually accompanied by negative psychological responses.

The first type of discrepancy is between the actual self (own) and the ideal self (own). If an individual possesses this type of discrepancy, his or her actual performance does not match that he/ she would like to achieve. Such unfulfilled desires are frequently accompanied by the absence of positive outcomes and 'dejection-related emotions' (Higgins, 1987, p.322), for example, disappointment, frustration or dissatisfaction. The second type of discrepancy is between the actual self (own) and the ideal self (other). If an individual possesses this type of discrepancy, his or her actual performance does not match the ideal performance that some significant other person hopes that he or she would achieve. People with this type of discrepancy are likely to believe their significant others would be disappointed of them. Such concerns are frequently accompanied by the absence of positive outcomes and emotions such as shame or embarrassment. The third type of discrepancy is between the actual self (own) and the ought self (other). If an individual possesses this type of discrepancy, his or her actual performance does not match the duty or obligation that some significant other believes that he or she would achieve. It is likely that the violation of the prescribed duties is accompanied by punishment. This type of discrepancy is frequently accompanied by the presence of negative outcomes and 'agitation-related emotions' (Higgins, 1987, p.323), such as fear or resentment. The fourth

type of discrepancy is between the actual self (own) and the ought self (own). If an individual possesses this type of discrepancy, his or her actual performance does not match the duty or obligation that he himself or she herself believes to achieve. This type of discrepancy is frequently accompanied by the presence of negative outcomes such as self-punishment; and emotions, such as guilt, self-contempt, or uneasiness.

### **2.5.2.2 Markus' and Nurius' (1986) Possible Selves Theory**

Markus and Nurius (1986) defined that the possible selves were 'cognitive manifestation of enduring goals, aspirations, motives, fears and threats' (p. 954). They categorised three types of possible selves: 'ideal selves that we would very much like to become'; 'selves that we could become', and 'selves we are afraid of becoming' (p. 954). Carver *et. al.* (1994) paraphrased the possible selves as the selves people believed they would like to become, they could become, and they are afraid of becoming.

Furthermore, Markus and Nurius (1986) also provided two extreme examples to elaborate the first and the third type of possible selves. 'The possible selves that are hoped for might include the successful self, the creative self, the rich self, the thin self, or the loved and admired self, whereas the dreaded possible selves could be the alone self, the depressed self, the incompetent self, the alcoholic self, the unemployed self, or the bag lady self' (Markus & Nurius, 1986, p. 954). On the other hand, Dörnyei (2009a) pointed out that Markus' and Nurius' elaboration clearly represented the selves people believed they would like to become, and they are afraid of becoming; however, what exactly the selves

people believed they could become was not presented. The selves people could become might refer to the default option of the 'likely' selves (Carver *et. al.*, 1994). Dörnyei (2009a) further pointed out that Markus' and Nurius' possible selves referred to 'the best case, the worst case and the default scenarios' (p. 12).

Possible selves were 'cognitive components of the self-concept that are future-oriented' (Chan, 2014, p.22). If considering the possible selves as incentives, the past selves, the present selves, and the future selves were also needed to be mentioned (Markus & Nurius, 1986). Carroll *et. al.* (2009) argued that the past selves reflected the individual's self-knowledge structures and shaped the particular behavioural pattern to explain why people felt and changed in a specific way. Furthermore, the image of the future selves provided the evaluative context for the present selves. Wakslak *et. al.* (2008) argued that the future selves could be divided into the selves at a distant-future time point and the selves at a near-future time point. The selves at a near-future time point were more likely to motivate individuals to take actions than the selves at a distant-future time point (Wilson & Ross, 2001). In addition, Oyserman *et al.* (2004) argued that the possible selves could have self-regulatory effects. For example, the emotion of fear which was usually accompanied by the selves people are afraid of becoming, together with the specific plans and learning strategies which were accompanied by the hoped-for possible selves they would like to become, could be powerful incentives for the present selves to achieve their desired performances (Hoyle & Sherrill, 2006).

### **2.5.2.3 Dörnyei's (2009a) L2 Motivational Self System**

Dörnyei (2009a) established a self-related theory in SLA, the L2 Motivational Self System. This system consists of three components, namely, *the Ideal L2 Self*, *the Ought-to L2 Self*, and *the L2 Learning Experience*.

L2 Motivational Self System consisted of three components:

- ‘*Ideal L2 Self*, which is the L2-specific facet of one’s “ideal self”: if the person we would like to become speaks an L2, the “*ideal L2 self*” is a powerful motivator to learn the L2 because of the desire to reduce the discrepancy between our actual and ideal selves. Traditional integrative and internalised instrumental motives would typically belong to this component’;
- ‘*Ought-to L2 Self*, which concerns the attributes that one believes one *ought to* possess to meet expectations and to *avoid* possible negative outcomes. This dimension corresponds to Higgins’s ought self and thus to the more extrinsic (i.e. less internalised) types of instrumental motives’;
- ‘*L2 Learning Experience*, which concerns situated, “executive” motives related to the immediate learning environment and experience (e.g. the impact of the teacher, the curriculum, the peer group, the experience of success). This component is conceptualised at a different level from the two self-guides and future research will hopefully elaborate on the self aspects of this bottom-up process’.

(Dörnyei, 2009a, p. 29)

The first two components closely related to Higgins' (1987) Self-discrepancy Theory and Markus' and Nurius' (1986) Possible Selves Theory. In the SL area, *the Ideal L2 Self* refers to the self with confidence in the target language whom the L2 learner would like to become. *The Ought-to L2 Self* refers to the self who is 'demanded to live up to expectations set by others' (Chan, 2014, p. 35) and tries to avoid that he/she is afraid of becoming.

Dörnyei (2009a) argued that the empirical validation of the L2 Motivational Self System took place in five different countries, namely, China, Hungary, Iran, Japan and Saudi Arabia. For example, Campbell and Storch (2011) designed a longitudinal qualitative study on seven English learners of Chinese in an Australian university. They utilised a bottom-up approach and found out that all eight factors, namely, 'Language Learning History, Language Related Enjoyment, Personal Satisfaction, External Pressure/Influences/Incentives, Positive Feelings Regarding China/Chinese People, Personal Goals, Desired Level of L2 Competence, Identity Factors' (p. 171) could contribute to the L2 learners' motivations and performances. The eight factors were initially proposed by Ushioda's (2001) and were considered as compatible with the L2 Motivational Self System (Dörnyei, 2009a).

L2 Motivational Self System was considered as 'the most influential self-specific **motivation** construct in SLA' (Dörnyei & Ryan, 2015, p. 86, emphasis added). In the meantime, this theory was also widely utilised to explore the learner's emotions and performances in the SL/FL area (Csizér & Magid, 2014). For example, Papi (2010) hypothesised and examined the relationship between the English anxiety, intended effort and three other components by utilising this

theory. Papi (2010) drew a conclusion that the *Ideal L2 Self* and the *L2 Learning Experience* negatively correlated with English anxiety. Dörnyei's (2009a) L2 Motivational Self System will be further discussed in Chapter Five.

#### 2.5.2.4 Mercer's (2014) Nested Systems of the Self

Mercer's (2014) *Nested Systems of the Self* (Figure 2.5.1) was a conceptual framework developed in the FL area and reflected a research alternative on the self. Rather than investigating the static personal traits, this theory presented 'a useful way of integrating differing self constructs into a more holistic model is to conceptualise the different facets of the self as part of a larger complex dynamic system' (Mercer, 2014, p.139). An explicit illustration of Dynamic Systems Theory (DST) will be presented in Section 2.7.

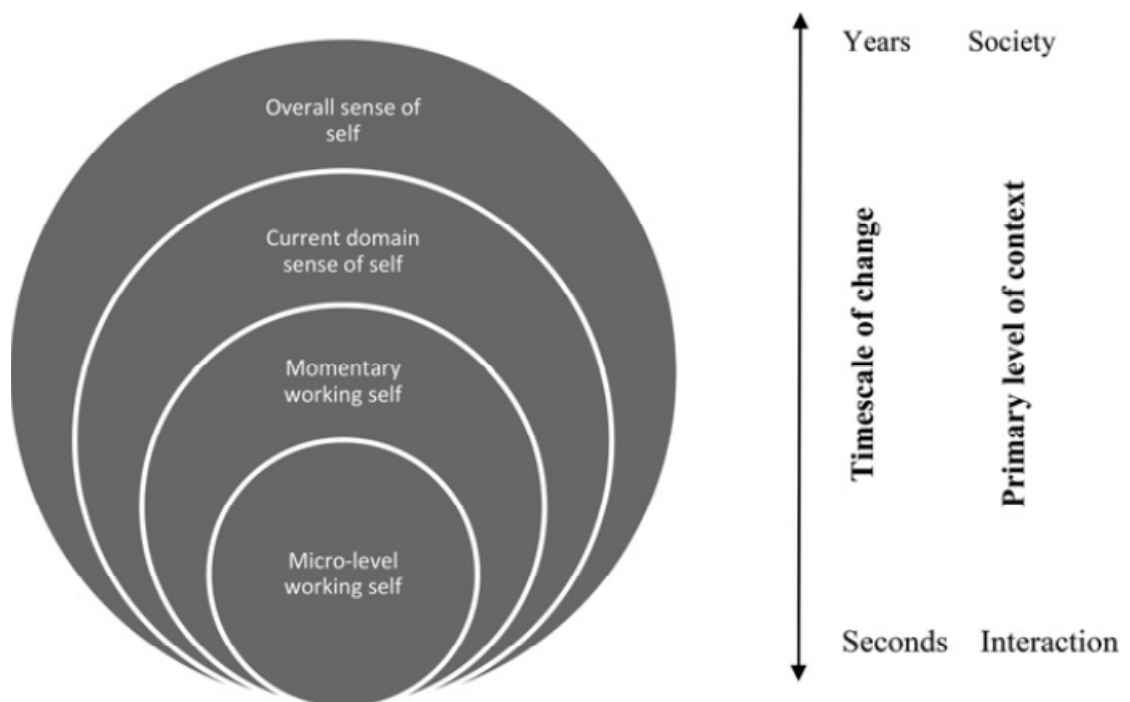


Figure 2.5.1 Nested Systems of the Self



Mercer (2014) explored the self from a DST perspective and conceptualised the self as ‘as a series of nested systems of different layers of the self... comprising multiple layers of the self that differ in scope, evolve over different timescales and are interconnected with different types or levels of contexts’ (p. 140-141). Mercer (2014) conceptualised the self as a trail of self constructs that differed in size, timescales and contexts within a holistic nested system of the self. Existing self constructs could be, to some extent, reflected in the Nested Systems of the Self.

In other words, the establishment of such nested system attempted to solve the problem of inconsistent self terms (Mercer, 2014). Because researchers were holding different understandings of the self and its relationship with other variables, such as context; other researchers might have confusions if they compared findings from studies potentially exploring different self constructs (Mercer, 2014). In response to this issue, the Nested Systems of the Self provided a holistic model that could conceptualise the self as ‘a series of nested systems of self constructs that differ in size as well as timescales of their dynamics’ (Mercer, 2014, p140-141). For example, in the SL area, self-efficacy was typically defined as an individual’s belief in his/her own ability to complete tasks (Ormrod, 2010); and self-esteem was typically defined as an individual’s overall subjective evaluation of the self (Hewitt, 2009). By utilising the Nested Systems of the Self, it is possible conceptualise self-efficacy as ‘being limited in scope and size and tightly bound with contexts and thus typically evolving over timescales in terms of minutes rather than years’; whereas self-esteem as ‘being broad in scope and size and as evolving over the many years of the person’s lifespan’ (Mercer, 2014,

p. 141). As a result, different self-related terms are possible to be defined in the same framework. Mercer's theory is also an attempt to respond MacIntyre's and Serroul's (2014) concern, aiming to employ an appropriate toolkit to integrate different self constructs into one holistic model.

## **2.6 Research Gaps**

Four research gaps in terms of the relationship between self-perceived affective experiences and self-reported performances have been identified. First, in terms of this relationship, two conflicting views of the role of an emotion exist. These views diverge on the question of whether to consider emotions as causes or effects. For example, as previously stated, although both MacIntyre *et. al.* (1997) and Cheng (2008) investigated the relationship between FL anxiety and self-reported performances in SLA/FLA, their research emphasis, methodology, conceptual illustrations and findings largely differed. This is because in essence, MacIntyre *et. al.* (1997) considered emotions as causes; whereas Cheng (2008) considered emotions as effects.

In response to this issue, Coulson and Duff (1998) and Hegel (1807) suggested that a logical solution to this conundrum was to consider both emotions and performances existing and operating in an iterative system as a whole. Emotions can cause performances just as much as performances can cause emotions. With this dialectical solution in mind, we do not ask questions, such as 'Does positive emotions lead to better self-evaluations?' because such a question suggests a linear cause-and-effect relationship. However, another question is immediately raised, 'How can we study the relationship between self-perceived affective

experiences and self-evaluated learner performances which are both fluid in nature, and might change from time to time?’ This question focuses on whether an appropriate toolkit exists to facilitate studying such an unstable and dynamic unit (MacIntyre & Serroul, 2014).

Second, few studies can be found which have focused on the relationship between the intensity of an emotion and self-evaluated learner performances. A question is raised, ‘What is the relationship between the intensity of an emotion and the learner’s self-evaluations?’ Can we use the self-evaluation as a proxy for the objective performance to identify whether the relationship between self-perceived affective experiences and self-evaluations follows the inverted U-shape curve in the manner suggested by studies building upon the Yerkes-Dodson original hypothesis (Yerkes & Dodson, 1908, p. 472)?

Third, researchers have tended to stick to well-established theories and frameworks (Howe & Lewis, 2005). For example, a discrete emotion, FL anxiety in particular, has been much more studied than other positive or negative emotions, or several simultaneous emotion blends. On the other hand, a given emotion is usually tied up with the discussion of certain self-related theories (Bernat & Gvozdenko, 2005). For example, fear is usually discussed together with the Possible Selves Theory, and disappointment is usually discussed together with the Self-discrepancy Theory.

When we start to conduct our studies with a well-established theory, such as the Possible Selves Theory, it allows us to see certain things. However, in the meantime, as we are strongly pushed by a well-established theory, it may also

prohibit us from seeing other things. With such a limitation on how we see problems in mind, a question is raised, 'If we keep a more open mind, can we identify emotions other than those which were usually discussed together with a given theory?'

Fourth, although there are a number of studies with a focus on the exploration of emotions in SLA/FLA or of self-evaluations in SLA/FLA, few studies discuss the relationships between these. From the few studies with a focus on self-perceived affective experiences' relationship with self-evaluated learner performances, a performance-oriented self-evaluation used for the evaluation of the learner's performance at one particular point of time is predominantly studied (Bachman, 2000). A more development-oriented self-evaluation used to observe 'the participants for an extended period in order to detect changes and patterns of development over time' (Dörnyei, 2001, p. 194) is understudied.

With above concerns in mind, I am interested in the question, 'What is the relationship between the learners' self-perceived affective experiences and their self-evaluated performances?' I employ the Dynamic Systems Theory (DST) as an appropriate toolkit to assist me to study such phenomena which are fluid in nature, and might change overtime. The rationale first is that DST would allow me to situate emotions and performances in one iterative system. In this dynamic system, both emotions and performances exist and operate equally at the same time (in response to the first research gap). Second, DST would allow me to keep an open mind to study several simultaneous emotion blends rather than discrete emotions. Because I defined an emotion as 'an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer 2009c, p.

1307). That is, emotions are what people say they are (Frijda *et. al.*, 1995), rather than predetermined by researchers or tied up with the discussion of certain well-established self-related theories (Bernat & Gvozdenko, 2005) (in response to the third research gap). Third, DST would allow me to investigate the intensity of emotions and the learners' self-ratings of their performances over time. DST would also allow me to identify the learners' developmental trajectory through a period of time (in response to the second and fourth research gap). Therefore, I employ DST to facilitate researching and comparisons. In section 2.7, I will elaborate DST's origins and characteristics. The main research question in this study is as follows:

From a dynamic perspective, what is the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom?

## **2.7 Dynamic Systems Theory**

One problem in using traditional research paradigms which deal with issues involving linear, cause– and –effect models (de Bot *et. al.*, 2007) is that ‘variables are often examined in isolation, which means that researchers usually focus on group data and neglect the developmental paths of individuals’ (Chan, 2014, p. 71). At this point, I venture to investigate the relationship between self-perceived affective experiences and self-reported performances through the lens of Dynamic Systems Theory (DST). DST has been applied as the primary framework in this study in order to explain how different components interact with each other in one system (Larsen-Freeman, 1997). In the following sections,

I will bring together several main researchers' studies dealing with a variety of aspects of DST's application in SLA/ FLA. I will introduce DST's origin, development and key characteristics, as well as how abstract DST concepts from natural science are translated into tangible SLA/FLA terms which are acceptable to social science researchers.

### **2.7.1. Definitions of Systems**

In order to investigate the relationship between self-perceived affective experiences and self-reported performances through the lens of DST, we need to understand what a system is first. A System is 'a set of things working together as parts of a mechanism or an interconnecting network; a complex whole' (Oxford Dictionaries Definitions, 2015). Larsen-Freeman (2006 & 2014) argued that a system 'means a set of interrelated components' (p. 18). Cotsaftis (2009) argued that systems can be categorised by their specific behaviours into three states, namely, simple, complicated, and complex. Similarly, Snyder (2013) illustrated the differences between simple, complicated, and complex systems in the educational context. In his version, a simple system referred to 'a formula can be followed and repeated with relatively little expertise and be expected to produce roughly uniform results'. A complicated system required 'higher order expertise' and that 'a variety of fields may need to be drawn upon in order to produce a successful result'. A complex system began 'as collections of individual actors who organise themselves and create relationships. These relationships form in response to positive or negative feedback – though a degree of randomness is inarguably involved as well. New structures and behaviours then emerge as the actors act and react to each other.' (p. 7-11).

As can be seen from Snyder's analysis (2013), in a simple system, a few interactions happened between a small number of components, which was governed by well-defined laws. A complicated system was controllable and originated from causes that can be individually distinguished. The system could be addressed step-by-step, and a proportionate output could be identified for every input (Poli, 2013). Snyder (2013) argued that the main difference between a simple system and a complicated system is that in a simple system, 'cause equals effect'; whereas in a complicated system, 'cause and effect are not self-evident but can be teased out through analysis' (p. 7). Compared to a complicated system, the cause of a complex system could not be individually distinguished. It resulted from multiple interactions within an entire system and a small input may cause disproportionate outputs (Poli, 2013). As de Bot *et al.* (2007) argued, the interactions of different components within a system may be complicated but not complex.

### **2.7.2 DST's Origin and Development in SLA/FLA**

DST has its origin in Newtonian mechanics, which was associated with a set of physical laws in Kinematics describing the relationship between the motion of objects and the forces determining them (French, 1971). Dynamic Systems Theory (DST) was defined thus: 'an evolution rule that defines a trajectory as a function of a single parameter (time) on a set of states (the phase space) is a dynamical system' (Meiss, 2007, p. 105). Meiss (2007) pointed out that one of the important features of DST was its evolution. Neither a simple system nor a complicated system involved an evolution process. DST initially 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. Dörnyei (2014) argued that a system could be considered as complex or dynamic if it had three key features, 'if (a) it has at least two or more elements that are (b) interlinked with each other but which also (c) change independently over time' (p. 81).

Larsen-Freeman (1997) was the first person to apply DST to SLA investigations. She provided a possible answer to the question, 'Can DST which was normally used in the natural sciences field be applied in the social science field?' The simple answer is 'yes', because the dynamic system operated analogously in both natural science and social science fields in that the subsystems were embedded hierarchically at different levels in nature. Moreover, de Bot *et al.* (2007) argued that social science researchers may wish to apply metaphors to translate abstract DST concepts in natural science field into tangible social science concepts. In fact, DST has been flourishing in many areas: from economics to infectious diseases; and from meteorology to the solution of practical problems, such as heart-rate control, and oil drilling.

Although DST is a relatively novel research paradigm in SLA explorations (van Geert & Steenbeek, 2005), more researchers have shown increasing interest in challenging this field. This may be because 'once we began to view development from a dynamic and selectionist approach, we found the ideas so powerful that we could never go back to other ways of thinking. Every paper we read, every talk we heard, every new bit of data from our labs took on new meaning. We planned experiments differently and interpreted old experiments from a fresh perspective' (Thelen and Smith, 1994, p. 341).



The terms complex and dynamic were normally used as synonyms (Dörnyei, 2014). It is admitted that more scholars have tended to integrate theories which are defined as complex, such as Complex Adaptive System (CAS), and dynamic, such as Dynamic Systems Theory (DST), rather than separating them, because of their overlapping characteristics, for example, self-organisation and non-linearity. Several instances can support this trend. For example, Larsen-Freeman (2014) used the term Complex Dynamic Systems Theory (CDST); de Bot (1996) preferred the term Complexity Theory (CT); Ellis and Larsen-Freeman (2006) used the term Complex Adaptive System (CAS); Dörnyei (2014) used the term Dynamic Systems Theory (DST), etc. de Bot *et al.*, (2007) argued that the different names being used to describe ‘how the interacting parts of a complex system give rise to the system’s collective behaviour and how such a system simultaneously interacts with its environment’ (Larsen-Freeman & Cameron, 2008, p. 1) usually referred to similar approaches.

Considering the development of DST’s applications in SLA/ FLA, several researchers focus on this topic in particular. Larsen-Freeman is a pioneer proposing the use of Chaos/Complexity Theory in SLA studies in 1997 and developing it onwards. She also developed a 16-step procedure with Lynn Cameron in 2008 to suggest how a complexity thought modelling can be used as an ‘analogical model’ (p. 40) to investigate a system. In 2012, she additionally elaborated 12 general principles for transdisciplinary researches. In 2014, she outlined ten lessons from Complex Dynamic Systems Theory based on her own researches and observations.

de Bot specialised in using 'quantitative methods' to establish computational models across different timescales. de Bot (2008) also introduced Bak's (1996) metaphor to illustrate an important feature in DST, the concept of attractor state. He pointed out that a critical point as an attractor in a dynamic system can be termed as self-organised criticality (SOC). SOC can be metaphorically described by Bak's (1996) idea of a *'sandpile'*. As more and more grains of sand drop onto a table, the cone-shaped pile grows steeper and finally causes avalanches after reaching a critical level. de Bot suggested that the relationship between the language input and outcome can be equated to that of the sand and the avalanches. Subsequently, he argued that the explorations through the lens of DST had now moved 'from a purely metaphorical use of DST notions to the use of specific methods' (de Bot, 2012, p. 92).

MacIntyre and Gregersen focused on the investigations of the motivational dynamics in SLA/FLA, particularly on the self. For example, Gregersen and MacIntyre (2014) argued that a learner's psychological desire to reduce the discrepancy between different selves will enhance his/her motivation to learn. Similarly, Mercer also specialised in L2 motivation researches and particularly focused on the concept of the self. Mercer's (2014) Nested Systems of the Self was introduced in the previous section (section 2.5.2.4). She developed a conceptual framework to integrate differing self constructs in one holistic model through the lens of DST. On the other hand, Henry elaborated the dynamism of the possible selves through three dynamic processes, namely, 'the up- and downward revisions of the Ideal L2 Self'; 'changes triggered by interaction with other self-concepts'; and 'changes in the vividness and elaboration of the image

at the heart of L2 selves and in the availability and accessibility of the Ideal L2 Self' (Henry, 2014, p. 92).

Dörnyei also focused on the exploration of motivational dynamics and the Self. As was presented in the previous section, his L2 Motivational Self System (Section 2.5.2.3) was considered as 'the most influential self-specific motivation construct in SLA' (Dörnyei & Ryan, 2015, p. 86). He tried to reconceptualise L2 Individual Differences (ID) in 2009 through the lens of DST and further claimed that it would be more fruitful if exploring the L2 Motivational Self System across lifespan, a developmental timescale. Dörnyei, with Ibrahim and Muir in 2014 reported the use of 'Directed Motivational Currents (DMC)', to regulate DST through motivational surges. Later, Dörnyei, together with Henry and Muir, elaborated DMC and illustrated how DMC could be used as frameworks for focused interventions in 2016. On the other hand, Dörnyei (2014) also proposed three research strategies as 'qualitative methods' for DST researches in SLA/FLA. They are strategies focusing on 'identifying strong attractor-governed phenomena'; 'identifying typical attractor conglomerates'; 'identifying and analysing typical dynamic outcome patterns' (p. 84). These strategies will be further discussed in Chapter Five.

Ushioda focused on how social science researchers had applied DST in their studies, particularly on using 'qualitative methods'. As DST initially developed as a mathematical tool for 'quantitative analysis', one concern was inevitably asked by social science researchers: 'How can DST be useful for qualitative studies?' Ushioda focused on research methods explorations and advocated the necessity of considering a research subject as a 'person-in-context relational view'

(Ushioda, 2009, p. 215). Because traditional research frameworks of Individual Differences (ID) in SLA focused on exploring individuals ‘with the shared characteristics of particular types’, rather than ‘with the unique characteristics of particular individuals’ (Ushioda, 2009, p. 215) and context was normally separated off as a factor external to learners. Ushioda (2014) shifted the traditional views through the lens of DST and integrated context and learner as dynamic sub-systems within the learner rather than separating them. Furthermore, qualitative researchers could investigate the systemic elements, such as affective characteristics or linguistic competence, ‘with which the focal elements interact and co-adapt’ (Ushioda, 2014, p. 51) within the language learner.

In the Chinese education system context, few studies have focused on the application of DST in FLA. Zheng attempted to apply DST in FLA and established The Dynamic Model of Foreign Vocabulary Development in 2012. Zheng (2012) conducted a one-year longitudinal study with intervals of four months. Eight Chinese learners of English from one Chinese university participated in three semi-structured interviews and seven quantitative experimental tests for this multiple-case research. Zheng (2012) explored the learner’s vocabulary development at both Macro-level, reporting the controlled productive vocabulary size and free productive vocabulary use, and Micro-level, reporting the learner’s knowledge of the paradigmatic and syntactic features of high-frequency lexical items. Furthermore, she argued that the model represented the nestedness of a dynamic system with interactions between great values in understanding the contextual influences on the learners’ L2 lexical progression.

This section brings together several main researchers' studies dealing with a variety of aspects of DST's application in SLA/ FLA. In the following section, more studies will be presented, especially in terms of DST's key characteristics and the way in which abstract DST concepts from the natural science field are translated into tangible SLA/FLA terms which are acceptable to social science researchers.

### **2.7.3 DST's Key Characteristics and Transitions of Concepts**

DST's novelty has its own challenges in 'not being part of the mainstream in research' (MacIntyre *et. al.*, 2014, p. 420). As van Geert and Steenbeek (2005) argued: 'applying dynamic systems theory is almost like begging for trouble' (p. 408). There are several difficulties in applying DST to SLA/ FLA studies. One of the main difficulties refers to terminological issues. MacIntyre *et al.* (2014) argued that terminology was one of the main difficulties in adopting DST approaches because most concepts were imported from other disciplines, and even the term DST itself has been given different names by different researchers. For example, several names usually referred to the same DST approach, such as 'Complex Adaptive Theory', 'Complexity Theory', 'Complex Dynamic Systems Theory', 'Dynamical System', "Chaos Theory", "Emergentism", 'Dynamic System Theory' etc.. And these terms in most cases were used interchangeably (MacIntyre *et. al.*, 2014). Therefore, it is important to translate different DST concepts and unify different names that refer to the same concept in order to keep consistency and to avoid ambiguity.

What is more, although there are several difficulties in researching DST in the SLA/FLA context, a growing number of researchers have developed this topic in particular. Their contributions, from elaborating terminology transitions to providing methodology solutions, attempted to push this novel paradigm away from its ‘marginalised fringe position’, and encouraged more researchers to ‘take the plunge’ (MacIntyre *et. al.*, 2014, p. 420). With the aim of understanding ‘how the interacting parts of a complex system give rise to the system’s collective behaviour and how such a system simultaneously interacts with its environment’ (Larsen-Freeman & Cameron, 2008, p. 1), it is important to appreciate DST’s key characteristics and transitions of the concepts. Five key characteristics are outlined in the following:

### **Nestedness**

DST’s nestedness referred to complete interconnectedness and ongoing interactions between all components, subsystems, and systems (Chan *et. al.*, 2014). Similarly, van Geert (2003) argued that all components within one system can themselves being considered as dynamic subsystems and these (sub)systems were ‘often interlinked on all possible levels’ (p. 658). Furthermore, such nestedness implied that ‘every system is always a part of another system’ (de Bot *et al.*, 2007, p. 8). One example given by Lowie *et al.* (2009) can explain the nestedness characteristic of a dynamic system. As Lowie *et al.* (2009) argued,

‘Language systems are complex sets of interacting variables at many different levels and sub-levels. Examples of levels are cultural, social, psychological and linguistic. Within each of these levels there are again many different sublevels.

For instance, within the linguistic sub-systems there is the sound system, the lexicon, the grammar and so on. These systems and their subsystems are interconnected' (p. 126).

Lowie *et al.* (2009) pointed out that there were several subsystems such as cultural subsystems or linguistic subsystems, all together contributing to the language systems. If we take a further step considering FLA as a dynamic system, we could argue that several different subsystems, such as the social subsystem or the psychological subsystem are nested in one dynamic FLA system. Moreover, such a nestedness characteristic offers its nature of 'Openness and Nonfinality' (Larsen-Freeman, 2014, p. 16). Larsen-Freeman (2007 & 2014) argued that a dynamic system could continue to evolve as it remained open and interacting with its environment. Instead of reaching its endpoint, the system continues to be 'autopoietic', 'self-modifying', 'returns to the same state space repeatedly' and finally results 'in a hierarchical structure of nested levels' (Larsen-Freeman, 2014, p. 16).

Because subsystems are nested (Lowie *et al.*, 2009), the whole system remains open to interact with the environment (Larsen-Freeman, 2012), and potentially each system is a part of another system (de Bot *et al.*, 2007). Researchers might therefore assume that there could be potentially unlimited numbers of subsystems for FLA system if we are to investigate FLA through the lens of DST. Therefore, one question may be raised, 'What is the point of studying an unpredictable system with potentially unlimited numbers of conditions, and changing all the time; and what form should study take?' In other words, FLA researchers may worry if they are risking undertaking an exploration which has the potential

danger of being too dynamic to study. With respect to studying a system with potentially unlimited numbers of conditions, Kelso (1995) argued that, although a dynamic system potentially took all conditions into account, the actual number of subsystems/ components/ conditions/ factors were limited and countable, due to the self-organising capacity characteristic. Furthermore, the dynamic FLA system is not totally unpredictable, instead, it was ‘predictable enough to provide a window of opportunity for meaningful research to take place’ (Dörnyei *et. al.*, 2014, p. 97).

### **Self-organising Capacity**

Dörnyei (2009a) argued that self-organising capacity was a key characteristic of DST. Self-organising capacity consists of two components: self-organisation and capacity. Self-organisation referred to ‘the spontaneous formation of patterns and pattern change in open, nonequilibrium systems’ (Kelso, 1995, p. xi). Similarly, Strogatz (2003) believed that self-organisation was a central process in a dynamic system that researchers often considered when identifying salient patterns of system behaviours. What is more, self-organisation was employed to explain how fluid, transient and nonlinear development can finally stay within relatively stable patterns, skills and schemas over time (Dörnyei, 2009b).

Capacity refers to ‘the maximum amount that something can contain’ (Oxford Dictionaries Definitions, 2015). Therefore, self-organising capacity refers to the maximum amount of spontaneous formation of patterns that a dynamic system can contain without any specific instructions.



Dörnyei (2014) argued that self-organising capacity served to ‘increase the orderly nature of the initially transient, fluid and nonlinear system behaviour’, and ‘even very complex systems tend to arrive at certain salient outcomes, and although we cannot predict in advance what these outcomes might be, when we see them we recognise them’ (p. 85). This argument can be linked to Waninge (2014), who argued that, although theoretically there could be endless possible patterns for a dynamic system, in reality, only a limited number of outcomes would be identified due to the self-organising capacity.

Therefore, here we can go back to the first characteristic, nestedness, and a related question; ‘What is the point of studying a dynamic system with potentially unlimited numbers of conditions?’ Through the lens of DST, researchers are potentially allowed to take unlimited numbers of conditions into consideration, in order to avoid over-simplifying the phenomena by focusing on fragments of reality. In addition, the characteristic, self-organising capacity, which is an attribute of a dynamic system, can function as a filter to reduce the number into countable ones. In the same way, people are often encouraged to believe that everything is possible and they are open to all possibilities to achieve their goals. This is quite right, but the statement leaves a second half behind; people have full potentials, but also limitations. The limitation is the maximum amount of conditions that people can contain.

For example, in an FL study, there can be many conditions that may influence one learner’s performance, such as even what breakfast he/she had that morning. If considering the learner’s FLA process as a dynamic system, what he/she had for breakfast is not excluded as in traditional research. Among all the potential

diverse factors, it is not for the researcher to determine what factors and how many of them relate to a dynamic system. It is the self-organising capacity functioning as a filter, and this characteristic potentially takes all possible factors into account and finalises the process, retaining all relevant ones. The factors in the system developed spontaneously, without centralised control (Eidelson, 1997) or without specific instructions (Thelen & Smith, 2006). Therefore, it is not for the researcher to decide whether breakfast matters, it is the dynamic system itself which makes the decision. As Dörnyei (2009b) explained, the components ‘emerge from the complexity of the system spontaneously, without any single component being in charge, having priority or privilege, or containing a pre-programmed instruction manual for the behavioural performance of the whole system – Self-organisation is the driver of change’ (p. 105).

### **Initial Conditions**

Another important characteristic of a dynamic system is its initial conditions. Verspoor (2014) defined initial conditions as ‘the conditions subsystems are in when the researcher starts measuring’ (p. 45). Similarly, MacIntyre and Gregersen (2012) argued that initial conditions can be defined as the states when researchers start to measure a dynamic system or subsystems/components.

Different dynamic systems may differ with one another in their initial conditions (Verspoor, 2014). The development of a dynamic system described how nested subsystems changed over time via self-organisation (Weisstein, 1999). Such developments are described as ‘iterative processes’ (Verspoor, 2014, p. 38). Iteration refers to ‘repetition of a mathematical or computational procedure

applied to the result of a previous application, typically as a means of obtaining successively closer approximations to the solution of a problem' (Oxford Dictionaries Definitions, 2015). Throughout this successive process, the result of the former iteration is also considered as the initial condition for the next iteration. Similarly, van Geert (2003) argued that 'an iterative process takes the output of its preceding state (that is, the change it underwent in the immediate preceding moment) as the input of its next stage' (p. 657).

An example is the case where a researcher would like to investigate one learner's English vocabulary development over five weeks in an FL classroom. This researcher tests the learner once a week on Mondays. This five-week English learning period is an iterative process from a dynamic perspective. Through the lens of DST, the learner's vocabulary development can be considered as a dynamic system. The learner's vocabulary, assuming it was 5,000 at the beginning of the investigation, is the initial condition 1 for this whole five-week research. On the other hand, the learner's vocabulary is enlarged weekly. As a result, at the end of week 1, if the learner's vocabulary reaches 5,100, this 5,100 is the result or the end of the first week's vocabulary learning; but is also the starting point, or the initial condition 2, for the performance in week 2. As the same process is repeated, if the learner's vocabulary reaches 5,200 in week 2, this 5,200 refers to the result for the first two weeks' learning and also the initial condition 3 for week 3.

This leads to the question: what is the initial condition for the learner's performance in week 3; is it initial condition 1 or initial condition 3? We can simply answer this question by distinguishing the seven-day learning in week 3

as a system or a subsystem. If we consider this seven-day learning in week 3 as a system, then initial condition 3 is the starting point. If we consider this seven-day learning in week 3 as a subsystem to the whole five-week learning, then initial condition 1 is the starting point. As Verspoor (2014) argued, ‘the iterative nature of the processes involved is central to the notion of development, where the next state of development is a function of the preceding state and a condition for the next state’ (p. 38). This successive nature is also linked to the fifth characteristic, timescales and time windows (de Bot, 2014).

### **Attractor States**

MacIntyre *et al.* (2014) argued that the term attractor is ‘perhaps the best illustration of the issue of terminology’ (p. 422). An attractor state refers to ‘a critical value, pattern, solution or outcome towards which a system settles down or approaches over time’ (Newman, 2009; cited in Hiver, 2014, p. 21). Similarly, MacIntyre *et al.* (2014) defined attractor states as ‘the states in which a system is most likely to settle for some period of time, even taking into account the unpredictable, chaotic elements of system behaviour. This preferred system behaviour – or equilibrium – has been referred to as an attractor state’ (p. 422).

*Attractor States* are unique to DST and are very different from the traditional term variables. Variables suggested straightforward linear causation in a traditional research paradigm; whereas an attractor state simply described a possible stable state of a system that was settled through nonlinear interactions (MacIntyre *et al.*, 2014).

There is a distinction between linear relationships and nonlinear relationships.

Bates and Carnevale (1992) define that as follows,

‘a relationship between two variables is linear if it can be fit by a formula of the type,  $y = ax + b$  where  $y$  and  $x$  are variables, and  $a$  and  $b$  are constants. Any relationship that cannot be fit by a formula of the kind is, by definition, non-linear’ (p. 9).

Chan (2014) elaborated that linearity ‘originated from the fact that the set of solutions of linear equation forms a straight line in the plane, which means that linear relationships stay constant across time and space’; whereas nonlinearity is referred to in this way: ‘the emergent behaviour is disproportionate to its contributing factors’ (p. 74). Instead of causing specific system behaviours, as the term variables suggested, an attractor state ‘is simply a convenient way to describe the behaviour of a dynamic system as it moves towards some, and away from other, critical patterns’ (Hiver, 2014, p. 21).

One example can be used to describe an attractor state. Let us pick a maple tree growing in London. We know that one of the maple leaves will finally fall to the ground. We consider the process of the leaf falling to the ground as a dynamic system. If we assume this maple leaf initially falls onto point A of the ground, we will never know where this point A is until the leaf has finally fallen. However, we could still to some extent make predictions of the possible locations for point A. We could confidently say that point A will not be any locations in Birmingham without intentional interference. Therefore, we could define the possible locations of point A as state space. State space referred to ‘the landscape

of total possible outcome configurations that a system can be found in at any given time, within which a system can transition along a unique trajectory' (Kauffman, 1995; cited in Hiver, 2014, p. 23). Thus point A, which is the possible outcome within the state space, can be defined as an attractor state.

The leaf draws a trajectory in the air for some period when it falls. Many conditions, such as humidity, solar radiation or strength of the wind, function together with the way the leaf falls and the shape of the trajectory. These conditions are subsystems and nested together, and the leaf is open to all possible conditions. The interactions between these subsystems are without explicit instructions. Their self-organising interactions are nonlinear, because we cannot predict whether the change of one or more condition(s), such as a sudden change in the sunlight, will or not cause the change of an *Attractor State*. The moment we start to measure this leaf till it finally falls to the ground is the timescale for this dynamic system. The condition of what the leaf is like at the starting point for this measurement is the initial condition.

The above example integrates five main characteristics of a dynamic system. It leaves one question for attractor states in particular, 'Do attractor states attract like magnets?' We might conclude that the leaf falls to the ground because of the attraction of gravity. Similarly, attractor states attract. However, we need to identify reason why the leaf falls to the ground. That is because there is an attractive force between the leaf and the earth. The mass of the leaf is far smaller than that of the earth, and this is the reason why the leaf falls to the ground. If the mass of the leaf were bigger than that of the earth, then the leaf would attract the earth to it instead. Rather than the earth attracting the leaf, it is the mass

difference between the earth and the leaf that matters. Therefore, we conclude that attractor states do not attract. A similar statement was also made by de Bot (2014), that attractor states ‘do not attract, they simply are. Attractors are not magnets’ (de Bot, 2014; cited in MacIntyre *et. al.*, 2014, p. 422).

In the SLA/ FLA context, Waninge (2014) provided an example to explain attractor states in an SL classroom. Because SLA/ FLA is a dynamic process, it is common that there is more than one attractor state in a dynamic system (Hiver, 2014). ‘The set of all initial conditions that allow a dynamic system to evolve to a given attractor state’ is an attractor basin (Abraham & Shaw, 1992; cited in Hiver, 2014, p. 24). Waninge (2014) explicitly defined ‘interest’ as the most salient attractor state for SLA and outlined its attractor basin from cognitive, motivational, affective and contextual factors. ‘Interest’ was not defined as a variable, which usually suggests act as a cause for engagement in learning. Waninge (2014) described ‘interest’ as ‘a complex affective-cognitive structure’ (p. 198) and explored its conglomerates of affective, cognitive and motivational processes.

## **Timescales**

In the previous sections, I briefly mentioned the characteristic timescales and time windows. Timescales referred to ‘the granularity of the developmental process; we can take a very global perspective and look at changes over the life span, sampling many moments of time’; whereas time windows referred to ‘the period of time studied’ (de Bot, 2014, p. 31). de Bot (2014) also elaborated both concepts with the phonological development of learners. He argued that if we

explored the learners' phonological development for two years and measured their performances weekly, 'two years' could be identified as the time window and 'every week' could be identified as the timescale.

It is important to distinguish timescales from time windows, because then we can identify whether the dynamic system is a system or a subsystem of another system accordingly. Moreover, we can further identify which is the system's initial condition. As previously stated, we are able to identify whether initial condition 1 or initial condition 3 is the initial condition for the learner's performance in week 3 (from the section on the third characteristic). If we consider the seven days in week 3 as a time window, then day 1 of the seven days is the starting point of this measurement and initial condition 3 is the initial condition for this system. On the other hand, if we consider the seven days in week 3 as a timescale, then the first day two weeks before is the starting point of this measurement and initial condition 1 should be the initial condition for this subsystem.

Byrne and Callaghan (2014) argued that all timescales interacted with one another from a DST perspective. Such interactions can also explain the 'iterative processes' (Verspoor, 2014, p. 38) of the development of a dynamic system. de Bot (2014) considered such development as a successive process. What happens on timescale  $N - 1$  influences the result on the focal timescale  $N$ . And this result is also the initial condition for the iteration on the next timescale:  $N + 1$ . Furthermore, de Bot (2014) particularly provided an example in an FLA context. He argued that the motivation to learn a FL can change from time to time. A learner's long-term motivation may relate to his/her career plan in the future;



whereas the short-term motivation can simply be the wish to pass a regular exam taking place on a weekly basis. In order to have a fuller understanding of the learner's motivational development in an FL class, it is important to combine data gathered from different timescales and analyse the forms of their interactions (de Bot, 2014; MacIntyre and Serroul, 2014).

## **2.8 Studying the Relationship through the Lens of DST**

In this study, I will explore the relationship between the learners' self-perceived affective experiences and their self-evaluated performances through the lens of DST. First, DST would allow me to situate emotions and performances in one iterative system. In the dynamic system of FL classroom learning, both emotions and performances exist and operate equally at the same time. Because DST has the characteristic of nestedness, both emotions and performances could be considered as operating in one system, namely, the EFL classroom learning system. As nestedness suggests that 'every system is always a part of another system' (de Bot *et. al.*, 2007, p. 8), emotions and performances could be considered as two opposing subsystems mutually exclusive; however, one can only depend on the other's existence for its own existence to make sense in one holistic system. Both emotions and performances are interconnected in one iterative system equally. In the FL learning process, both learners' emotions and performances happen at the same time. We could distinguish a system from a subsystem by differentiating its initial conditions and timescales. This is in response to the first research gap.

Second, previously, I defined an emotion as ‘an emergent, dynamic process based on an individual’s subjective appraisal of significant events’ (Scherer 2009c, p. 1307). That is, emotions are what people say they are (Frijda *et. al.*, 1995), rather than predetermined by researchers or tied up with the discussion of certain self-related theories (Bernat & Gvozdenko, 2005). The nature of nestedness is ‘Openness and Nonfinality’ (Larsen-Freeman, 2014, p. 16). Both emotions and performances could be considered as constant evolving subsystems. DST would allow me to take potentially unlimited numbers of emotions or performances into consideration, in order to avoid over simplifying the phenomena by focusing on the fragments of reality. In the meantime, the characteristic of self-organising capacity could assist me to reduce the number into countable ones. Furthermore, DST would allow me to identify the relatively stable system outcome, i.e., the attractor state, to understand how the learners’ self-perceived affective performances and self-reported performances interact with each other. This is in response to the third research gap.

Third, DST would allow me to investigate the intensity of emotions and the learners’ self-ratings of their performances over time. DST was defined thus: ‘an evolution rule that defines a trajectory as a function of a single parameter (time) on a set of states (the phase space) is a dynamical system’ (Meiss, 2007, p. 105). Therefore, DST would allow me to explore the learner’s development-oriented performances. Through the lens of DST, I could explore how the learners’ self-perceived affective experiences differ in various contexts and the learners’ performance trajectories over time. This is in response to the second and fourth research gap.

My research questions are as follows:

- From a dynamic perspective, what is the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom?

*Sub-1:* What affective experiences do the learners report as they engage in learning?

*Sub-2:* How do these self-perceived affective experiences change over short, medium and longer time scales?

*Sub-3:* How do these self-perceived affective experiences differ in various contexts?

*Sub-4:* How do self-perceived affective experiences relate to the learners' self-evaluated performances?

## **2.9 Summary**

In this chapter, I initially reviewed Kachru's Three-circle Model of World Englishes and illustrated three concepts, namely, SLA, FLA and FLD. I also explained the difficulty of defining a specific community which resulted from the geographic diversification of immigration (Massey & Capoferro, 2008) and the usage of CMC tools. While maintaining the awareness of the changing views and

merging areas between SLA and FLA, I carefully reviewed and employed theories in the SLA, FLA and FLD contexts.

Second, I explained several theories of how different scholars defined, counted and measured emotions in the general psychology context. Three main theories, namely, dimensional theories of emotions, discrete emotion theories and componential theories of emotions were mentioned. Moreover, I emphasised on three features of FL affective experiences and provided the definition of affective experiences in this study.

Third, I focused on the Yerkes-Dodson Law, Affective Filter Theory and Linguistic Coding Deficit Hypothesis to illustrate the relationship between an individual's self-perceived affective experiences and the objective performances. In addition, I also reviewed the Self-discrepancy Theory, Possible Selves Theory, The L2 Motivational Self System and Nested Systems of the Self to illustrate the relationship between an individual's self-perceived affective experiences and the self-evaluated performances. One main controversial issue was identified: some scholars considered emotions as causal factors of the performances; whereas others considered emotions as the results of the performances.

Fourth, in order to find a possible logical solution to the above conundrum, Hegel (1807) explained that we could see such an issue from a dialectical perspective instead of approaching a linear cause-and-effect relationship. I employed DST to facilitate researching and comparisons. I elaborated DST's origin and its development in SLA/FLA. I also translated DST's five key characteristics into more tangible L2 terms which were acceptable by social

science researchers. The key characteristics were nestedness, self-organising capacity, initial conditions, attractor states, and timescales. The research questions were presented at the end of this chapter.

## **Chapter Three Methodology**

### **3.1 Introduction**

In this chapter, I will illustrate the methods and methodology that have been selected to answer the research questions. First, I will introduce the origin of phenomenography, first and second order perspective and the relationship between ontological and epistemological assumptions of phenomenography. Second, I will elaborate the methodological considerations of phenomenography. Third, I will present the rationales and the research designs for the current multiple-case study. Finally, I will elaborate how I will analyse and report the data and complete the intercoder reliability and agreement checks.

### **3.2 Introduction of Phenomenography**

#### **3.2.1 The Origin of Phenomenography**

Phenomenography was defined as ‘the empirical study of the qualitatively different ways in which a phenomenon can be experienced, perceived, apprehended, understood, conceptualised’ (Marton, 1994, p. 4425). The origin of a phenomenographic approach as a methodology could be dated back to Marton and Säljö (1976) who carried out semi-structured interviews to explore the learners’ different understandings of a same piece of text. As Reed (2006) argued, Marton’s and Säljö’s study was a first attempt to use phenomenographic approach as a methodology.

Marton and Säljö (1976) aimed to understand qualitative differences between different learners in approaching the same given text. They drew a conclusion that different individuals' conceptions of experiencing the same phenomenon could be presented in hierarchical categories. Furthermore, they observed that researchers were allowed to utilise phenomenography to explore descriptions, or conceptions; rather than exploring what the nature of the phenomenon is. In other words, rather than exploring what strategies were used through learning or what the learners' actual performances were, they attempted to categorise the learners' conceptions and their ways of expressions, in order to observe 'the distinctive features and prerequisites of comprehension in these specific instances' (p. 10).

The aim of using a phenomenographic approach is to explore the different conceptions of understanding a phenomenon (Marton, 1977). 'Conceptions', 'perceptions', 'perspectives' or 'experiences' were usually used interchangeably in the phenomenography literature (Marton & Booth, 1997). The reason to use these terms interchangeably is because 'there are differences in what these terms refer to, but to suggest that the limited number of ways in which a certain phenomenon appears to people can be found, for instance, regardless of whether they are embedded in immediate experience of the phenomenon or in reflected thought about the same phenomenon' (Marton 1977, p. 97). Conception was defined thus: 'being constituted in the relation between perceiving subject and appearing object' (Bruce, 1997, p. 103). This term will be further discussed in Section 3.2.3.1. A phenomenon was defined thus: 'the combination of different ways in which an aspect of the world is conceived or experienced' (Bruce, 1999, p. 35). Bruce (1999) provided an example to make the two terms, namely, a

‘conception’ and a ‘phenomenon’ tangible and easier to approach. In his vision, if there were seven ways of experiencing information literacy in the workforce, the combination of the seven ways together represented the phenomenon of information literacy, and each way of experiencing information literacy represented a conception.

As previously stated in Chapter 2, there are several ways of defining what an emotion is and how many emotions are there. FL learners may experience more than one emotion at a time. However, a discrete emotion, FL anxiety in particular, is much more studied than other positive or negative emotions, or several simultaneous emotion blends. In addition, a given emotion is usually tied up with the discussion of certain self-related theories (Bernat & Gvozdenko, 2005). For example, fear is usually discussed together with the Possible Selves Theory, and disappointment is usually discussed together with the Self-discrepancy Theory. It will be more fruitful if we consider emotions as what people say they are (Frijda *et. al.*, 1995). My definition of an emotion, ‘an emergent, dynamic process based on an individual’s subjective appraisal of significant events’ (Scherer 2009c, p. 1307) provides the participants more space to express their conceptions. A phenomenographic approach would allow me to collect such data from the participants’ standpoint, i.e. from the second order perspective.

### **3.2.2 First and Second Order Perspectives**

Marton (1981) argued that in the phenomenographic context, the first order perspective of the world referred to ‘a statement about reality’; whereas the second order perspective of the world referred to ‘a statement about people’s



conception of reality' (p. 178, emphasis added). Marton (1981) explained that any answer to the question 'Why some children succeed better than others in school?' could be considered as from the first order perspective; while that of 'What do people think about why some children succeed better than others in school?' could be considered as from the second order perspective. In other words, from the first order perspective, 'we orient ourselves towards the world and make statements about it'; whereas from the second order perspective, 'we orient ourselves towards people's ideas about the world (or their experience of it) and we make statements about people's ideas about the world (or about their experience of it)' (Marton, 1981, p. 178).

For example, if we are trying to explore the relationship between FL learners' affective experiences and their performances from the researcher's point of view, the statements are made from a first order perspective. On the other hand, if we explore such a relationship between from the learner's standpoint, the statements are made from a second order perspective.

When I published parts of the research findings from this doctoral study in conferences and journals, three questions were frequently raised by researchers who were interested in this work. The first question is, how can we distinguish whether the participants and the researchers have the same knowledge of what an emotion is? In other words, what if the participants' self-reported emotion should be categorised as another type of emotion if taking a different method to obtain the data, such as via the objective physiological indicators? Second, how are the researchers able to know if the learners are aware of their emotions? In other words, is there a possibility that some emotions might not be known by the

learners but actually they exist at that time? The third question is, how are the researchers able to know if the learners are reporting exactly what they have experienced?

The first question refers to the issue of knowledge and the validity of the conceptions of the reality. More broadly conceived, this question actually asked the position of phenomenography between natural science (neuroscience which applies objective physiological indicators) and social science (traditional education psychology paradigm from the first order perspective). The second question refers to the awareness of the world. This question concerns the relationship between awareness and under awareness. The third question refers to the reliability of the conceptions of the reality.

So here comes to another question before answering the above. In the phenomenographic context, what is a reality? Uljens (1996) argued that reality was 'considered to exist through the way in which a person conceives of it' (p. 112). More specifically, Marton (2000) distinguished between the world and the reality:

'There is only one world, a really existing world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective. An experience is a relationship between object and subject, encompassing both.' (Marton, 2000, p. 105)

Moreover, Marton (2000) also argued that people's ways of understanding the world created knowledge about it and knowledge as such was the reality to this

specific group of people. That is, one person's reality may differ from that of another person. Let me give an example to elaborate these terms. Some people in Tanzania believe that red clay is edible and can be nutritious and healthy to their wellbeing. However, I moved the same topic to my colleagues and asked them about their perceptions of eating red clay. None of my eight colleagues held the thought that red clay was either eatable or that they would try to eat it sometime in the future. In this example, 'the red clay –as –experienced' represents the only one world. Rather than being separated from the object, the experience is 'as much an aspect of the object as it is of the subject' (Marton, 2000, p. 105). The combined perceptions of eating red clay together represents the phenomena. And 'red clay is eatable' is the reality to the specific group of people in Tanzania. In the meantime, 'red clay is not eatable' is also the reality to my colleagues. Both realities are knowledge created by different groups of people as they experience and understand the world in different ways. Moreover, such awareness of the world internally relates to the both people and the world from a phenomenographic point of view. Reality exists because of a specific group of people's awareness of the world. The world is not separated from people from a phenomenographic perspective.

Furthermore, a producer, named Abisae Maeda videoed two local persons in Tanzania to explore their views of eating red clay in 2012. One conception is 'I feel fresh when eating soil because it is tasty'; and another conception is 'It is nothing strange of eating red clay, the clay is very special'. Therefore, from a phenomenographic view, for this video clip, the combination of the two conceptions creates the phenomenon of eating red clay.

As can be seen from the example above, toward the same world, two realities exist between two different groups of people. Marton (1981) explained that both realities 'may be true independently of the other's truth or falsehood' (p. 178). From a second order perspective, the reality of 'red clay is eatable' exists through the way in which two persons in Tanzania conceive of it. Their conceptions of the phenomenon about eating red clay are different. There is a difference between reality and conceptions of reality (Marton, 1981). The first person's conception focuses on the taste of the red clays; whereas the second person's conception focuses on the speciality of the clay. Such a difference might reflect the differences of their knowledge structures, social status, or their awareness of what people outside their group might think about eating clay.

Certainly, this study is not a piece of social anthropology work. The purpose of giving the above example is to distinguish different terms in the phenomenographic context. As Marton (1981) argued, 'we consider that to find out the different ways in which people experience, interpret, understand, apprehend, perceive or conceptualize various aspects of reality is sufficiently interesting in itself, not least because of the pedagogical potentiality and necessity of the field of knowledge to be formed' (p. 178). In phenomenography, rather than exploring which reality is more 'real', the researcher's aim is to categorise the participants' descriptions (Marton, 1981, p.2001).

To move back to the first question, how can we distinguish whether the participants and the researchers have the same knowledge of what an emotion is? Three issues relate to this question, namely, the issue of knowledge, the validity of conceptions, and the position of phenomenography between natural science

and social science. Regarding the first issue, a difference in knowledge might exist between participants and researchers. This suggests that the participants' emotion, such as anxiety, might not precisely match the researcher's anxiety. Via objective physiological indicators, a researcher can give a certain emotion a meaning; however, this meaning might not be shared by the participants. This first question itself has a problem of mixing the first and second order perspective of the world. In this phenomenographic study, the research aim is to explore emotions-as-experienced from the second order perspective. The researcher's role is to provide scientific descriptions of the participants' emotions as they are described, rather than justifying the knowledge biases between the participants and the researcher. Therefore, when the participants give answers to questions, such as 'how do you feel', the researcher's role is to investigate the participants' world of reaching the answer, such as 'I feel anxious' from their standpoint. The second validity issue requires an elaboration of the researcher's role, phenomenographic interviews and coding validities. These methodological concerns of phenomenography will be illustrated in detail in Section 3.4.

Regarding the third issue, as Marton (2001) argued, 'phenomenography occupies a space somewhere between natural science (disciplines that deal with what we hold to be true about the world) and traditional social sciences (which seek to discover laws of mental operations and social existence)' (p. 145). Therefore, from a phenomenographic point of view, I am going to investigate the learners' emotions as they are described from the learners' standpoint, rather than from my classroom observations.

Regarding the second question, how are the researchers able to know if the learners are aware of their emotions? In other words, is there a possibility that some emotions might not be known by the learners but actually they exist at that time? This question addresses the learner's awareness of the world. As previously state, 'there is only one world, a really existing world, which is experienced and understood in different ways by human beings' (Marton, 2000, p. 105). From a phenomenographic point of view, the learners' awareness of the world is the only world they are able to communicate with (Prosser & Trigwell, 1999). Therefore, if the emotions can be expressed by the learner, the awareness issue is self-evident. The learners' emotions under investigation in this study are emotions-as-experienced. They exist 'through the way in which a person conceives of it' (Uljens, 1996, p. 112).

So what is awareness in the phenomenographic context? Marton and Booth (1997) defined that an individual's awareness was 'the world experienced by the person' (p. 108). Furthermore, they provided an example to elaborate the meaning of experiencing things in a certain way. To experience something in a certain way, people need to gain knowledge about the world which involved 'qualitative differences across the populations involved in it', and such qualitative differences referred to 'the way things are experienced (understood, conceptualized, apprehended, etc.) —as phenomena, situations or learning itself' (Marton & Booth, 1997, p. 86). The example is that we could identify a deer as a deer rather than something else, such as a UFO, in the woods, is because we both see the parts of the deer, such as its head, its forequarters and so on, and the relationship of its parts as a whole thing, a deer's contour. And the environment

for the deer is its standing in the woods, not flying in the air. From the above example, Marton and Booth (1997) pointed out that an experience had two aspects, namely, meaning and structure, which were ‘intertwined and occur simultaneously when we experience something’ (p. 87).

The structural aspect of experiencing *things in a certain way* has twofold, ‘discernment of the whole from the context’ and ‘discernment of the parts and their relationships within the whole’ (Marton & Booth, 1997, p. 87). As from the above example, we discern the deer (the whole) from the woods (the context or the environment); we identify the deer’s contour from its surroundings. In the meantime, we also discern the deer’s head, its forequarters and so on (the parts) and how they connected to each other as a whole (the parts’ relationships within the whole). On the other hand, the meaning aspect, or the referential aspect of an experience, when we discern the structural aspect of the deer, simultaneously, we ‘assign it a meaning’ (Marton & Booth, 1997, p. 87), which equals to a particular thing, here means a deer. The two aspects of an experience intertwined and occurred simultaneously. ‘Structure presupposes meaning, and at the same time meaning presupposes structure’ (Marton & Booth, 1997, p. 87).

Regarding the third question, how are the researchers able to know if the learners are reporting exactly what they have experienced? This question concerns about the reliability of the conceptions of the reality. This is also a methodological concern of phenomenography. Moreover, the reliability of subjective reports is also considered as a potential weakness for all of the qualitative studies that needs to be dealt with by the researchers. This question will also be further discussed in Section 3.4.

### 3.2.3 Ontological and Epistemological Assumptions

Qualitative researchers agreed on both the research approach they selected and its underlying philosophical assumptions when exploring the core issues of their studies (Creswell, 2012). Creswell (2012) described in general that four philosophical assumptions, namely, ontological assumption, epistemological assumption, axiological assumption, and methodological assumption are significantly related to qualitative research approaches. To be specific, the ontological assumption aimed to investigate ‘the nature of reality’ and ‘its characteristics’ (Creswell, 2012, p. 20). The epistemological assumption usually addressed questions as ‘What counts as knowledge?’ ‘What is the relationship between the researcher and that being researched?’ (p. 21). The researchers are likely to ‘know what they (the learners) know’ (p. 20) which is from a second order perspective, rather than the nature of reality from a first order perspective. The axiological assumption focused on the exploration of ‘the role of values’ and the methodological assumption focused on the ‘process’ and the ‘language’ of the research (p. 20).

Phenomenography, according to Booth (2008), was built on ontological, epistemological and methodological assumptions. Similarly, Bowden and Marton (2004) also declined the axiological assumption in phenomenography, because phenomenographers did not aim to make justifications of what kind of learning is good or right from the first order perspective, which was the central question of the axiological assumption. Therefore, in the following sections, I will elaborate the ontological assumption and the epistemological assumption in



phenomenography. The methodological assumption will be elaborated in another section 3.3 as it includes research process in detail.

### **3.2.3.1 Ontological Assumptions in Phenomenography**

Reed (2006) argued that a researcher should arrive at some preconceptions about the nature of their objects before determining which methodological approach to employ. Such preconceptions are ontological decisions of a study. In phenomenography, ontology referred to ‘the philosophical study of the nature of being and existence’ (Jensen & Bork, 2010, p. 1), and more precisely, it referred to the non dualistic nature of the relationship between awareness and reality (Uljens, 1996). Here, reality referred ‘to exist through the way in which a person conceives of it (the world)’ (Uljens, 1996 p. 112, explanation added). As Marton (2000) explained:

‘From a non dualistic ontological perspective, there are not two worlds: a real world, objective world on the one hand, and a subjective world of mental representation on the other. There is only one world, a really existing world, which is expressed and understood in different ways by human beings. It is simultaneously objective and subjective. An experience is a relationship between objects and subjects encompassing both. The experience is as much an aspect of the object as it is of the subject.’ (p. 105, emphasis added)

Similarly, Ramsden *et. al.* (1993) described the non dualistic nature of phenomenography as follows: ‘there are not two worlds (an objective outside world and an internally constructed subjective world). There is only one world to

which we have access –the world-as-experienced’ (p. 303). The separation between the object (the external world) and the subject (the internal thinking) was refused (Säljö, 1997).

The object and the subject are not separated in phenomenography. They are internally related to each other. Such a relationship was termed as a conception (Bruce, 2003). Rather than being considered as ‘genetically inherited by individuals’, conceptions are ‘socially constructed and reconstructed through the person’s ongoing experiences and relationships with their world’ (Lamb *et. al.*, 2011, p. 676). This argument suggests that conceptions are not something fixed; instead, they are changing from time to time. As Pherali (2011) argued, there were no ‘universal principles of the nature of knowledge or reality’ in phenomenography (p. 17). As previously stated, phenomenography was defined as ‘the empirical study of the qualitatively different ways in which a phenomenon can be experienced, perceived, apprehended, understood, conceptualised’ (Marton, 1994, p. 4425). Such different ways of understandings refers to conceptions.

This study focuses on the learners’ experiences of learning, especially on their perceived affective experiences and self-evaluations of their performances. The experiences are studied from a second order perspective, revealing the learners’ qualitative differences from the learners’ standpoint rather than the researcher’s standpoint. For example, the same phenomenon, such as the same objective exam score B+, can be understood differently, such as bad for a straight A learner, or very good for learners who rarely obtain a score higher than B from their past experiences. As Marton and Booth (1997) explained, individuals experienced the

same phenomenon in different ways because they conceptualised it ‘through their different biographies’ (p. 34). Moreover, their knowledge about the world involved ‘**qualitative differences** across the populations involved in it’ (p. 86, emphasis added).

In addition, regarding the self-perceived affective experiences, in the SL/FL area, a given emotion is usually tied up with the discussion of certain self-related theories (Bernat & Gvozdenko, 2005). For example, fear is usually discussed together with the Possible Selves Theory, and disappointment is usually discussed together with the Self-discrepancy Theory. However, from a phenomenographic perspective, the conceptions might change across time. Moreover, the participants’ awareness of the world, in particular, the referential aspect of an experience (such as B+ is a good/bad score) may vary among individuals. Therefore, instead of seeking the statement about the world, this study aims to ‘characterize the process of perception and thought in general terms’ and attempts to ‘clarify what it takes to perceive this or that phenomenon’ (Marton, 2001, p. 144 –145).

As for different biographies, phenomenography shares some similarities with ethnography, in that ‘phenomenographic research started out as an attempt to scrutinise and understand human learning by focusing on what people are in fact doing in situated practices and when studying’ (Säljö, 1997, p. 128). As having been illustrated in the previous section, the different groups of people’s realities about ‘eating red clay’ can also support this argument. Different groups of people or even people from the same group, their knowledge and awareness of the world might differ. Therefore, from a non dualistic ontological perspective, it is

important to explore what it takes to these different conceptions, which may better assist the understanding of the social and cultural constructions in the life experiences of the individuals (Säljö, 1997).

### **3.2.3.2 Epistemological Assumptions in Phenomenography**

Creswell (2012) argued that epistemology referred to a theory of knowledge and focused on the investigation of ‘what counts as knowledge’ (p. 21). In his vision, the epistemological assumption referred to the necessity of understanding how knowledge developed and how new knowledge was reached. As being mentioned in the previous section, ontology referred to ‘the philosophical study of the nature of being and existence’ (Jensen & Bork, 2010, p. 1). Sandberg (2005) argued, there was a relationship between the ontological and epistemological assumptions in phenomenography. ‘The human world is never a world in itself; it is always an experienced world, that is, a world that is always related to a conscious subject’ (p. 43). In other words, knowledge is considered as constituting ‘through lived experience of reality’; rather than as the ‘existence of an objective knowable reality beyond the human mind’ (Sandberg, 2005, p. 43-44).

Because unlike the dualistic ontology which claims the existence of two worlds: ‘a real world, objective world on the one hand, and a subjective world of mental representation on the other’ (Marton, 2000, p. 105), phenomenographers advocate a non dualistic ontological perspective that knowledge is constituted through ‘an internal relationship between an individual and the world’ (Prosser & Trigwell, 1999, p. 13).

Marton and Booth (1997) discussed the relationship between person (inner/ subject/ internal) and world (outer/ object/external), by solving Meno's Paradox from a phenomenographic perspective. Meno's Paradox is a question raised by Meno, *'how will you inquire into a thing when you are wholly ignorant of what it is? Even if you happen to bump right into it, how will you know it is the thing you didn't know?'* (Plato, *Meno*, 80d1-4) This paradox reflected 'two mutually exclusive possibilities for the relation between the seeker and the knowledge sought' (Marton & Booth, 1997, p. 137). In other words, the paradox revealed the logical dilemma of seeking for knowledge. Individuals do not need to seek the knowledge if they have already known; whereas the knowledge is not able to be found if it is not recognised.

Meno's Paradox implies the preconception that individuals do gain knowledge (Marton & Booth, 1997). This preconception suggests a dualistic perspective in that knowledge was considered as 'the known' object (external world) which could be gained by 'the knower' subject (internal world). They offered a phenomenographic solution that only one world-as-an- individual-experienced existed. The epistemological assumption suggested that our learning knowledge was 'a part of our ongoing exploration of the world, our constituting the world' (Marton & Booth, 1997, p. 138). In other words, this argument suggests when individuals start to learn something; the journey of seeking knowledge takes place. The individuals have already had the awareness of the world around them, and the knowledge they have learned turns to become a part of the world. As Marton and Booth (1997) suggested, 'learning takes place, knowledge is born, by a change in something in the world as experience by a person. The new ways of

experiencing something is constituted in the person –world relationships and involves both’ (p. 139).

As can be found from the solution to Meno’s Paradox above, the epistemological assumption in phenomenography suggests a relational position of knowledge.

Giorgi (2002) argued, ‘perhaps there are things or events in-themselves, but there is no knowledge-in-itself. There is only knowledge for a human subject who apprehends it’ (p. 9). Marton and Booth (1997) gave an example that could support Giorgi’s argument. In a classroom learning context, some teachers claim that knowledge can be told by the authority, just as the students gain knowledge from their teachers. In this regard, although individuals cannot know the knowledge if they do not have already had it, which equals to Meno’s Paradox, they can simply be told by the authority who has already had the knowledge. However, this argument is simply wrong because ‘one does have to search for the knowledge that lends meaning’ (Marton & Booth, 1997, p. 137). From a relational point of view, knowledge is constituted through the mutually intertwined relationship between the subject and the object in one world. No knowledge is out there itself without the individual’s awareness of the world. Knowledge is neither absolute nor objective/subjective; it is based on a specific encounter that relates to the world-as-experienced. In the first place, knowledge is not about knowing or seeking, it is being in the relation to subject and object simultaneously (Marton, 2000). Therefore, reality which is the knowledge created by a group of people proves itself to us at every moment (Marton, 2001).

### **3.3 Methodological Considerations of Phenomenography**

In this section, I will focus on the elaboration of the methodological assumptions in phenomenography. First, I will illustrate the common data collection methods, the researcher's role, data processing and outcomes. Second, I will also illustrate the strengths and weaknesses of phenomenography, including the validity and the reliability issues. Third, I will illustrate the rationale of employing phenomenography in this study.

As Booth (2008) claimed that phenomenography was built on its underlying ontological, epistemological and methodological assumptions. In the previous section, I elaborated the former two assumptions, and in the current section, my focus will centre on the methodological assumptions in phenomenography.

‘Phenomenography is a research method adapted for mapping the qualitative different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around them.’

(Marton 1986, p. 31)

Creswell (2012) argued that regarding the methodological assumptions, questions usually were addressed on the ‘process’ and the ‘language’ of the research (p. 20). In phenomenography, three questions are usually proposed (Reed, 2006): First, what is the common data collection method for a phenomenographic study? Second, what is the role of a researcher? Third, what is the outcome of a phenomenographic analysis? I will answer these questions in the following sections.

### 3.3.1 Common Data Collection Methods

As Reed (2006) argued, in a phenomenographic study, data should be collected from ‘a person’s experience of a phenomenon as described by that person’ (p. 5). In his vision, there were two predominant means of data collection, ‘either through an **interview** or through the **text written by the person** in response to a specific question’ (p. 5, emphasis added). A question might be raised, why are these two methods appropriate for data collection?

To answer the question, we should go back to the ontological and epistemological assumptions in phenomenography. Unlike from a positivist perspective, where *ontology* ‘assumed that there is objective reality subject to natural laws such as cause and effect and there are universal truths that can be discovered through inquiry’ (Imel *et. al.*, 2002, p. 3), phenomenographers worked from a non dualistic ontological perspective and believed that there ‘is only one world, a really existing world, which is expressed and understood in different ways by human beings’ (Marton, 2000, p.105). Consequently, reality was considered as experienced reality (Bowden, 2000) that could be studied by a researcher via the identification of ‘the research participants’ view points, thoughts, feelings, intentions and experiences [which] are accurately understood by the researcher and portrayed in the research report’ (Burns, 2000, p. 251). Because the nature of phenomenography is to get access to ‘the world-as-experienced’ (Ramsden *et. al.*, 1993, p. 303), the epistemology in phenomenography holds a relational view in which knowledge is constituted through the mutually intertwined relationship between the subject and the object in the one world. Therefore, a method can be considered as appropriate for a



phenomenographic study if it ‘facilitates a person reflecting on their experience of a phenomenon’ (Reed, 2006, p. 5). An interview or a text written by the person would allow a researcher to investigate the phenomenon through the individuals’ eyes and to make statement about their experiences from a second order perspective.

In addition, it is also important that the reported experiences can be thematised by the researcher. Marton and Booth (1997) suggested that a researcher needed to bring structure and meaning to an experience. ‘The two aspects, meaning and structure, are dialectically intertwined and occur simultaneously when we experience something’ (Marton & Booth, 1997, p. 87). The separation of structure and meaning would allow a researcher to describe the individual’s experiences from their standpoint (Reed, 2006). This argument was also supported by Marton’s and Booth’s (1997) identification of the structural and the meaning/ referential aspect of an experience, which has been discussed in Section 3.2.2.

Bowden (1996) mentioned that a ‘shared definition’ of a phenomenon under investigation needed to be established. This is because the data was ‘more dialogic in nature’ and both the researcher and the participants ‘come to a new understanding of the experience under study via a conscious process of explicit thematization’ (Felix, 2009, p. 147). The experiences should be jointly constituted by the researcher and the participants (Marton, 1994) and are thematised through a ‘conversation between two partners about a theme of mutual interest’ (Kvale, 1996, p.125).

### 3.3.2 The Role of a Researcher

Because phenomenographers attempt to explore the individual's qualitative different ways of experiencing the world, one might ask 'how does one engage with the experience of the individual' (Whittaker *et. al.*, 2014)? Marton (1994) suggested the researchers to put aside their 'preconceived ideas' (p. 4428) and to record the individual's experiences as they reported them. Similarly, Säljö (1997) suggested that phenomenographers needed to provide enough space for the participants to reflect on their conceptions of a phenomenon. Therefore, the most common method for data collection in phenomenography, the interviews, should be semi-structured with only a few key questions predetermined (Marton & Booth, 1997). This argument was supported by Collier-Reed and Ingerman (2013) who argued that phenomenographic interviews should not be established with a detailed framework beforehand. Because the aim of a phenomenographic approach is to explore the participants' lifeworld and their reflections on a particular phenomenon through their eyes, a phenomenographer should attempt to 'assume as little as possible, to adopt a second-order perspective, and to describe the world as experienced by the individual' (Richardson, 1999, p. 57).

Ashworth and Lucas (2000, p. 302-303) provided some practical steps to help phenomenographers orientate themselves in a study:

- 'make minimal use of questions prepared in advance';
- 'use open-ended questions';

- ‘engage in empathic listening to hear meanings, interpretations and understandings’;
- ‘consciously silence his or her concerns, preoccupations and judgements’;
- ‘use prompts to pursue/clarify the participant’s own line of reflection and allow the participant to elaborate, provide incidents, clarifications and, maybe, to discuss events at length’.

The above steps aim to establish a flexible environment to encourage the participants to talk about their conceptions of a particular phenomenon comfortably. The abandoning of a researcher’s ‘preconceived ideas’ (Marton, 1994, p. 4428) was also known as a process of bracketing (Marton, 1986; 1994). Bracketing referred to ‘suspending judgment’ (Marton & Booth, 1997, p. 119), ‘setting aside prior assumptions about the nature of the thing being studied’ (Ashworth & Lucas, 1998, p. 418). In other words, a phenomenographer should be cautious on his/her knowledge of the topic under investigation. The aim of bracketing is not to identify how the participants’ experiences fit into what has already been known about the topic. The researcher should stay neutral and record the participants’ experiences as they reported them, instead of making justifications of what is correct or wrong (Ashworth & Lucas, 2000).

### **3.3.3 Data Processing and Outcomes**

Dahlgren and Fallsberg (1991) outlined seven steps of data analysis process in a phenomenographic research and these are summarised as follows:

- Familiarising yourself with the data collected through interviews or written text by the individual;
- Condensing the conceptions and singling out the representatives, as the aim is to identify how do individuals experience a phenomenon at a collective level;
- Comparing what was identified from the previous step to determine differences or agreements;
- Grouping similar identifications into tentative categories;
- Clarifying the uniqueness of each category;
- Labelling each category with appropriate terms;
- Comparing the categories according to their similarities and differences.

Phenomenographers could repeat and review above steps and seek to bracket personal biases, in order to identify the qualitative different ways of experience a phenomenon. Moreover, Säljö (1996) mentioned that two terms, namely, ‘categories of description’ and ‘outcome spaces’ (p. 25) were significantly related to the outcome of a phenomenographic analysis. Similarly, as Åkerlind (2012) stated,

‘Outcomes are represented analytically as a number of qualitatively different meanings or ways of experiencing the phenomenon (called ‘categories of description’ to distinguish the empirically interpreted category from the hypothetical experience that it represents), but also including the structural relationships linking these different ways of experiencing. These relationships represent the structure of the ‘outcome space’, in terms of providing an elucidation of relations between different ways of experiencing the one phenomenon.’ (p. 116)

Åkerlind’s argument suggested that the individuals’ conceptions of experiencing a particular phenomenon referred to categories of descriptions. Outcome spaces referred to hierarchical orders of categories that could ‘be organised to demonstrate a logical relevance’ (Ireland *et. al.*, 2008, p. 11) between categories of descriptions. Marton *et. al.* (1993) argued that the aim of phenomenographic data analysis was not only to identify the individual’s conceptions or the graphical representation of the conceptions, but also to discover the underlying meanings and relationships between them.

### **3.3.3.1 Categories of Description**

Dahlgren’s and Fallsberg’s (1991) seven steps of data analysis suggested that a phenomenographer had to condense the individuals’ conceptions at a collective level; and to compare, group and label them into categories afterwards. What is the relationship between conception and categories of descriptions? As previously discussed in Section 3.2.3.1, conception was defined as ‘being constituted in the relation between perceiving subject and appearing object’

(Bruce, 1997, p. 103). Categories of descriptions were defined as ‘interpretation of the collective voice derived from the contextualised individual voices’

(Bowden & Green, 2010, p. 10). Similarly, Säljö (1996) also mentioned that the process of identifying categories of descriptions was a decontextualisation of conceptions. Therefore, conceptions and categories of descriptions are not synonyms. Categories of descriptions referred to ‘nominal outcome of a phenomenographic analysis’ and could be considered as ‘denoting’ conceptions (Reed, 2006, p. 3).

Categories of descriptions were not predetermined beforehand; they emerged from the researcher’s data analysis at a collective level (Dahlgren & Fallsberg, 1991). This is because ‘in some cases a specific conception cannot be seen in its entirety in data obtained from a single individual, but only within data obtained from several individuals’ (Sandberg, 1997, p. 206). One individual category of description may only partially reveal the phenomenon as experienced and that is reason for analysing the qualitative different reflections at a collective level.

Marton (1988) argued that categories of descriptions had four features, namely, ‘relational, experiential, content-orientated and qualitative’ (p. 181). In other words, categories of descriptions had a feature of being relational because they were considered as ‘denoting’ conceptions (Reed, 2006, p. 3), and conceptions are relational. Second, categories of descriptions are experiential in that they could reveal qualitative differences which referred to ‘the way things are experienced (understood, conceptualized, apprehended, etc.) —as phenomena, situations or learning itself’ (Marton & Booth, 1997, p. 86). Third, categories of descriptions are content-orientated because they focus on the meaning/referential

aspect of an experience. Fourth, categories of descriptions are qualitative in the sense that they are visible and could be described in languages. With these features, phenomenographers are able to organise the categories of descriptions into outcome spaces, which represented ‘a hierarchically ordered set of categories of description’ (Reed, 2006, p. 3).

### **3.3.3.2 Outcome Spaces**

Marton and Booth (1997) defined the outcome space as follows:

‘The complex of categories of description capturing the different ways of experiencing the phenomenon is the outcome space...it comprises distinct groupings of aspects of the phenomenon and the relationship between them.’ (p. 125).

Similarly, Ireland *et. al.*, (2008) defined outcome spaces as hierarchical orders of categories that could ‘be organised to demonstrate a logical relevance’ (p. 11) between them. An outcome space is a graphical representation of the hierarchically structured categories of descriptions. An outcome space can be organised because categories of descriptions ‘are related to each other in a systematised, often hierarchical way’ (Ireland *et. al.*, 2008, p. 10; Marton, 1994). Regarding the structural aspect of an outcome space, Åkerlind *et. al.* (2005) pointed out that the categories were usually of ‘hierarchical inclusiveness’ (p. 95). That is, the relationship between different categories was based on ‘evidence of some categories being inclusive of others’, rather than ‘value judgements of better and worse ways of understanding’ (Åkerlind *et. al.*, 2005, p. 95).

### 3.3.4 Strengths of Phenomenography

Several strengths have been found to use phenomenographic approach to explore individuals' ways of experiencing phenomena in the educational settings. As Bruce (1997, p. 5) described, phenomenography was able to:

- 'provide direct descriptions of a phenomenon';
- 'describe conceptions in a holistic and integrated way';
- 'capture a range of conceptions, due to its focus on variations in people's experiences';
- 'produce descriptions of conceptions which are useful in teaching and learning'.

Researchers would benefit from a phenomenographic approach, as it 'centred on the interviewee's life-world'; it is 'qualitative, descriptive, specific and pre-suppositionless'; and it 'seeks to understand the meaning of phenomenon in the interviewee's life-world' (Bruce, 1994, p. 49). In this study, it is important to understand the learners' conceptions of their emotions and FL learning experiences; because these conceptions could reveal the learners' concerns or interests (Rudd, 2007). The learners' urges of creating better educational experiences could provide responses to teaching practices to their teachers.



In this study, the learners' affective experiences and performances will initially be gathered at an individual level. As Yates *et. al.* (2012) suggested, because the aim of using phenomenography was to explore the learners' 'collective awareness and variation in how a phenomenon is experienced' (p. 102). In this regard, to gather data at an individual level is the starting point to establish the hierarchical structure of collective awareness.

In addition, a phenomenographic approach would allow a researcher to describe conceptions from a holistic perspective (Bruce, 1997). A phenomenographic approach would allow me to capture the learners' simultaneous emotion blends. It would also allow me to 'make sense of particular expressions in terms of the collective as well as of the individual context' (Marton, 1994, p.4428). It is important to explore how different learners reflect on the same exam context. Such descriptions of conceptions are useful in teaching and learning in that they are 'exploring at greater and greater depths of thinking without leading (Trigwell, 2000, p. 68). This argument can be linked to Pherali (2011) who argued that 'phenomenographic studies have valuable potential for educational improvement, by developing respect for learners' perspectives in pedagogy' (p. 15).

### **3.3.5 Weaknesses of Phenomenography**

Åkerlind (2012) argued that the validity and reliability issues were commonly criticised by researchers as methodological weaknesses of phenomenography. Both issues were not only criticised in phenomenography, but also other qualitative educational research methodologies in general (Cohen *et. al.*, 2007).

‘Threats to validity and reliability can never be erased completely; rather the effects of these threats can be attenuated by attention to validity and reliability throughout a piece of research’ (Cohen *et. al.*, 2007, p. 133).

There are many different types of validity and reliability and several practical ways and criteria to ensure both (Cohen *et. al.*, 2007). Phenomenographers should establish rigour in their research by checking the validity and reliability issues (Reed, 2006; Collier-Reed *et. al.*, 2009). It is not my intention in this section to discuss all of the different types of validity and reliability in phenomenography. I will elaborate the validity and reliability checks that have been employed in this study. They are investigation validity checks, communicative validity checks, pragmatic validity checks, and intercoder reliability and agreement checks (Åkerlind, 2005; Kvale, 1996).

### **3.3.5.1 Validity**

Kvale (1996) introduced three types of validity checks to deal with validity issues in qualitative studies, namely investigation validity checks, communicative validity checks, and pragmatic validity checks. Investigation validity also referred to ‘the quality of craftsmanship’ (Kvale, 1996, p. 241). The first type of validity referred to the researcher’s quality control (Newman & Benz, 1998). Investigation validity focuses on how well the study is conducted. This type of validity suggested that a researcher would need to convince an audience that his/her was a competent researcher and have carried out the research to a high quality (Hesse-Biber, 2010).

This study was carefully conducted step by step. First, regarding terminology issues, I have successfully translated abstract DST concepts from the physics discipline into tangible L2 terms which are acceptable by applied linguistics and education researchers. Second, I have overcome the methodological challenge for my interdisciplinary study, by carefully establishing the Intercoder Reliability and Agreement through the Geneva Affect Label Coder (GALC), Scherer *et al.*'s (2013) GRID paradigm from the psychology discipline and Saldaña's (2009) Longitudinal Qualitative Data Summary Matrix (LQDSM) from the education discipline. Third, I have applied phenomenography as the framework to collect data and the Platonic Tripartite Framework (redefined by Dörnyei as cognition-motivation-emotion in 2009) to analyse the identified attractor states. Fourth, I have successfully reduced the potential unlimited numbers of variables which might relate to the learner's L2 motivation if seeing SLA/FLA as a dynamic process through the lens of DST, into countable and predictable ones by utilising retrospective methods to triangulate data. Fifth, through the integration of a range of concepts from different disciplines, I have established a three-layer *Dynamic Model of Foreign Language Development* to illustrate the relationship between the learners' self-perceived affective experiences and their self-evaluated performances. In addition, before proceeding the whole piece of the study, the results of a pilot study were published at the *International Conference on Motivational Dynamics and Second Language Acquisition*, a leading conference in the DST area at the University of Nottingham. As a result, I have carefully conducted this study to ensure its high quality.

The second type of validity, the communicative validity was described as follows:

‘Communicative validity involves testing the validity of knowledge claims in a dialogue. Validity knowledge is not merely obtained by approximations to a given social reality; it involves a conversation about the social reality: What is a valid observation is decided through the argumentation of the participants in a discourse.’ (Kvale, 1996, p. 30)

In other words, Kvale’s second type of validity, the communicative validity required ‘those who might be thought of as experts regarding the particular research problem’ evaluated and debated the issues together (Hesse-Biber, 2010, p. 90). However, Hesse-Biber (2010) also argued that this type of validity although sounded well in theory, it could be tricky in practice due to the lack of criteria to determine an expert. On the other hand, Åkerlind (2012) pointed out that Kvale’s ‘dialogue’ could refer to not only experts in the area, but also the participants for the research. In this regard, it would be difficult for one participant to capture a full picture of the phenomenon at a collective level in this phenomenographic study, in that one participant’s awareness should be considered as a partial aspect of the phenomenon (Åkerlind, 2012). However, the communicative validity could still be checked by presenting at leading conferences in the area, sharing ideas at research seminars, and publishing research findings on peer-reviewed journals (Åkerlind, 2005). When proceeding the study, I frequently consulted and discussed with my supervisor, Professor David Wray, on a regular basis throughout four years. Moreover, several parts from this study have been published at conferences and journals. I have also shared talks with scholars in this area worldwide. All of these communicative experiences are useful for establishing the validity of the study.

The third type of validity, pragmatic validity was also named as action validity, 'in which the justification of the truth of the research is based on whether or not it works' (Newman & Benz, 1998, p. 49-50). Similarly, Sandberg (2005) argued that the pragmatic validity check involved 'testing knowledge produced in action' (p. 56), in order to explore to what extent the results from a phenomenographic study are useful to the intended audience. As Kvale (1996) mentioned,

'Pragmatic validation raises the issue of power and truth in social research: Where is the power to decide what the desired results of a study will be, or the direction of change; what values are to constitute the basis for action? And more generally, where is the power to decide what kinds of truth seeking are to be pursued, what research questions are worth funding?' (p. 251)

Kvale's considerations emphasised on the value of the results from a phenomenographic study. In other words, the results are pragmatically valid if they work, or more specifically, if they provide valuable knowledge or the direction of change which can be employed by the intended audience or researchers. The aim of current study is to explore the relationship between the learners' self-perceived affective experiences and their self-reported performances through the lens of DST. Instead of making claims that other FL learners would respond similarly to similar contexts, the implication of the results from this study is on how the identified relationships may expand FL learners' and teachers' thinking. Moreover, the results also value in providing empirical results to investigate the fluid emotions which could change from time to time through the lens of DST, which is a relatively new paradigm in the

educational field. Therefore, the pragmatic validity checks are employed in this study.

### **3.3.5.2 Reliability**

Reliability referred to ‘the replicability of results’ and this interpretation referred to the ‘replicability of the outcome space(s)’ in phenomenography (Cope, 2004, p. 4). Similarly, Booth (1992) pointed out that replicability of the results suggested ‘if another researcher repeated the research project ... what is the probability that he or she would arrive at the same results’ (p. 64). However, Johansson *et. al.* (1985) in an earlier stage had argued that the requirement of the replicability of the outcome spaces in phenomenography was not reasonable due to the interpretative nature of data analysis. This argument can be linked to Cope (2004) who agreed Johansson *et. al.* (1985), ‘replication of outcome spaces by different researchers is unlikely and not necessary’ (p. 4) due to the intricacies of data analysis and the uniqueness of the researcher’s background.

So a question might be raised, ‘Can the scientific concept of reliability be adapted to be a meaningful contributor to the rigour of phenomenographic research approaches?’ (Cope, 2004, p. 5) Some researchers believed that reliability could be adapted to phenomenographic studies and conducted inter-rater reliability checks (Johansson *et. al.*, 1985; Trigwell, 1994) As Sandberg (1997) argued, such inter-rater reliability checks emphasised on whether other researchers could identify the same categories of descriptions from the data. This reliability is important to this study for the reason below. As previously stated in Chapter 2, there is a research gap relating to the accuracy of measuring an

emotion. Campbell *et al.* (2013) argued that although many researchers discussed the validity and reliability issues in their studies, few mentioned the intercoder reliabilities and agreement, which aimed to see if different coders would define the same paragraph in the same codes. Therefore, the intercoder reliability and agreement was checked in this study. This type of reliability check will be illustrated in detail in Section 3.5.

### **3.3.6 Rationale of Employing Phenomenography in this Study**

As Cohen *et al.* (2007) argued, the methodology being employed in a study should be based on the ‘fitness for purpose’ (p. 50). The methodology selected for the exploration of a particular topic should be proper to answer the research questions that aim to bridge the research gaps. As previously mentioned, the purpose of this study is to have a better understanding of the relationship between the learners’ self-perceived emotions and their self-evaluated performances through the lens of Dynamic Systems Theory (DST). I am seeking to explore how emotions and self-evaluations interact with each other. My aim is to have an in-depth understanding of the learners’ awareness, their conceptions and their different ways to experience and explain phenomena from their standpoints in an FL classroom. In other words, what I care about is how the learners talk about their feelings and their learning experiences. The learners’ voices and beliefs are important to contribute to quality teaching in that the learners themselves are responsible for learning what the teachers teach them (Rudd, 2007). Moreover, the results from this study hopefully can expand FL learners’ and teachers’ thinking, rather than making claims about how other FL learners would respond similarly to similar contexts. In this regard, I need to

adopt a theoretical framework that is able to assist me to engage with the learners. Therefore, phenomenography, which was introduced by Marton and Säljö (1976) as a qualitative method was selected to assist me to explore the dynamism of the affective experiences and the learners' reflections on their experiences from a second order perspective.

### **3.4 Research Designs**

Reed (2006) argued that data should be collected from 'a person's experience of a phenomenon as described by that person' (p. 5) in phenomenographic studies. Moreover, he also argued that there were two predominant ways for data collection, 'either through an interview or through the text written by the person in response to a specific question' (p. 5).

As Sandberg (2000) argued, the main objective in most phenomenographic studies was to categorise the conceptions of a phenomenon at a collective level instead of illustrating the richness of individual conceptions. To support this argument, Bowden (2000) suggested a phenomenographic researcher 'to deal with the whole transcript all of the time' (p.12) in order to capture the conceptions at a collective level. However, Trigwell (2000) argued that in practice, it was difficult for a researcher to hold 20 interviews in his/her head at the same time. In response to this, Uljens (1996) suggested a researcher to create individual profiles of each participant initially, in order to engage with the participants' lifeworlds before making a comparative analysis. This study followed Uljens' (1996) suggestion and I have conducted a multiple case study to answer the research questions.



### **3.4.1 Instruments**

The purpose of conducting a case study was ‘to portray, analyse and interpret the uniqueness of real individuals and situations through accessible accounts’ and ‘to catch the complexity and situatedness of behaviour’ (Cohen *et. al.*, 2007, p. 85). This study considered each learner’s FLA experience as a unique dynamic system. The open nature of phenomenographic approach also adjusted to the requirement of the reconsideration of traditional FLA concepts through the lens of DST. The cross case comparison aimed to identify the possible structure from several self-reported experiences of the same phenomenon. I aimed to identify how the fluid emotions interacted with the learners’ self-reported performances from time to time. In order to answer the research questions, four instruments were employed for data collection, namely, Diary, Qualitative Survey, Semi-structured Interviews, and Class Observations. The diverse selection of instruments would assist with the triangulation of data.

#### **3.4.1.1 Timescale**

Because the aim of the study was to indentify the dynamic interactions between the learners’ self-perceived affective experiences and their self-reported performances over a period of time, six months with an interval of two was designed to be the research length. This period covered two academic terms and one summer vacation. Altogether 18 academic weeks from 12th April, 2014 to 20th June, 2014 and from 1st September, 2014 to 31st October, 2014 were covered for this longitudinal study. The first reason for the selection of the above two periods of time is that, in the selected university, this period covers 7 regular

exams (twice a month), 2 big exams (one final and one mid-term exam) and one English Oral Competition. In general, the exams together evaluated the learner's six aspects of English, namely, vocabulary, grammar, listening, reading, writing and speaking. This study aimed to explore the learners' self-reported performances over time; therefore, exams that constantly evaluated the six aspects of English were necessary. Second, because I defined an emotion as 'an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer 2009c, p. 1307), which concept was compatible with the research aim of exploring the learners' simultaneous emotion blends and with the research questions. Exams on a regular basis over a period of time acted as significant events that contributed to the learners' reflections on their emotions, the process and the progress of English learning.

#### **3.4.1.2 Diary**

The diaries employed in my study referred to 'researcher-directed diaries' which were 'produced for the purpose of research' and required 'regular entries over a period of time' (Braun & Clarke, 2013, p. 147). Diary was usually employed to explore 'experiences, understandings and perceptions' and to 'access the details of mundane, everyday, routine, taken-for-granted phenomena that other methods cannot reach' (Braun & Clarke, 2013, p. 147-148). Data gathered from diary entries were used to answer the first subsidiary research question, 'What affective experiences do the learners report as they engage in learning?', the second subsidiary research question, 'How do these self-perceived affective experiences change over short, medium and longer time scales?' and the third

subsidiary research question, 'How do these self-perceived affective experiences differ in various contexts?' Participants were asked to write a diary once a week.

Clear and comprehensive instructions were given to the participants.

**The First Instruction.** As Breakwell and Wood (1995) concerned, there could possibly be a high drop-out rate if data was collected over several months via diary entries. Three strategies were employed to maintain the participants' interest. First, I arranged an initial meeting with the participants to explain the task of keeping diary entries and asked for their preference of the formats (either hard copy or email). If diaries were preferred to be kept in hard copies, the A4 notebooks would be provided by the researcher. I encouraged them to keep in hard copies for the following reason.

Second, the participants were asked to submit their diary entries at the end of every week together with their translation homework. As I was aware that the participants had been asked to translate and to submit certain articles provided by their translating teacher at the end of every week; to collect the diary entries at the same time aimed to motivate the participants to engage with this study.

Furthermore, such a collecting method provided more convenience to the participants as the translation homework and the diary entries were collected by the study monitor at the same time.

Third, I added all of the participants' Wechat accounts (a communication tool like Instagram or Twitter, which is very popular among Chinese students) and

regularly contacted them and posted relevant information so that the participants would feel refreshed, updated and being actively engaged in this study.

**The Second Instruction.** I clearly instructed the participants on what kind of information they should record. The instruction was particularly on the structure of the diary. Because data gathered from diary entries were used to answer the first, the second and the third subsidiary research questions; the information focused on but not restrict to their self-perceived affective experiences.

The comprehensive English module was selected for exploration as it included six aspects of English activities including vocabulary, grammar, listening, reading, writing and speaking. The participants were asked to reflect on their class activities and their emotional changes. The participants were asked to follow *the Context –Emotion –Result –Evaluation* template (Appendix 1.1 & 1.2) to record their diary entries. To be specific, *Context* refers to the question of ‘What was the situation or task?’ The participants were asked to describe the situation they feel like to record. *Emotion* refers to the question of ‘What kind of emotions did you feel and why?’ The participants were asked to describe their affective experiences, the duration of these experiences, and the explicit reasons on why they thought that they felt in this way. *Result* refers to the question of ‘What happened?’ and *Evaluation* refers to the question of ‘What did you learn from it?’

Furthermore, the participants were asked to record their experiences ‘as close as possible to when they happen’ (Braun & Clarke, 2013, p. 150); and in this circumstance, the recording time refers to as close as when they have finished

their comprehensive English lesson. Also, a sample completed entry written by myself was given to the participants as a reference. As Holliday (1999) pointed out, a sample entry may be effective to guide the participants to find out what is important to them; however, it might inhibit their reflection or thinking. On the other hand, Braun and Clarke (2006, 2013) suggested that a sample completed entry could be useful to structured diaries in that it can motivate the participants to write on what the researchers want to obtain and maintain the participants' interest. This study required the participants to engage in the investigation for six months, to maintain their interest was considered as a very important issue. Therefore, I followed Braun's and Clarke's (2013) suggestion to provide a sample completed entry.

#### **3.4.1.3 Qualitative Survey**

Qualitative surveys consisted of 'a series of open-ended questions about a topic ... would basically be an interview' (Braun & Clarke, 2013, p. 135). Moreover, they also suggested that qualitative surveys 'are particularly well suited to experience, understandings and perceptions, and practice type questions' (Braun & Clarke, 2013, p. 137). Data gathered from qualitative surveys were used to answer the fourth subsidiary research question, 'How do self-perceived affective experiences relate to the learners' self-evaluated performances?' with a particular emphasis on the learners' self-evaluated performances. The qualitative surveys were distributed twice per month.

Open-ended questions were designed with clear titles and comprehensive instructions were given to the participants.

**Open-ended Questions.** There were five open-ended questions per survey (Appendix 2.1 & 2.2). The questions were designed with an emphasis on their cognitive, emotional, and motivational reflections. For example, the first question, ‘What is your perception of your current English proficiency (the aspect(s) of English, such as speaking, will be specified according to their exams)?’ This question was design to obtain their cognitive reflection on their self-evaluated English proficiency (not the proficiency revealed by the real exam scores). The diary entries and qualitative surveys might garner similar information from participants. This study would benefit from such information, because it would allow me to compare the participants’ changing from different timescales. In particular, the diary entries were utilised to generate short-term reflections and the qualitative surveys were utilised to generate medium-term responses.

**Instruction.** Qualitative surveys were sent out at the beginning of the week when an exam was arranged. The participants were asked to submit their qualitative surveys via email at the end of the same week as they finished their exams. For example, if they were going to have an exam on Wednesday (they normally do) in week 2, the qualitative survey would be sent out on Monday in week 2. They were asked to return their qualitative surveys on Friday in week 2. This was because the participants would have their regular exams twice a month. After they finished the exam, they normally would receive their exam scores on Thursday afternoon. They needed to use their student number and password to log in their online portals to check the results. The online qualitative surveys aimed to facilitate their recording as the participants could finish the survey

almost at the same time when they received their scores online. The participants could provide their reflections immediately when they received the scores.

Moreover, reminders were sent to motivate their participation.

#### **3.4.1.4 Semi-structured Interviews**

Braun and Clarke (2013) suggested the researcher who conducted semi-structured interviews ‘has a list of questions but there is scope for the participants to raise issues that the researcher has not anticipated; this is the commonest type of interview in qualitative research’ (p. 78). This instrument in this study was also a phenomenographic interview. Interview was considered as the most common instrument to gather data in phenomenography (Reed, 2006). The questions were designed, according to Marton’s suggestion, ‘as open-ended as possible in order to let the subject chose the dimensions of the question they want to answer’ (Marton, 1986, p. 42). In addition, the aim of this phenomenographic interview was ‘exploring at greater and greater depths of thinking without leading’ (Trigwell, 2000, p. 68).

There were some more particular characteristics for the phenomenographic interviews in this study than other types of qualitative research interviews. Because the point of this phenomenographic interview was to explore the variation in how the participants experienced the phenomenon. That is, my emphasis was on the relationship between the participants and the theme of the interview, rather than either discrete component. The data was gathered at an individual level as a starting point. Next, the focus was on the establishment of

the collective awareness of how they experienced the same phenomenon in different ways.

Data gathered from semi-structured interviews were used to answer the main research question ‘From a dynamic perspective, what is the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom?’ and all of the four subsidiary research questions. The interviews were audio-recorded and took place twice per month after I received their diary entries and qualitative surveys and finished constant comparisons. For example, if they had an exam on Wednesday (they normally did) in week 2, and finished returning their diary entries and qualitative surveys by Friday in week 2, the interview would take place on Monday or Tuesday in week 3, according to their convenience. I asked for their most convenient time during the weekend via Wechat. In the meantime, I finished the constant comparison of their diary entries and qualitative surveys. I also identified the unique issues from their reports and designed questions accordingly beyond the general question list.

**Open-ended Questions.** The interview would last between ten to fifteen minutes per person. Because I wanted to explore their different ways of experiencing the same phenomenon at a collective level, each time the question focused on the description of the specific event. As the participants may or may not mention that event in their diary entries or qualitative surveys, I described the event instead of reminding them what they said in the past. This strategy was used for constant comparison across short, medium and long timescales. Moreover, the questions were open-ended (Appendix 3.1 & 3.2) and focused on the investigation of



potential attractor states which was defined as ‘a critical value, pattern, solution or outcome towards which a system settles down or approaches over time’ (Newman, 2009; cited in Hiver, 2014, p. 21).

#### **3.4.1.5 Class Observations**

Traditionally, observation was used to ‘gather “live” data from naturally occurring social situations’ in order to assist the researcher to obtain ‘immediate awareness or direct cognition’ (Cohen *et. al.*, 2007, p. 396). However, in this study, the unstructured observation in the classroom was only used to establish a shared or ‘joint’ definition of the phenomenon under discussion (Bowden, 1996, p. 58). As Marton (1994) suggested that the themes from the interview should better be ‘jointly constituted by the interviewer and the interviewee’ (p. 4427). The unstructured observation in the classroom would ‘be far less clear on what it is looking for and will therefore have to go into a situation and observe what is taking place before deciding on its significance for the research’ (Cohen *et. al.*, 2007, p. 397). Therefore, the class observation was only used to establish a shared or ‘joint’ definition of the theme. No intervention was made. I sat in the last row at the back of the classroom each time. My presence was informed to the teacher and all of the students in the classroom. I also submitted and asked them to return the written consent forms. Further issues will be discussed in the section of ethical considerations. I observed their comprehensive English lesson once a week.

### **3.4.2 Language to Collect Data and Translation Issues**

All of the three instruments, namely, diary, qualitative survey and semi-structured interview were conducted in the participants' first language, Chinese Mandarin. The participants were advised to record their diary entries and qualitative surveys in Mandarin. In addition, the interviews were conducted in Mandarin. All of the data was collected and analysed in Mandarin initially, then the findings were reported in English. The translation task was completed by myself.

The participants' first language, Chinese Mandarin was selected to carry on the diary entries, qualitative surveys and semi-structured interviews for the reason below. Birbili (2000) mentioned, 'collecting data in one language and presenting the findings in another is now increasingly common among social researchers. As student and staff mobility increases, a considerable number of theses, dissertations and funded-research projects concern studies which involve moving between languages, sometimes even from the very first steps of the research endeavour'.

This study required the participants to use language to describe their experiences. As Squires (2009) argued, 'language is a part of the identity of the person experiencing the phenomenon, translation disrupts the fluid process from inception through dissemination of studying the participants' use of language to describe the experience of the phenomenon' (p. 280). In other words, the language used should not prevent the participants from expressing themselves. Although the participants in this study were English major university students

who were considered fluent in English; their English proficiency did not reach the bilingual level which allowed them to ‘slip between the two languages’ (Rossman and Rallis, 1998:161). Chinese Mandarin which was the participants’ as well as the researcher’s first language would allow both sides to interact explicitly. Therefore, Mandarin was selected to carry on all of the three instruments.

Furthermore, in the data collection and data analysis stage, Mandarin was not translated into English until the last step of reporting the findings. This was because the process of translation may risk the alteration of ‘the original use and structure of the participant’s use of language’ (Squires, 2009, p. 281) in the data collection and analysis stage.

As this study was reported in English, so immediately translation concerns are raised. Squires (2009) argued that translation issues may reflect ‘researcher competence with handling the issue of language barriers between themselves and their participants, and consequently, the trustworthiness of the data’ (p. 286). However, Squires’ concern largely focused on the cross –language boundaries between the researcher and the participants. Such boundaries normally occur, for example, when the researcher is a native English speaker and the participants are using English as a foreign language. In this study, both the researcher and the participants are using Chinese Mandarin as their first language and using English as a foreign language. Therefore, such boundaries do not exist in this stage.

The main translation concern focuses on how a researcher translates the findings into English and reports it in English. This issue relates to the quality of

translation. In this study, the researcher and the translator are the same person. In this case, as Phillips (1960) suggested, three factors may influence the quality of translation when the researcher and the translator are the same person. They are the translator credentials, the researcher's knowledge of the participant's culture, and the researcher's competence of writing up in an SL/ FL.

First, regarding the translator credentials, I was trained as a simultaneous interpreter and have a Bachelor degree in English Advanced Translation and Interpreting. I have seven years' translating and interpreting experience from English to Mandarin and vice versa. I have also participated in several large translating or interpreting projects both in China and in the UK in business, automobile, and more important, education sectors. Moreover, I am also a UK accredited translator and interpreter in English and Mandarin. I am member of Chartered Institute of Linguists (MCIL) and also a committee member of the Business, Professions and Government (BPG) division. As a translator as well as a researcher, I am capable to translate the findings in high standard quality. Furthermore, I employed Scherer *et. al.*'s (2013) GRID paradigm and Geneva Affect Label Coder (GALC) as references to assist me to translate the learners' affective experiences. This process will be further illustrated in section 3.5.

Second, regarding my understanding of the Chinese culture, I grow up in China and before I came to the UK five years ago, I spent most of my time in China. I am also from the same area as the participants. Therefore, this experience would allow me to have an in-depth understanding of the participants' culture.

Third, regarding my competence of writing up in English, I tried many strategies as I could, such as conducting pilot studies, interacting with my supervisor, revising the language used in the thesis to maximise its clarity, publishing papers on different journals, discussing with the colleagues in the same research area at conferences, and giving speeches internationally. These activities would allow me to write up in clear and understandable English.

### **3.4.3 Sampling**

Cohen *et. al.* (2007) suggested that judgements on four key factors in sampling should be made by a researcher. They were ‘the sample size’; ‘representativeness and parameters of the sample’; ‘access to the sample’; and ‘the sampling strategy to be used’ (p. 100).

Regarding the sample size for qualitative studies, different researchers hold different perspectives. The number may range from as minimal as 1 to 350 or more (Thomson, 2004). Other researchers such as Creswell (1998) suggested that the number can be 20 to 30. Because this is a phenomenographic study which aims to explore the participants’ various ways of experiencing the phenomenon at a collective level, one participant is not sufficient for this study. Moreover, as Cohen *et. al.* (2007) argued that ‘there is no clear –cut answer, for the correct sample size depends on the purpose of the study’ (p. 101) and for qualitative case studies, to ensure 10 cases would be on the safe side (Gorard, 2003). Bowden (1995) also suggested that around 15 participants would create a reasonable chance to study the variation for phenomenographic studies. For above considerations, the target sample size was determined to be 12.

The representativeness of the sample was defined as ‘the extent to which it is important that the sample in fact represents the whole population in question’ (Cohen *et. al.*, 2007, p. 108). However, as previously illustrated, this study did not make claims that other FL learners would respond similarly to similar contexts. Rather, the aim was to explore how the fluid emotions interacted with their self-evaluations and changed from time to time through the lens of DST. The implication of the results was on how the identified relationships may expand FL learners’ and teachers’ thinking. Therefore, the participants in this study were not used as representatives.

The access to the sample was considered as the key issue in this study.

According to the research purpose, the participants were selected from a Foreign Language University in China. 12 second-year Chinese students of English were selected at random from one class and asked to volunteer to take part in the study. All of these students were studying a degree in English. The reason for selecting second-year university students was that they were the easiest to approach. This study was an in-depth qualitative research with several instruments employed. Students in year one were new to university and were very busy with the military training, which meant that they did not have sufficient time to participate in the research. Most of the students in year three were busy with their internship in different companies. Most of the students in year four had already completed their credits for graduation, so that they did not normally appear on campus. It was difficult to arrange time for interviews or to motivate them to engage with the research. Therefore, the students in year two were the most suitable participants for this research.

Random sampling was the sampling strategy for this study. Random selection benefited the researcher from providing 'each member of the population under study has an equal chance of being selected and the probability of a member of the population being selected is unaffected by the selection of other members of the population' (Cohen *et. al.*, 2007, p. 110). Because the participants had to be from the same class, the class was selected at random initially among the year two students. The students were asked to participate on a voluntary basis. Therefore, the students who were not willing to participate were excluded. All of the other students' names were written on slips and kept in a container. I selected from the container and these were my sample.

#### **3.4.4 Ethical Considerations**

This study followed the standards identified in BERA (British Educational Research Association) to protect the participant's rights, cultural and religious values and well-being. All of the participants were volunteers and they were assured that they could withdraw at any point during the research. The participants were treated equally, with dignity and without prejudice in terms of race, gender, religion, cultural value, age, and any other significant difference. All of the participants gave written voluntary informed consent. Participants were informed of the full procedures and nature of this study. No potential predictable detriment have been identified from the pilot study or raised from the process of the study.

I, as the researcher of this study, complied with the legal requirements regarding the storage and use of personal data from the Data Protection Act (1998) and any

subsequent similar acts. All of the participants' names were coded and the equivalent code list has been saved in a Zip file with a password. Participant responses were classified by the codes and were also saved in a Zip file in order to protect them from the risk of social injury.

Before the classroom observation, informed consent was obtained from the teacher and all of the students in the classroom for the agreed access. All of the participants were volunteers and were treated with respect. Considering the ethics of interviews, participants' names were coded and recording contributions including tapes and written forms taken from the interviews were used according to the participants' wishes. Considering the ethics of surveys and diary entries, the participants' names were required to be kept on their reports and they could only be known by the researcher. The participants' diary entries were hard copies and were collected by their study monitor at the end of their lesson. At the time of notebook collections, I was also in the classroom for observation, I have informed the study monitor to hand over the diaries directly at the moment when she finished collecting them.

A written consent form was provided to all of the participants and the teacher prior to the research. In the written consent form, a full procedure, methodology and nature of this study were laid out specifically. Before the research, the participants learned about the risks and the ways of how their rights would be protected. The participants would gain a full understanding of this study and were able to have a reasonable judgement based on the potential consequences of their decisions. All participants were volunteers and could withdraw at any point during the research. I guaranteed that all of the participants' reports, both written



materials and audio-recordings were with full confidentiality. However, if at any point during my communications with the participants, I discovered that the situation was too severe and may seriously be harmful to the participants' daily life and well-being, then the situation would be reported to the head of the department or police if necessary. This procedure has been explained fully to the participants.

A comfortable environment was arranged for the participants during the interviews. If the participants felt upset, they were offered an opportunity to withdraw at any time if they wished. This did not happen. Participants were informed about sensitive issues and I sought permission to use these in the thesis. For example, Eric reported his family issues in an interview. I obtained his permission to use the information in my thesis before I wrote a summary of his profile. All of the findings are reported anonymously. The data will be destroyed after a predetermined time. The original data are traceable and the analysis process is transparent. The participants have full access to the final report of this study and learning suggestions can be provided for their further development as they wish. Hopefully the report of this study, the feedback and suggestions can benefit the participants in their future learning.

### **3.5 Data Analysis**

Thematic analysis was employed as the system for data analysis as it would ensure both accessibility and flexibility (Braun & Clarke, 2012). Regarding data coding and analysis, mixed deductive and inductive approaches were employed

and codes and themes were identified from data corpus gathered from the participants. The data were analysed through six steps recursively:

- ‘Familiarizing yourself with your data’;
- ‘Generating initial codes’;
- ‘Searching for themes’;
- ‘Reviewing themes’;
- ‘Defining and naming themes’;
- ‘Producing the report’

(Braun & Clarke, 2006, p. 87)

### **3.5.1 Data Coding Process**

In this section, I will elaborate the three phases of my data coding process. In the first phase, I transcribed all diary entries, qualitative surveys and audio-recorded interviews in Chinese Mandarin. Next, I checked all transcripts against the original documents and recordings for accuracy. I read the transcripts for several times in order to familiarize myself with the data collected from the participants. CAQDAS (Computer Assisted Qualitative Data Analysis Software) NVivo was used to assist data analysis, and in the meantime, I inserted memos during my

readings of the transcripts. In the second phase, I conducted a first cycle coding by using magnitude coding method, emotion coding method and In Vivo coding method. In the third phase, I conducted a second cycle coding by using pattern coding method and longitudinal coding method for measuring affective patterns and self-reported performance trajectories, respectively. I also integrated DST literature to define themes.

### **3.5.2 Transcribing the Data**

In the first phase, I transcribed all data collected through different methods including diary entries, qualitative surveys and audio-recorded interviews and inserted the written format into NVivo. The first reason to transcribe all data, especially the audio-recorded interviews into written format was because all data were considered equally important in terms of presenting a fuller picture of the learners' FLA experiences during the studied period. Second, because I chose Nvivo to facilitate data analysis, to transcribe data collected through different methods into similar written format pattern was useful for thematic identifying and grouping according to different timescales in a later stage.

In addition, I checked all transcripts against the original documents and recordings for thoroughly transcribing. To transcribe diary entries and qualitative surveys was comparatively less time consuming than audio-recorded interviews transcriptions. Especially transcribing audio-recorded interviews cost considerable time; however, this crucial procedure would allow me to have a first grasp of salient patterns and recurred themes between different individuals. In addition, I kept consistency of the notation system and made annotates to explain

them. After reading the transcripts for several times, I familiarised myself with the data which would allow me to gain the initial insight of general meanings. During my readings, I also inserted memos of my observations in the classroom, of the texts' relationship with the research questions and of which codes might relate to emergence or existing theory (Saldaña, 2009). These memos linked my observations and the learners' conceptions together.

### **3.5.3 Intercoder Reliability and Agreement**

Before encoding the whole data, Intercoder Reliability was checked to improve the reliability of the codes and the categories identified by the researcher.

Krippendorff (2004) argued that there were three types of reliability, namely, stability, accuracy and reproducibility. To be specific, stability referred to the consistency of the use of codes and notations during the period of research time; accuracy referred to the existing establishment of coding scheme with high reliability that other schemes were able to compare with; reproducibility referred to the intercoder reliability where data would be checked by different coders to examine whether codes would be produced on the same content in the same way (Campbell *et al.* 2013).

Campbell *et al.* (2013) further elaborated the procedures on how they established intercoder reliability and intercoder agreement in their sample study. To be specific, intercoder reliability referred to two or more knowledgeable coders coded the transcript separately and brought in same codes for same units of the transcript (Krippendorff, 2004). Intercoder agreement referred to how coders reconciled via discussions on coding discrepancies (Garrison *et al.* 2006).

In addition, Campbell *et al.* (2013) argued that the accomplishment of establishing intercoder reliability and intercoder agreement depended on how unitisation problem and discriminant capability problem could be solved by the researcher. Firstly, Krippendorff (1995) argued that the unitisation problem referred to the length difference occurred when different coders unitise of the same text differently. In other words, even different coders defined the same codes from the same paragraph; the length of the relevant text coded may vary (Kurasaki, 2000). Campbell *et al.* (2013) suggested to solve this problem with units of meaning identified by the principal investigator (PI) because PI was much more qualified and knowledgeable in doing the unitising in terms of 'subjective interpretation, contextualization, and especially a thorough understanding of the theoretically motivated questions guiding the study' (Campbell *et al.*, 2013, p. 304). Secondly, Fahy (2001) argued that discriminant capability referred to how well different coders were able to reflect and categorised the text. To solve such a problem, Garrison *et al.* (2006) adopted 'negotiated agreement' approach. This approach was validated by Campbell and his colleagues who discussed their coding disagreements thoroughly to reconcile and finally reached a decision that discrepancies being resolved.

In this phenomenographic study, both intercoder reliability and intercoder agreement were established before coding whole data obtained. Two other research assistants were employed in the intercoder reliability and agreement procedure. One of the research assistants was a third-year PhD student in the University of York and the other was a senior lecturer in University of Westminster at the time when they were asked to participate in this study. Both

of them were social science researchers with qualitative research experience, originally from China and fluent in English. The coding scheme was determined before intercoder reliability and agreement were established.

An integration of deductive coding approach and inductive coding approach was employed for measuring affective patterns and self-reported performance trajectories, respectively. In first cycle coding, two deductive coding approaches were applied when coding the learners' self-perceived affective experiences. Geneva Affect Label Coder (GALC) was applied as the coding scheme for this subsystem. In the meantime, the translation from Chinese to English was in accordance with the GRID paradigm. Both magnitude coding method and emotion coding method were employed in this procedure. In the following section, I will illustrate how GALC (Appendix 4.1) and GRID (Appendix 4.2) were employed as coding schemes for coding self-perceived affective experiences. Moreover, In Vivo coding method was employed to code the students' self-reported performances inductively.

In second cycle coding, pattern coding method and longitudinal coding method were employed to categorise and to theme the codes for measuring affective patterns and self-reported performance trajectories, respectively. We three coders initially coded the data on an individual basis. Afterwards, we compared and discussed our coding in order to achieve an agreement. The procedures are presented as follows.

### 3.5.3.1 First Cycle Coding

Before the first cycle coding took place, according to Campbell *et al.*'s (2013) solution of unitisation problem, units of meaning were identified by me, the principal investigator (PI). I initially followed the coding scheme and procedures to code all data via NVivo by myself and categorised the whole text into units with 'a segment of text in the margin with a bracket' (Campbell *et al.* 2013, p.304). Afterwards, I erased all codes and left the transcripts with brackets named sub1 and sub2 only (sub1 referred to self-reported affective experience subsystem and sub2 referred to perceived performance subsystem). Campbell *et al.* also suggested that to solve the unitisation problem in this way might bring some bias to the intercoder reliability. However, the emphasis was on 'how much text to bracket for a particular code rather than whether a particular code was appropriate' (Campbell *et al.* 2013, p.304). This argument significantly related to my aim that was to establish intercoder reliability on whether the same code could be defined from the same unit of text between different coders. It was necessary to make the other research assistants know which unit of text needed coding. Therefore, I applied this method to identify units of meaning before transcripts were provided to other research assistants.

In the next stage, we used random selection method to choose 40 out of 336 documents (17.3% text coverage of the whole transcripts) to establish intercoder reliability and agreement. To be specific, each student submitted 14 diary entries, 7 qualitative surveys and 7 interview transcripts. Therefore, 28 individual documents were established, and altogether 336 documents (28×12 participants) were created. As a result, approximately 11.9% documents which represented

17.3% text coverage were used to intercoder reliability and agreement check. The selected documents were printed out for researchers to code individually.

### **3.5.3.1.1 Intercoder Reliability**

Two aspects of coding were reviewed. They were the self-perceived affective experiences coding and the self-reported performances coding. Regarding the self-perceived affective experiences coding, emotion coding method and magnitude coding method were employed to code the learners' self-perceived affective experiences in the first cycle. A deductive approach was employed to this subsystem.

Emotion Codes 'label the emotions recalled and/or experienced by the participant, or inferred by the researcher about the participant' (Saldaña, 2009, p. 86). As previously stated in Chapter 2, some questions in the affective science field were frequently raised, such as 'what are emotions?' and 'How can emotions be measured?' To explore the learners' self-perceived affective experiences, it is important to answer above questions. In this study, the definition and measurement of affective experiences were in accordance with Component Process Model (CPM) through the lens of DST. An emotion was defined 'as an emergent, dynamic process based on an individual's subjective appraisal of significant events' (Scherer 2009c, p. 1307), which definition was compatible with the research questions. CPM was utilised to define and measured emotions only. Other components, such as facial expression, blood pressure in CPM were not examined.



In addition, Geneva Affect Label Coder (GALC) was employed as the coding scheme and the translation from Chinese to English was in accordance with the GRID paradigm. GALC (Appendix 4.1) was developed by Scherer (2005) and was employed as standard list with 36 affective categories 'in research using free response report of subjective feeling states and to use a reliable, standardized coding procedure' (Scherer 2005, p. 713). GALC was established on the basis of an Excel macro program with a large-scale event sampling by Scherer and his colleagues in 2004. GALC was afterwards being studies in various validation studies in different languages. In the meantime, GRID (Appendix 4.2) was employed together with GALC. The GRID paradigm consisted of 24 prototypical emotion terms and 144 emotion features in 24 languages which represented 27 countries. GRID reported the results of an international interdisciplinary collaboration empirical study which aimed to assess the meaning of emotion words. Other emotions emerging from the text were translated by PI and other two research assistants individually initially. A discussion took place in a later stage.

The emotions were perceived by the participants and were coded deductively in line with GALC. From a DST perspective, it is also important to assess the intensity of emotions. Different emotions within the same emotion family vary in terms of intensity, for example, irritation-anger-rage. Magnitude Coding 'consists of and adds a supplemental alphanumeric or symbolic code or subcode to an existing coded datum or category to indicate its intensity, frequency, direction, presence, or evaluative content. Magnitude Codes can be qualitative, quantitative, and/or nominal indicators to enhance description' (Saldaña, 2009, p. 58). As

Saldaña argued, ‘Magnitude Coding is appropriate for qualitative studies in social science disciplines... can consist of words or abbreviations that suggest intensity’ (2009, p. 58).

Emotions were categorised into three zones, namely, high level zone (coded as H), medium level zone (coded as M) and low level zone (L). In the meantime, emotions were also categorised as positive emotion (coded as POS) and negative emotion (coded as NEG). For example, one participant, Mary, reported her emotions toward her speaking performance in week 10. The coding example was as follows:

‘I felt <b>really thankful</b> to the judges who gave me	GR H POS
that high score and I was <b>really satisfied with</b>	CO H POS
my performance, though at the beginning of the	
speech, I felt <b>a bit anxious.</b> ’	AN L NEG

The affective responses were not considered as discrete emotions; instead, they were considered as several simultaneous emotion blends with different intensities. Therefore, according to the example above, the affective pattern for Mary’s self-reported speaking performance in week 10 could be categorised as a combination of higher level positive affects and lower level negative affect.

Regarding the self-reported performances coding, In Vivo coding method and magnitude coding method were applied to code the learners' self-reported performances in the first cycle. An inductive approach was employed to code their responses.

In Vivo code referred to 'a word or short phrase from the actual language found in the qualitative data record' (Saldaña, 2009, p. 74). In Vivo codes were elicited directly from the text, using the participants' own words. In Vivo coding was beneficial to engage in the learners' lifeworld. This argument can be linked to Charmaz (2006) who argued that In Vivo codes could 'help us to preserve participants' meanings of their views and actions in the coding itself' (Charmaz, 2006, p. 55). Therefore, In Vivo coding method was employed to examine students' self-reported performances trajectories and relevant attractor states.

Magnitude coding method was also employed to categorise the learners' self-reported performances into three zones, above average zone (coded as ABO), average zone (coded as AVE) and below average zone (coded as BEL).

#### **3.5.3.1.2 Intercoder Agreement**

With my two colleagues, we agreed to employ proportion agreement method (Morrissey, 1974) to calculate intercoder reliability. Proportion agreement did not 'take into consideration the possibility that coders might agree occasionally by chance' (Bernard, 2000, p 459-461).

Regarding the learners' self-perceived affective experiences, we first individually made notations of our understanding of each emotion from GALC and translations from GRID. Next, we together compared our notations and discussed our understandings. 23 out of 24 Chinese translations of English emotion label codes from GRID could be found on Geneva Affect Label Coder (GALC), except 'being hurt'. Moreover, there were seven affective label codes from GALC that could be categorised into three very similar Chinese translation groups. Jealousy code contained two label codes, 'jealousy' and 'envy'. Expectation code contained three label codes, 'hope', 'longing' and 'lust'. Relaxation code contained two label codes, 'relaxation' and 'relief'. Therefore, 32 affective codes with both English and Chinese version were used for data coding and analysis.

In the first cycle coding, the intercoder reliability scores were high. To be specific, regarding the coding of the learners' self-perceived affective experiences, 87 emotions within 29 emotion families were identified. 83 emotions were identified by three researchers from the same segment of text in the margin with a bracket and were defined with the same codes. The intercoder reliability score was 95.40%. After intercoder agreement process, the intensity score and the evaluation score (if a discrete emotion was positive or negative) were really promising. All three coders rated 87 emotions with exactly the same intensity.

In the meantime, three other label codes emerged from data, namely, 'apathy', 'confidence' and 'resignation', giving 35 affective codes in total. The Affective Pool (Appendix 4.3) was the final version to be employed for deductive emotion coding of the learners' self-perceived affective experiences.

Regarding the learners' self-reported performance coding, 40 performances were identified with different intensities. 37 out of 40 were examined as the same coding with the same intensity, giving an intercoder reliability score of 92.50%. 177 segments of text were coded by In Vivo coding method and 169 segments were identified as the same codes, giving an intercoder reliability score of 95.48%.

### **3.5.3.2 Second Cycle Coding**

I conducted a second cycle coding by using pattern coding method and longitudinal coding method. The intercoder agreement method referred to the proportion agreement method (Morrissey 1974) by which intercoder reliability could be 'calculated simply as the percentage of agreement among coders' (Campbell *et al.* 2013, p. 309).

#### **3.5.3.2.1 Intercoder Reliability and Agreement**

Two aspects of coding were reviewed. They were the self-perceived affective experiences coding and the self-reported performances coding. Regarding the self-perceived affective experiences coding, pattern codes were 'explanatory or inferential codes, ones that identify an emergent theme, configuration, or explanation. They pull together a lot of material into a more meaningful and parsimonious unit of analysis. They are a sort of meta-code. ... Pattern Coding is a way of grouping those summaries into a smaller number of sets, themes, or constructs' (Miles & Huberman, 1984, p. 69).

Two types of pattern codes were identified from the participants' responses, namely, Facilitative (FAC) and Debilitative (DEB). To be specific, in the second cycle coding, the aim was to examine how the learners' self-perceived affective experiences, self-reported performances and identified attractor states interacted with each other. Pattern codes were identified according to the main research question: 'From a dynamic perspective, what is the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom?'

Affective experiences were considered as the learners' subjective appraisal of events (Scherer, 2009). In this study, the learners' affective experiences were collected as simultaneous emotion blends with different intensities. The emotions were the learners' responses to significant events, which responses referred to the learners' self-reported performances with different intensities. The learners' performance trajectories were captured here.

In the traditional research paradigm, the theme of 'Facilitative and Debilitative Anxiety' had been widely studied for long (Dörnyei *et al.*, 2014). The terms of 'facilitative' and 'debilitative' were initially employed to examine the relationship between competitive anxiety and the sport performance. These terms were also used to identify the intensity of FL anxiety (Horwitz, 2010), the relationship with motivation theories and L2 self-related theories (Dörnyei, 2009c, 2014). Dörnyei *et al.* (2014) introduced a new motivational framework, Directed Motivational Currents (DMC). DMC has a salient, facilitative structure that 'plays a crucial role in facilitating the progress of motivated behaviour' (Dörnyei *et al.*, 2014, p. 100). It would be more fruitful to identify facilitative or

debilitative simultaneous emotion blends, their patterns and their relationship with the learners' self-reported performances, that has not yet been identified in the SL/FL context.

After categorising the combinations of simultaneous emotions with different intensities, two pattern codes were identified. Facilitative (FAC) code referred to the learners' affective patterns correlating with their self-reported better performances than their perceived English proficiency would have suggested. Such affective experiences appeared to have positively affected their performances as they perceived it. Debilitative (DEB) code referred to the learners' affective patterns correlating with their self-reported worse performances than their perceived English proficiency would have suggested. Such affective experiences appeared to have negatively affected their performances as they perceived it.

Final pattern code (FAC) was created for describing the relationship between the simultaneous emotion blends and the learners' self-reported performances in above average zone (ABO). Final pattern code (DEB) was created for describing the relationship between the simultaneous emotion blends and their self-reported performances in below average zone (BEL). At this stage, the intercoder reliability rate was 100%.

Regarding the self-reported performances coding, longitudinal coding referred to 'the attribution of selected change processes to qualitative data collected and compared across time' (Saldaña, 2009, p. 173). Longitudinal Qualitative Data Summary Matrix (LQDSM) which was developed by Saldaña (2003 & 2008)

was employed to explore the learners' self-reported performances across time (Appendix 4.4). Seven categories organised the data into matrix cells, namely, 'Increase and Emerge; Cumulative; Surges, Epiphanies, and Turning Points; Decrease and Cease; Constant and Consistent; Idiosyncratic and Missing' (Saldaña, 2009, p. 175-176). I briefly illustrated what these categories referred to and how they were utilised through the lens of DST in this study.

**Increase and Emerge.** This category referred to the answers to the question, 'What increases or emerges through time?' It referred to the state at the beginning of a given timescale. In this study, the responses which were relevant to the learners' initial conditions have been displayed in this category.

**Cumulative.** This category referred to the successive experiences over a period of time. For example, if a learner reported that he/she tried to remember 50 new vocabularies every day. Then his/her vocabulary was cumulative over time.

**Surges, Epiphanies, and Turning Points.** This category referred to the 'types of changes result from experiences of sufficient **magnitude** that they significantly alter the perceptions and/or life course of the participant' (Saldaña, 2009, p. 175, emphasis added). For example, one participant, Eric, reported that during the summer vacation, his parents were divorced and their house was sold afterwards, which resulted in disruption in his routine life. He reported it in his interview: 'I cannot hide the truth from my classmates that my parents were divorced, although I do not want them to know. They will soon find it abnormal if I do not go home on weekends'. Such a response was considered as of sufficient magnitude to alter the participant's conceptions.



**Decrease and Cease.** This category referred to the responses of a decline or eventual cessation. For example, some of the learners started to recite the vocabulary outlined by Neusoft in week 8 and stopped in week 14. They started to recite the vocabulary because they wanted to obtain a good score in the exam arranged by Neusoft and worked for the company after graduation. They stopped reciting the vocabulary simply because they have finished the exam. Therefore, the responses of eventual cessation of reciting the vocabulary outlined by Neusoft have been displayed in this category.

**Constant and Consistent.** This category referred to ‘recurring and often regularized features of everyday life’ (Lofland *et. al.*, 2006, p. 123). For example, the learner’s response of ‘attending self-study sessions every evening’ have been displayed in this category.

**Idiosyncratic.** This category referred to some changes resulted from experiences that were **not** of **magnitude**. Such experiences were ‘inconsistent, ever-shifting, multidirectional and, during fieldwork, unpredictable’ actions in life (Saldaña, 2003, p. 166).

**Missing.** This category referred to the answers to the question, ‘What is missing through time?’ For example, most of the participants in this study to some extent joined in extracurricular activities (such as Student Union or drama clubs). The responses of a lack of participating in extracurricular activities have been displayed in this category.

This phenomenographic study aims to explore the learners' different ways of experiencing a phenomenon. The learners' self-reported performance trajectories were identified from six aspects, namely, vocabulary, grammar, listening, reading, writing and speaking. These aspects each could be considered as a dynamic system. During the intercoder reliability check process, 177 codes were displayed in Longitudinal Qualitative Data Summary Matrix (LQDSM). 161 codes were displayed in the same position in LQDSM. As a result, the intercoder reliability score was 90.96%.

LQDSM would allow me to identify how relevant attractor states changed over short, medium and longer timescales and how they differed in various contexts. The identification of attractor states within-case and cross-cases over time could be linked to answer the second, third and fourth subsidiary research questions. As Braun and Clarke (2012) argued, it was vital to link the researcher's analysis to the literature and developed 'analytic points beyond just summarising the content of the data' (p. 257). Therefore, I integrated literature into the analysis of affective pattern coding and into defining themes of attractor states. I went through the 12 participants' Matrixes on an individual basis initially and made cross-case comparisons afterwards. I also linked the data to the research questions and to the existing literature. These steps allowed me to locate my analysis in existing literature, which would 'contribute to, develop further, or challenge what we already know about a topic' (Braun & Clarke 2012, p. 257). Altogether, eight attractor states were identified from the 12 cases. I will present the findings in the next Chapter.

### 3.6 Summary

In this chapter, I initially introduced the origin of phenomenography, the definition of ‘phenomenon’ and ‘conceptions’, and the reasons for selecting a phenomenographic approach. Second, I distinguished the first and the second order perspective. I provided a ‘red clay-as-experienced’ example to elaborate several concepts including ‘reality’, ‘conceptions of reality’, ‘world’, ‘awareness of the world’, ‘knowledge’, ‘qualitative differences’ and ‘meaning and structural aspects of an experience’. In addition, I also answered three questions which were frequently raised by researchers who were interested in this study. Third, I illustrated the non dualistic ontological assumptions in phenomenography. I also elaborated the epistemological assumptions in phenomenography which referred to the investigation of ‘what counts as knowledge’ (Creswell, 2012, p. 21). I utilised the solution to Meno’s Paradox to illustrate the relational position of knowledge in phenomenography. Fourth, I explained the methodological considerations including common data collection methods, the role of a researcher, categories of description, outcome spaces, and the strengths and weakness of phenomenography. Finally, I elaborated the rationale of employing phenomenography in this study, the research designs and the data analysis procedures.

Regarding the research designs, four instruments, namely, diary, qualitative survey, semi-structured interviews and class observation were employed for data collection. The timescales of each instrument, translation issues, sampling and ethical considerations were discussed. Regarding the data analysis procedures, I explained the data coding process and how I transcribed the data. In addition, I

checked the intercoder reliability and agreement by two circles of coding. In the first cycle, two deductive coding approaches including magnitude coding method and emotion coding method were employed for measuring affective patterns. Two inductive coding approaches including In Vivo coding method and magnitude coding method were employed for measuring self-reported performance trajectories. In the second cycle, pattern coding method was employed for theorising affective patterns. Longitudinal coding method was employed for depicting self-reported performance trajectories. As a result, the coding scheme was established after a successful completion of the intercoder reliability and agreement check.

## **Chapter Four Findings**

### **4.1 Introduction**

In this chapter, I will present the findings of each individual case. Before describing the results of the 12 cases, I initially will provide an overview of the key points, including the timescales, the learners' initial conditions, the identified attractor states, the learners' self-perceived affective experiences, and the learners' self-reported performance trajectories. Second, I will describe the first learner Alex's profile in full and ensure that all of the 12 participants' profiles follow the same format. The profiles will be structured as follows. First, I will summarise the learner's affective experiences. Due to the word count limit, I will only present examples for each affective pattern. Next, I will summarise the identified attractor states and the performance trajectories. Finally, I will explain the relationship between the learners' self-perceived affective experiences and their self-reported performances. At the end of this chapter, I will also provide a summary to describe the key points of each learner.

### **4.2 Overview**

This was a six-month longitudinal study with an interval of seven weeks during which the participants were having their summer vacation. The first period of this study was from 12th April, 2014 to 20th June, 2014, and the second period was from 1st September, 2014 to 31st October, 2014. 12 second-year Chinese students of English from a Foreign Language University in China participated in this study.

As Sandberg (2000) argued, the main objective in most phenomenographic studies was to categorise the conceptions of a phenomenon at a collective level instead of illustrating the richness of individual conceptions. In addition, Uljens (1996) suggested a phenomenographer to create individual profiles of each participant initially, in order to engage with the participants' lifeworlds before making a comparative analysis. In this study, 12 individual profiles were created initially before making a comparative analysis. I initially established a full description for each profile. The format of the data output for each profile was very similar. In addition, this study did not focus on the richness of the learners' conceptions. Due to the word count limit, I only provided examples for each affective pattern and described the special points on the performance trajectories that contributed to the understanding of a phenomenon at a collective level.

#### **4.2.1 Timescales**

All of the participants were second-year university students at the time of this study. Over six months, they submitted 14 electronic diary entries, seven qualitative surveys and were interviewed for seven times. Their responses reflected the changes of their self-reported performances and self-perceived affective experiences during their FL developing period. The participants' self-evaluated English proficiencies were reported from six aspects, namely, *Vocabulary, Grammar, Listening, Reading, Writing and Speaking*. These aspects of English were tested by different types of examinations including four regular exams, one final exam, one mid-term exam, one English oral competition, one English debating contest and one English writing contest.

De Bot (2014) argued that distinctions existed between the concept of timescales and time windows. Timescales referred to ‘the granularity of the developmental process’ while time windows referred to ‘the period of the time studied’ (de Bot 2014, p. 31). The time window in this study was six months. In addition, six subsidiary time windows also existed according to the six different aspects of English proficiency. For example, the study of their English writing development took place over a five-month (05/06-22/10) time window with an interval of seven weeks (09/07-27/08). All of these timescales interacted with each other (Byrne & Callaghan, 2014).

#### **4.2.2 The Learners’ Initial Conditions**

MacIntyre and Gregersen (2013) defined ‘Initial Conditions’ as states at the time measurement started. Similarly, Verspoor (2014) argued that the first state would produce the second and so forth, and the successive states provided a full picture of the whole development. In this study, the initial conditions were identified and displayed in the first category of LQDSM, ‘Increase and Emerge’ for each participant.

#### **4.2.3 Identified Attractor States**

‘An attractor state – a critical value, pattern, solution or outcome towards which a system settles down or approaches over time.’ (Hiver, 2014, p. 21)

Hiver’s argument can be linked to Dörnyei (2014) who argued that such patterned outcomes were stabilised via self-organisation, and were not directed

purposely into existence. To identify attractor states in the SLA/FLA context was not new. For example, Waninge (2014) identified four main attractor states, namely, interest, boredom, neutral attention and anxiety that made up the learning experiences in an SLA classroom. She further analysed one attractor state in particular, namely, interest, ‘partly because of its frequent occurrence in the interview data and partly because of its motivational relevance in that interest has been shown to be most related to the quality of classroom experiences’ (Waninge 2014, p. 204).

‘A potentially promising strand of research would be the situated longitudinal micro-mapping of different states within the learning environment ... as a means of analysing the variability of the learning experience, its relation to the context and its implications for the overall learner experience on a larger timescale.’

(Waninge 2014, p. 211)

In this study, altogether eight attractor states were identified, namely, ‘Integrative Disposition’, ‘External Incentives’, ‘Topic Familiarity’, ‘Amotivation’, ‘Autonomy’, ‘Vision’, ‘Self-discrepancy’ and ‘Self-esteem’. These attractor states were initially identified from different individual profiles and afterwards were compared cross cases and would be discussed at a collective level in Chapter Five.



#### 4.2.4 The Learners' Self-perceived Affective Experiences

All of the participants' affective responses were laid out in one figure via NVivo 10. Figure 4.1.1 provided an example of the 12 participants' self-perceived emotions of their vocabulary performance in week 2.

To be specific, Figure 4.1.1 displayed the identified emotions and how these emotions were categorised into different affective patterns. 'V2' from the 'Identified Context' column referred to the learners' vocabulary performances in week 2. 'HP' from the 'Affective Patterns' column referred to 'Higher Level Positive Affective Pattern'. Similarly, 'LNLP' referred to 'Mixed Lower Level Negative and Lower Level Positive Affective Pattern'; 'LNHP' referred to 'Mixed Lower Level Negative and Higher Level Positive Affective Pattern'; 'MP' referred to 'Medium Level Positive Affective Pattern'; 'MPN' referred to 'Medium Level Positive and Negative Affective Pattern'.

The small circle in each column referred to the presence of the emotion against its intensity. For example, Alex reported *confidence –contentment –expectation* at higher level (HP). Amber reported *confidence –contentment*, but the intensity of these emotions was reported at medium level (MP). This figure enabled me to look at the learners' affective changes over time. I was able to compare and contrast different learners' self-perceived emotions in different contexts across time.

Identified Context	Affective Patterns	Identified Student's name												
		Alex	Amber	Bruce	Cindy	Eric	Fiona	Louis	Lucy	Mary	Nancy	Peter	Sarah	
V2	Identified													
	Affects	○	○	○										
	Confidence (CF)													
	Contentment (CO)													
LNLP	Identified					○								
	Affects					○								
	Confidence (CF)													
	Anxiety (AN)													
LNHP	Identified													
	Affects									○	○			
	Confidence (CF)													
	Apathy (AP)													
MP	Identified													
	Affects		○											
	Confidence (CF)													
	Contentment (CO)													
	Expectation (EX)													
	Interest (IN)													
MPN	Identified													
	Affects													
	Boredom (BO)													
	Relaxation (RL)													

Figure 4.1.1 The Learners' Self-perceived Affective Experiences

#### **4.2.5 The Learners' Self-reported Performance Trajectories**

There were six subsidiary systems in operation, namely, vocabulary subsystem, grammar subsystem, listening subsystem, reading subsystem, writing subsystem and speaking subsystem. Each subsystem had its own time window. According to Sultana's (2003, 2008 & 2009) Longitudinal Qualitative Data Summary Matrix (LQDSM), the learners' responses to their self-reported performances were organised into the matrix. In the meantime, magnitude coding method was employed to categorise their self-reported performances into three zones, namely, the above average zone (coded as ABO), the average zone (coded as AVE) and the below average zone (coded as BEL). By referring to Sultana's LQDSM, All of the initial codes obtained via the first cycle In Vivo coding were analysed according to the six subsystems and distributed in the LQDSM. The LQDSM was imported into NVivo and all codes which were associated with different timescales were directly distributed to the relevant categories in the matrix. The use of NVivo facilitated further analysis between the six subsidiary time windows.

Figure 4.1.2 was established to present the learner's self-reported performance trajectory. There were three horizontal lines in the figure. The dashed line from the top was labelled as ABO, which referred to the self-reported optimal performance. The dashed line in the middle was labelled as AVE. It referred to the learner's self-reported average performance. The dashed line from the bottom line was labelled as BEL. It referred to the learner's self-reported worst performance. Eight dots were evenly distributed on AVE dashed line. They referred to different timescales.

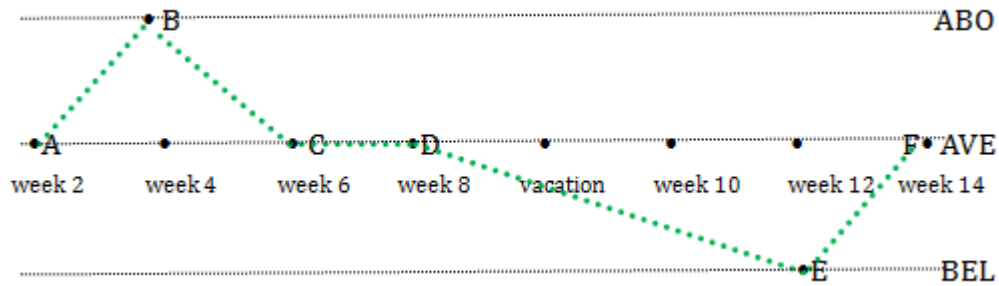


Figure 4.1.2 The Learner's Self-reported Performance Trajectory

The colored polygonal line in the middle of the figure referred to the learner's self-reported performance trajectory through the time window for the study. This polygonal line travelled between the three dashed lines. The learner's self-reported performances were distributed to the relevant locations. For example, if a learner reported that his/her vocabulary performance was normal in week 2, 6, 8, 14, excellent in week 4, and worst in week 12, then six dots (A-F in the figure) were distributed to the relevant locations accordingly. Afterwards, the green dashed polygonal line linked these dots to create the learner's vocabulary performance trajectory as presented in Figure 4.1.2.

In this study, regarding each learner's self-reported performance, six trajectories were identified to describe the changes in the learner's self-reported performances over six months. For each learner's profile, six trajectories were presented in four figures for clarity. To be specific, the first figure described the learner's self-reported vocabulary performance trajectory (green dashed line); the second described the learner's self-reported grammar performance trajectory (blue dashed line); the third figure described the learner's self-reported reading (red dashed line) and listening (yellow dashed line) performance trajectories; and

the fourth figure described the learner's self-reported speaking (orange dashed line) and writing performance (purple dashed line) trajectories.

In the following sections, I will only describe the first learner Alex's self-reported performance trajectories in full; because all of the 12 participants' profiles followed the same format. I will select the special points on the performance trajectories from the other 11 profiles. These special points should have contributed to the understanding of a phenomenon at a collective level.

### **4.3 Alex's Profile**

Alex reported that he liked to be nominated to study a master degree in the same university. Such nominations were in accordance with the students' academic performances. Therefore, he claimed that it was necessary for him to obtain high academic scores in the exams. He was a self-perceived autonomous student with clear goals about his future. He studied hard for exams and believed in himself. As he argued, *'I am really enjoying the life here in our university. And it is obvious that in terms of the equipments for simultaneous interpreting and the teaching quality, our university ranks the best. I would like to spend another 3 years here for a master degree after graduation, or maybe I could get the opportunity to teach here!'* Alex claimed that he liked to discuss issues, such as learning strategies and future plans, with his friends, roommates and classmates. He also reported that he frequently consulted with the teachers and took their advice for better English development.

### 4.3.1 Alex's Affective Experiences

Altogether seven emotions of different intensities were identified from Alex's responses. They were *anxiety*, *apathy*, *confidence*, *contentment*, *disappointment*, *expectation* and *stress*. These emotions interacted with each other at different intensities and appeared to coalesce into 21 combinations. For example, in Figure 4.1.1, the *confidence*, *contentment* and *expectation* were reported relevant to his self-reported vocabulary performance in week 2. These three emotions were considered as coalescing into one combination. Within each combination, the emotions 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 seven salient affective patterns below. For example, the *confidence –contentment –expectation* pattern was categorised in the '*Higher Level Positive Affective Pattern*'.

(a) *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

(b) *Lower Level Negative Affective Pattern*

(c) *Higher Level Positive Affective Pattern*

(d) *Higher Level Negative Affective Pattern*

(e) *Mixed Higher Level Negative and Lower Level Positive Affective Pattern*

(f) *Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Medium Level Positive Affective Pattern*

The affective patterns above were related to different self-reported performances. For example, the *confidence –contentment –expectation* pattern was related to Alex's self-reported optimal vocabulary performances in week 2. Therefore, this pattern was categorised as **Facilitative** to his learning. On the other hand, if an affective pattern was related to his worst self-reported performances, such a pattern should be categorised as **Debilitative** to his learning. If an affective pattern was related to his average self-reported performances, such a pattern will be considered as normal. From Alex's responses, pattern (e), (f), and (g) were considered as normal affective patterns. In the following sections, I will provide examples for each facilitative and debilitative pattern.

**4.3.1.1 Perceived Facilitative Affective Experiences**

Three patterns (a, b & c, outlined below) could be categorised as more facilitative for Alex's self-reported performances. From his responses, these affective experiences related to better performance than his perceived English proficiency would have suggested. The affective experiences appeared to have positively affected his performance as he perceived it.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Alex reported two lower level positive emotions, namely, *confidence* and *expectation*, together with three lower level negative emotions, namely, *stress*, *anxiety*, and *dissatisfaction*. From Alex's responses, these affective experiences

related to better performance than his perceived English proficiency would have suggested. The different combinations of these emotions appeared to have positively affected his vocabulary performance in week 14, grammar performance in week 6 and week 14, and reading performance in week 14.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher (week 6, grammar)?

Alex: I think I **performed very well**. The teacher's feedback was fair. I felt **a bit anxious** and, well, I don't know, and **a little bit expected** to learn from mistakes and to perform better next time.

From Extract 1, two emotions, namely, *anxiety* and *expectation* were reported with lower intensity. These emotions were reported relevant to better performance than his perceived English grammar proficiency would have suggested in week 6. Such an *anxiety–expectation* pattern could be categorised into the '*Mixed Lower Level Negative and Lower Level Positive Affective Pattern*'.

(b) *Lower Level Negative Affective Pattern*

Alex reported that two lower level negative emotions, namely, *disappointment* and *apathy* appeared to have positively affected his writing performance in week 5.



[Extract 2: Diary]

Alex: I think my writing performance in the last exam (researcher's note: week 5) was **very good**. By the way, nobody would feel that they had performed badly, I guess. It was simply because the writing topic was very familiar. I **did not care** about the result of this writing exam **that much**; because this score would not be presented on our transcripts. But I still felt **a bit disappointed** at the topic as it was too easy. I thought it was a waste of my time.

From Extract 2, two emotions, namely, *apathy* and *disappointment* were reported with lower intensity. These emotions were reported relevant to better performance than his perceived English writing proficiency would have suggested in week 5. Such an *apathy –disappointment* pattern could be categorised into the '*Lower Level Negative Affective Pattern*'.

(c) *Higher Level Positive Affective Pattern*

Alex reported that three higher level positive emotions, namely, *confidence*, *contentment* and *expectation* were relevant to this pattern. These affective experiences appeared to have positively affected his vocabulary performance in week 2, listening performance in week 8, and speaking performance in week 4.

[Extract 3: Qualitative Survey]

Question: What is your perception of your vocabulary proficiency in week 2?

How did you feel after you received the feedback from your teacher?

Alex: I was **very confident** in myself! I have finished reciting the vocabulary books for TEM-8 (Test for English Majors Level Eight), so vocabulary exams would never bother me. I **really expect** to take more of such exams. The vocabulary section in the exam was simple. I was **very satisfied** with my performance and I knew I would obtain a very good score even before I received the feedback from my teacher. The feedback was justified. I cannot agree more with my teacher.

From Extract 3, three emotions, namely, *confidence*, *contentment* and *expectation* were reported with higher intensity. These emotions were reported relevant to better performance than his perceived English vocabulary proficiency would have suggested in week 2. Such a *confidence –contentment –expectation* pattern could be categorised into the ‘*Higher Level Positive Affective Pattern*’.

#### **4.3.1.2 Perceived Debilitative Affective Experiences**

One pattern (d, outlined below) could be categorised as more debilitative for Alex’s performance. From his responses, this affective pattern related to poorer performance than his perceived English proficiency would have suggested. The different combinations of these emotions appeared to have negatively affected his performance as he perceived it.

*(d) Higher Level Negative Affective Pattern*

Alex reported three higher level negative emotions, namely *anxiety*, *stress* and *disappointment* relating to this affective pattern. From Alex's responses, this affective pattern related to poorer performance than his perceived English proficiency would have suggested. The affective experiences appeared to have negatively affected his vocabulary performance in week 6.

[Extract 4: Interview]

L: Regarding your vocabulary performance (week 6), how did you feel after you received the feedback from your teacher?

Alex: **Not very good**. The questions were strange. They were not outlined before the exam by the teacher. After the exam, I talked to my classmates and they had the same feeling as well. It was the teacher's or the examiner's mistake, I guess. After I received the feedback from the teacher, foreseen low score appeared on my transcript. I was **really disappointed** at the reactions the department had after they realised such a mistake. They still kept the low scores on our transcripts. Although almost everybody had received low scores, but that was not the point. I felt **really stressful** and **anxious** when I saw such a low score on my transcript.

From Extract 4, three emotions, namely, *anxiety*, *stress* and *disappointment* were

reported with higher intensity. These emotions were reported relevant to worse performance than his perceived English vocabulary proficiency would have suggested in week 6. Such an *anxiety –stress –disappointment* pattern could be categorised into the '*Higher Level Negative Affective Pattern*'.

### **4.3.2 Alex's Self-reported Performance**

#### **4.3.2.1 Identified Attractor States**

From Alex's responses of his self-reported performance, altogether five attractor states were identified. Some of the attractor states contained different components. These attractor states were 'Integrative Disposition' which contained two components of 'Personal goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal and 'Peers' Influence'; 'Autonomy', 'Vision' and 'Topic Familiarity'.

**Integrative Disposition:** Personal Goals; Desired Level of L2 Competence;

Dörnyei (2009) defined 'Integrative Disposition' in accordance with Ushioda's (2001) classification of motivation dimensions. Integrative disposition referred to a broad cluster which consisted of 'Personal goals; Desired levels of L2 competence; Academic interest; Feelings about ... [L2] countries or people' (Ushioda, 2001, p. 30). In this study, Alex reported that he would like '*he would like to be nominated to study a master degree in the same university*'. This response can be categorised in the component of 'Personal Goals' of this attractor state.

### **External Incentive:** Teacher's Appraisal; Peers' Influence;

‘People are pulled toward behaviours that offer positive incentives and pushed away from behaviours associated with negative incentives...differences in behaviour from one person to another or from one situation to another can be traced to the incentives available and the value a person places on those incentives at the time’ (Bernstein, 2014, p. 333). ‘External Incentives’ was sometimes categorised as contextual factors (Ushioda, 2009, 2014). Many empirical studies focused on the exploration of the relationship between external incentives (from teachers, peers or family) and the learners’ performances in the SL/FL area (Orsmond & Merry, 2013; Verspoor, 2014; Ushioda, 2014). In this study, Alex was a self-perceived positive student and would like to consult with his teacher and his peers to improve his English ability. The teacher’s appraisal was reported to have a positive impact on his study plans. Two components, namely, the teacher’s appraisal and the peer’s influence were considered as incentives coming from outside of the individual, which have been categorised in the attractor state, ‘External Incentives’.

### **Autonomy**

In this study, ‘Autonomy’ referred to ‘Learner Autonomy’. Benson’s and Voller’s (1997) definition of ‘Autonomy’ in the FL learning context was widely quoted. They defined autonomy in five ways:

- ‘the *situations* in which learners study entirely on their own’;
- ‘a set of *skills* which can be learned and applied in self-directed learning’;

- ‘an inborn *capacity* which is suppressed by institutional education’;
- ‘the exercise of *learners’ responsibility* for their own learning’;
- ‘the *right* of learners to determine the direction of their own learning’.

(Benson & Voller, 1997, p. 1-2)

In addition, Dörnyei (2009b) argued that autonomy ‘occurs when people engage in an activity because they highly value and identify with the behaviour, and see its usefulness’ (p. 14). In this study, Alex’s responses such as ‘*attending every evening self-study sessions*’ was categorised as *Autonomy*. Because such evening sessions were not compulsory to attend; Alex could decide what to learn, how to learn on a self-directed basis.

## **Vision**

‘Vision emerges or is developed within personal development projects. This vision has much to do with giving meaning to one’s life, with helping to make shifts in professional careers and with coaching yourself in realising a personal dream’ (van der Helm, 2009, p. 98). In addition, van der Helm (2009) argued that vision was ‘preferred futures as opposed to possible futures or likely futures’ (p. 99). For example, regarding Alex’s self-reported speaking performance, he reported that he would like to teach in the university after graduation, and strongly believed that he could be a lecturer in the same university. Such responses have been categorised as ‘*Vision*’.

## **Topic Familiarity**

‘Topic Familiarity’ was defined as ‘the amount of direct and explicit knowledge a writer presumably has in relation to a topic, with knowledge built from different kinds of experience such as personally physically experiencing or observing something, conversing and thinking about something, and obtaining information about something from other people or knowledge sources’ (Yang 2014, p. 10). For example, Alex reported that ‘the writing topic was very familiar’. Such a response has been categorised as ‘Topic Familiarity’.

### **4.3.2.2 Alex’s Self-reported Performance Trajectories**

Regarding Alex's self-reported performances, six trajectories were identified to describe the changes of his self-perceived performances over six months. The interactions between his self-reported performances, attractor states and affective patterns were illustrated in the following sections.

Figure 4.2.1 described Alex's self-reported vocabulary performance (green dashed line) trajectory; Figure 4.2.2 described his self-reported grammar (blue dashed line) performance trajectory; Figure 4.2.3 described his self-reported reading (red dashed line) and listening (yellow dashed line) performance trajectories; and Figure 4.2.4 described his self-reported speaking (orange dashed line) and writing performance (purple dashed line) trajectories.

- Alex's Self-reported Vocabulary Performance Trajectory

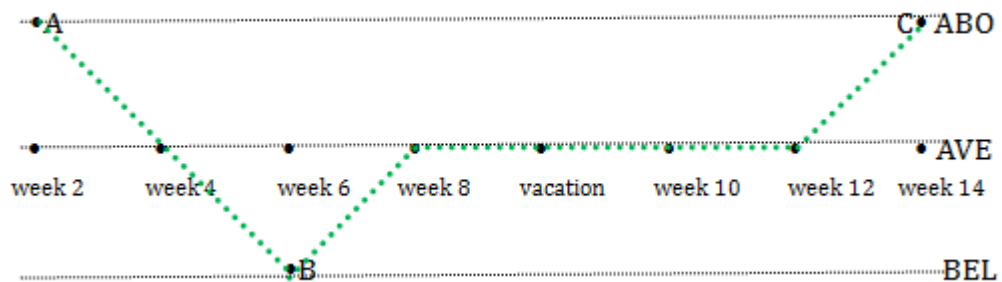


Figure 4.2.1 Alex's Self-reported Vocabulary Performance Trajectory

Figure 4.2.1 described how Alex's self-reported vocabulary performance changed over time. Six points were reported in week 2, 4, 6, 8, 12, 14. Three points A, B and C were reported crucial from his responses. The initial condition was identified from his wish of being '*nominated to study a master degree in the same university*'. Such a state was categorised into the component of 'Personal Goals', which belonged to the attractor state, 'Integrative Disposition'.

Over the time window of this subsystem, three attractor states, namely, 'Autonomy', 'Integrative Disposition' and 'External Incentives' were identified. The movement between the system components within each attractor as well as their interactions with the affective combinations significantly related to the change of his self-reported performance trajectory.

To be specific, Alex reported that he believed his vocabulary performance started at the optimal point in week 2, when he claimed that he '*attended every evening self-study sessions*' to '*recite TEM 8 vocabulary*'. He wished to have a large vocabulary. The attractors of 'Integrative Disposition' and 'Autonomy' together



with the facilitative affective experience of 'Higher Level Positive Affective Pattern' correlated with his self-reported excellent performance in week 2 at Point A. After reaching the optimal performance state, he argued that his performance decreased to the average point in week 4, then the worst point in week 6 at Point B. He claimed that *'It was the teacher's or the examiner's mistake'*. The attractor 'External Incentives' together with the debilitating affective experience of *'Higher Level Negative Affective Pattern (anxiety –stress –disappointment)'* correlated with his self-reported worst performance in week 6. Afterwards, his self-reported performance went upward to the average state in week 8 and week 12. At Point C, his self-reported performance reached the optimal state again. The attractor state 'Autonomy' moved onwards as he continued to *'attend every evening self-study sessions'*. 'Autonomy' interacted with the facilitative affective experience of *'Mixed Lower Level Negative and Lower Level Positive Affective Pattern (expectation –anxiety –stress'* in week 14.

Figure 4.2.2 described how Alex's self-reported grammar performance changed over time. Six points were reported in week 2, 4, 6, 8, 12, 14. Two crucial points A and B were reported crucial from his responses. They were related to his self-reported optimal performance in week 6 and week 14. Two attractors 'External Incentives' and 'Autonomy' were identified. The movement between the system components within each attractor as well as their interactions with the affective combinations significantly related to the change of his self-reported performance trajectory.

- Alex's Self-reported Grammar Performance Trajectory

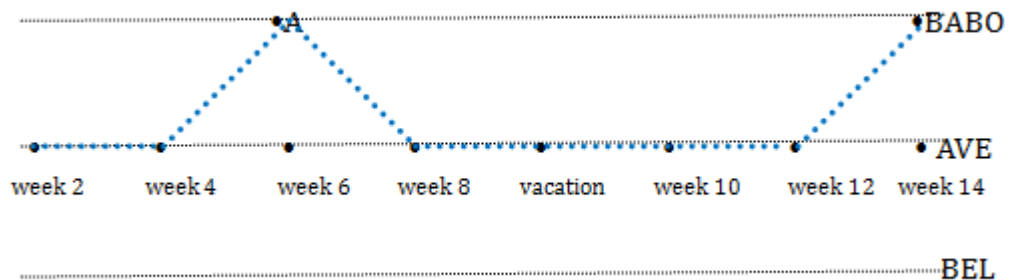


Figure 4.2.2 Alex's Self-reported Grammar Performance

To be specific, Alex reported that he believed his grammar performance started at the average point in week 2, when he claimed that he had selected to ‘*utilise Bo Bing Grammar Reference Book*’ to assist learning just as what his classmates have done. Such an initial condition was categorised as ‘External Incentives’ and ‘Autonomy’; because he liked to enhance his grammar skills through self-directed learning (*Bo Bing Grammar Reference Book* was not on the reading list). In addition, such behaviour was reported being influenced by his peers. A *confidence – expectation – contentment* affective pattern was reported at medium level in the first two weeks. In week 4, although the same attractor states and self-reported performances were identified, his affective experiences were different. He reported anxiety with low intensity together with confidence with high intensity. Such an *anxiety – confidence* pattern was categorised into the ‘*Mixed Lower Level Negative and Higher Level Positive Affective Pattern*’. After week 2, his self-perceived affective experiences was always reported as some positive emotions with different intensities together with some negative emotions

with lower intensity. The same attractor states, namely, ‘External Incentives’ and ‘Autonomy’ were reported moving together from the beginning to the end. As can be seen from Figure 4.2.2, no below average performance was reported. Therefore, these affective experiences or attractor states were considered as facilitative to his grammar learning. It has been identified that the negative emotions, or more specifically, the ambivalent emotions with both positive and negative emotions would facilitate learning.

- Alex's Self-reported Listening and Reading Performance Trajectory

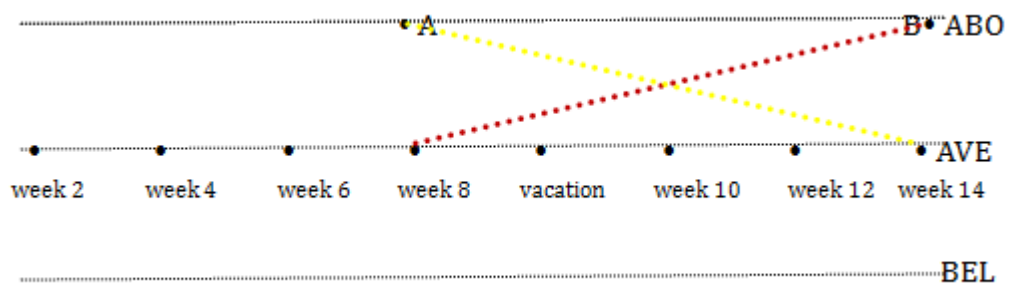


Figure 4.2.3 Alex’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Alex’s self-reported listening performance whereas the red one referred to his reading performance. Figure 4.2.3 described how Alex's self-reported listening and reading performances changed over time. For each performance, data were collected at two points, in week 8 and week 14. Two crucial points A, and B were identified from his responses. His English listening and reading ability were tested twice during the whole studied time window. They both 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.

Alex reported that he '*listened to BBC one hour daily*' to practice his English listening ability, which was categorised as the attractor of 'Autonomy'. This attractor and the facilitative affective experience of '*Higher Level Positive Affective Pattern (confidence – expectation – contentment)*' correlated with his optimal listening performance in week 8 at Point A. Afterwards, his self-reported listening performance went downward to the average state in week 14. The same attractor state was identified; however, the self-perceived emotions altered. *Anxiety* and *stress* with higher intensity which could be categorised into the '*Higher Level Negative Affective Pattern*' were identified in week 14. He did not mention why he felt so anxious and stressful in week 14 in his diary entries or qualitative surveys. This question was raised in the following up interview. He answered the question, '*I think it was maybe because I could not concentrate on the exam at the beginning, but nothing special happened that morning, as I could remember. I felt really tense till the end of the listening section. But these feelings did not negatively affect my performance.*' From his responses, a distraction with no reason at the beginning of the exam was identified. However, such a state was not a stable state because it flew away quickly. Therefore, no other attractor state was identified.

Regarding Alex's self-reported reading performance, he reported that his performance was at the average point in week 8 and went upward to the optimal point in week 14. He reported anxiety and stress with lower intensity in week 8. He reported that he had used '*The Economist*' to develop his reading ability from the beginning of his learning, which was categorised as the attractor of 'Autonomy'. This attractor state and the facilitative affective experience '*Mixed*

*Lower Level Negative and Lower Level Positive Affective Pattern (anxiety – stress – expectation – confidence)* correlated with his best reading performance at Point B in week 14.

- Alex's Self-reported Speaking and Writing Performance Trajectory

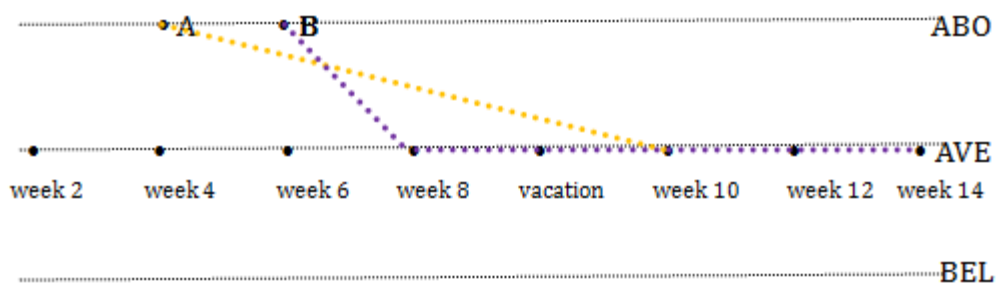


Figure 4.2.4 Alex's Self-reported Speaking and Writing Performance

The orange dashed line referred to Alex's self-reported speaking performance whereas the purple one referred to his self-reported writing performance.

Regarding Alex's self-reported speaking performance, he reported that he liked to teach in the university after graduation, and strongly believed that he could be a lecturer in his own university. The attractor state 'Vision' and the facilitative affective experience of '*Higher Level Positive Affective Pattern (contentment – expectation)*' correlated with his best speaking performance at Point A. He reported that his performance reached the optimal state in week 4 and went downward to the average point in week 10. 'Vision' was reported as the speaking subsystem's outcome, i.e. the attractor state. In week 10, anxiety and apathy with lower intensity was identified relevant to his performance. Such an affective combination could be categorised into the '*Lower Level Negative Affective Pattern*'.

Regarding Alex's self-reported writing performance, he reported that his performance reached the optimal Point B in week 5 (interview taken in week 6), went downward to the average point in week 8 and stayed average in week 14. The facilitative affective experience of *apathy* and *disappointment* with lower intensity ('*Lower Level Negative Affective Pattern*') were identified correlating with his best writing performance at Point B. In addition, he claimed that he did not take exercises to develop his English writing ability. His writing performance largely depended on his own familiarisation or understanding of the topics or the themes of the writing questions. Therefore, an attractor state, 'Topic Familiarity' was identified. This attractor state interacted with his *apathy –expectation* affective combination with lower intensity and *apathy –expectation –confidence* affective combination with lower intensity in week 8 and week 14, respectively.

### **4.3.3 Alex's Self-perceived Affective Experiences and Self-reported Performances**

As can be observed from Alex's profile, his self-perceived affective experiences cannot be entirely separated from his cognitions and motivations to learn. For example, in week 8, the final exam took three hours to test five aspects of English, namely, vocabulary, grammar, listening, reading and writing. After the exam, he reported a pool of cognitive, motivational and emotional factors at the same time. These factors also existed at the same time and different factors were reported relevant to a different type of performance. In the meantime, these factors were countable.

He had a strong career 'Vision' of being a teacher in the same university. He was motivated to learn autonomously. Such cognitive and motivational factors were reported relevant to his positive emotions (*confidence, contentment, expectation*) with higher intensities, especially in the first two weeks. All these factors contributed to his initial conditions at the same time. These cognitive, motivational, and emotional factors not only contributed to his initial conditions, but also to the attractor states. For example, his ambivalent emotions of *expectation, anxiety and stress*; together with his motivation to 'attend every evening self-study sessions' to recite vocabulary and his higher perceived English competence coalesced into a combination and became stable and relevant to the system outcome. Such a combination contributed to the attractor state, 'Autonomy' in week 14. Such an attractor state was identified relevant to his self-reported optimal vocabulary performance in week 14.

At this stage, we might say that the attractor state, 'Autonomy' largely referred to the motivational factor. However, we still cannot separated the emotional and cognitive factors from 'Autonomy'. This argument can be linked to Dörnyei's (2014) suggestion of 'identifying typical attractor conglomerates' (p. 84). In his vision, an attractor state consisted of cognitive, emotional and motivational factors. These factors cannot be entirely separated. They happened at the same time and contributed to attractor conglomerates (Dörnyei, 2014). This argument will be further illustrated in the Discussion Chapter.

Furthermore, different attractor states were identified relevant to different types of performances. For example, 'Integrative Disposition' was identified only relevant to Alex's self-reported vocabulary performances and 'Topic Familiarity'

was identified only relevant to his self-reported writing performances. The attractor states could be considered as mediations between his self-perceived affective experiences and self-reported performances. Alex's self-perceived affective experiences and self-reported performances happened and interacted with each other at the same time via the mediations of different attractor states.

In addition, he was reported as an FL learner with higher perceived English competence. He argued that he belonged to the '*Civil Service Exam Group*'. Among the students, two informal groups existed, namely, the '*Civil Service Exam Group*' and the '*GRE Group*'. Students who would like to find a job after graduation or to study a master degree in China believe that they belong to the '*Civil Service Exam Group*'. On the other hand, students who would like study a master degree abroad believe that they belong to the '*GRE Group*'. The emergence of the two groups is because the students who would like study a master degree abroad need to pass an IELTS, TOEFL or GRE test; which means that they need to take extra exercises than what they have learnt from the university. The two groups will be further discussed in the Discussion Chapter.

#### **4.4 Amber's Profile**

Amber was a self-perceived highly motivated student. She reported that she wanted to go to Beijing University to study a Master degree of Law after graduation. Her long-term objective was to become a senior partner in a law firm. Because she was an English Major student, she reported that she had to devote herself to reading a considerable amount of law-related books, such as the Constitution. Her reading list was very different from her other peers. As she



reported, *'I have to make great effort on balancing my study between English and Law. So I have to make best control of my time.'* She had to prepare for annual national post-graduate entrance examination. As she reported, she spent almost all her time, except for 6 hours' sleeping time per day, in the library to study and rarely participated in extracurricular activities.

#### **4.4.1 Amber's Affective Experiences**

Altogether nine emotions with different intensities were identified from Amber's responses, namely, *anxiety, apathy, confidence, contentment, disappointment, dissatisfaction, fear, humility and stress*. These emotions interacted with each other at different intensities and appeared to coalesce into 21 combinations. These combinations were categorised into seven salient affective patterns. Pattern (f) and (g) were identified relevant to her self-reported average performance. Amber reported that the normal affective patterns (f) and (g) were not as important as the facilitative or debilitating ones.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

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

*(c) Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

*(d) Lower Level Negative Affective Pattern*

*(e) Higher Level Negative Affective Pattern*

*(f) Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Medium Level Positive Affective Pattern*

#### **4.4.1.1 Perceived Facilitative Affective Experiences**

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

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Amber reported altogether three lower level positive emotions, namely *confidence*, *contentment* and *humility*; and four lower level negative emotions, namely, *anxiety*, *disappointment*, *dissatisfaction* and *fear* relevant to this pattern. These affective experiences appeared to have positively affected her vocabulary performance in week 6 and week 14, and grammar performance in week 12.

[Extract 1: Interview]

L: Regarding your grammar performance (week 12), how did you feel after you received the feedback from your teacher?

Amber: To be frank, I felt **a little bit disappointed about** my performance. I think I could do better. Although I was **not a hundred percent satisfied with** my performance this time, I should say that, I still think that I **performed very well**, comparing to other people's performance. After I received the feedback from the teacher, the score proved that I was right. If the question I could not answer, others may not be able to answer it, either. I guess sometimes that I was **a bit humble**.

From Extract 1, three emotions, namely, *disappointment*, *dissatisfaction* and *humility* were reported with lower intensity. These emotions were reported relevant to the optimal performance than her perceived English vocabulary proficiency would have suggested in week 12. These emotions could be categorised into the '*Mixed Lower Level Negative and Lower Level Positive Affective Pattern*'. One issue could be identified from her response above. The response of '*If the question I could not answer, others may not be able to answer it, either*' although will not be categorised as a humble response by the researcher; I still accept the perspective from Amber's standpoint. She further explained that '*I guess sometimes that I was a bit humble*' was kept in this study.

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

Amber reported that two higher level positive emotions, namely, *confidence* and *contentment*, together with four lower level negative emotions, namely, *fear*, *stress*, *apathy* and *anxiety* were relevant to this pattern. These affective experiences appeared to have positively affected her vocabulary performance in

week 8, reading performance in week 8, speaking performance in week 10 and listening performance in week 8.

[Extract 2: Diary]

Amber: I think my listening performance in the last exam (researcher's note: week 8) was **very good**. My effort of using BBC and VOA to practice my English listening ability was not a waste. I think the conversations from the listening section were pretty easy. I also applied an audio converter to change the normal speed video clips into 120% faster versions. Therefore, the listening section from the exam was just a piece of cake. I felt **really confident** in this section and was **so much satisfied** with my performance. I actually **did not care about** which materials were outlined by the teacher before the exam, because I knew that no matter what was tested, I could perform very well.

*(confidence –contentment –apathy)*

*(c)Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

Amber reported that two higher level positive emotions, namely, *confidence* and *contentment*, together with two lower level negative emotions, namely, *stress*, and *anxiety* were relevant to this pattern. These affective experiences appeared to have positively affected her grammar performance in week 6, and writing performance in week 14.

[Extract 3: Diary]

Amber: I think my writing performance in the last exam (researcher's note: week 14) was **the best** among three tests. The topic was familiar and I have sufficient arguments to write about. Recently, I have completed a survey investigation on the environmental issues. Although most of the issues were emphasised from a legal perspective, they still provided me more information to write on my writing exam. I felt **really stressful and anxious**, because I have TOO MUCH to write about. I guess the writing test did not give me sufficient time or space to make myself clear. Finally, I managed to write sufficiently and perfectly cope with the time and space. I was **really satisfied with** my performance.

*(stress –anxiety –contentment)*

*(d) Lower Level Negative Affective Pattern*

Amber reported two lower level positive emotions, namely *disappointment* and *apathy*. From Amber's responses, these emotions related to better performance than her perceived English proficiency would have suggested. This pattern appeared to have positively affected her writing performance in week 5.

[Extract 4: Interview]

L: Regarding your writing performance (week 5), how did you feel after you received the feedback from your teacher?

Amber: I felt **a little bit disappointed** about my performance. Because at first, I thought that the topic was naive and a little bit stupid. I did not take it seriously and am **a little bit careless** at first, I guess. But afterwards, when I started to write, I understood that, sometimes easy topics could make the teachers distinguish good writings from bad ones. So I started to change my attitude to a positive way, and I think I performed **very well**.

#### **4.4.1.2 Perceived Debilitative Affective Experiences**

One pattern of affective experiences (e, outlined below) could be elicited as more debilitative for Amber's performance. From Amber's responses, this pattern of affective experiences related to poorer performance than her perceived English proficiency would have suggested. The different combinations of these emotions appeared to have negatively affected good or average performance.

##### *(e) Higher Level Negative Affective Pattern*

Amber reported three higher level negative emotions, namely, *stress*, *anxiety* and *fear*. From Amber'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 speaking performance in week 4.

[Extract 5: Interview]

L: Regarding your speaking performance (week 4), how did you feel after you received the feedback from your teacher?

Amber: Oh, I felt **really anxious and stressful**. Though I have carefully drafted the content of my speech and practiced it in front of the mirror for several times. I just cannot stop being **anxious**. I understand that many of my classmates were excellent English speakers, and I **am really afraid of** speaking in front of so many people.

#### **4.4.2 Amber's Self-reported Performance**

##### **4.4.2.1 Identified Attractor States**

From Amber's responses regarding her self-reported performances, altogether five attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Autonomy', 'Vision' and 'Topic Familiarity'. The definitions for these attractor states were presented in Alex's profile. I will not restate the definitions of the same attractor state from Amber's profile.

**Integrative Disposition:** Personal Goals; Desired Level of L2 Competence;

From Amber's responses, she had clear career goals of pursuing a Master degree at Beijing University. Therefore, she *'searched for information on the Law courses at Beijing University'*, *'kept her own study pace and downloaded the reading list from the Law School at Beijing University'* and made great effort to *'balance the study between English and Law'*.

**External Incentive:** Teacher's Appraisal; Peers' Influence;

Amber was a self-perceived positive student and liked to ask for the teacher's and her peers' advices to improve her English ability. The teacher's appraisal strongly affected Amber's daily behaviour and study plans. For example, before she *'attended the recruitment exam of Neusoft'*, *'consulted with the teacher about reading skills'* and accepted the teacher's suggestion of using BBC to improve her English listening ability. In addition, Amber *'discussed with her friends about how to improve speaking ability'* and *'discussed with her roommates about future plan'*.

**Autonomy**

From Amber's responses, she *'kept her own study pace and downloaded the reading list from the Law School at Beijing University'* and *'kept study plans everyday to ensure the maximum use of every minute'*. These responses were categorised as 'Autonomy'.



## Vision

From Amber's responses, she reported that she '*dreamed of becoming a legal partner in the future*'. Her study plans significantly related to her dreams of her future, which were categorised as the attractor state 'Vision'.

## Topic Familiarity

From Amber's responses, she reported that '*the topic was familiar and I have sufficient arguments to write about*'. Such a response was categorised as the attractor state 'Topic Familiarity'.

### 4.4.2.2 Amber's Self-reported Performance Trajectory

- Amber's Self-reported Vocabulary Performance Trajectory

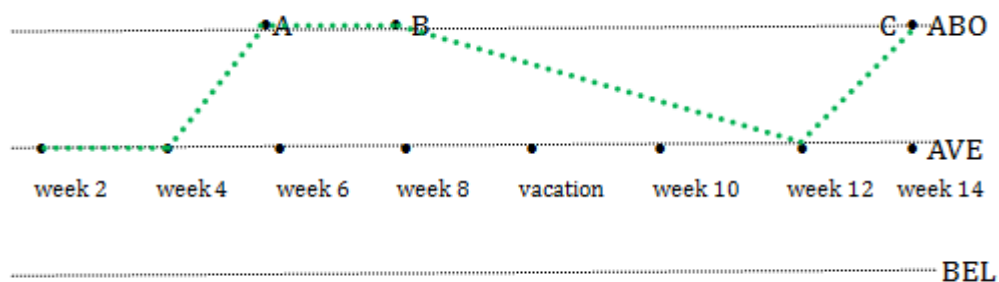


Figure 4.3.1 Amber's Self-reported Vocabulary Performance

The initial condition was '*to go to Beijing University to study a Master of Law after graduation*'. Such a response can be categorised as the attractor state 'Integrative Disposition'. Three attractor states namely, 'Autonomy', 'Integrative Disposition' and 'External Incentives' were identified to be relevant to her self-

reported vocabulary performances. To be specific, Amber argued that she believed her vocabulary performance started at the average point in week 2 and week 4. She argued that she always expected a better performance because she has already *'finished first round GRE, IELTS, TOEFL, TEM 8 vocabulary recitation during vacation'*. Point A, B and C were reported to be the optimal performances.

- Amber's Self-reported Grammar Performance Trajectory

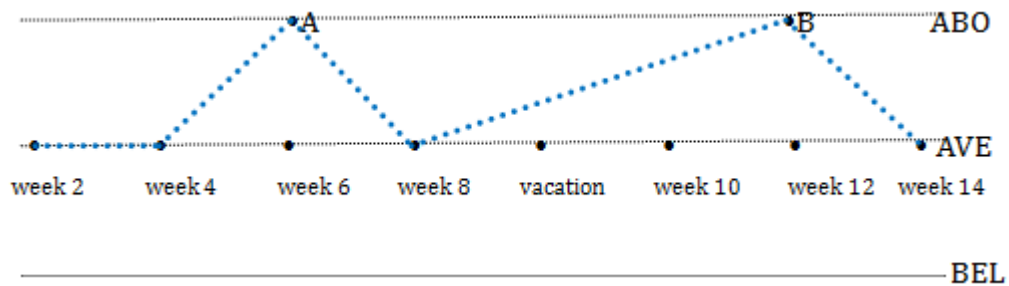


Figure 4.3.2 Amber's Self-reported Grammar Performance

'Autonomy' was identified to be the initial condition for this subsystem; as Amber reported that she decided to use *'the reference book to practice her translation skills'* at the beginning of the semester. Such a usage was self-directed. Two attractors, namely, 'Autonomy' and 'Vision' were identified. For example, as previously stated, she reported that *'I guess sometimes that I was a bit humble'* in week 12. Oxford English Dictionary (2015) defined 'humility' as 'the quality of having a lowly opinion of oneself'. However, such a lowly opinion of oneself was not identified from Amber's responses. In contrast, she reported that she was confident in herself. *'If the question I could not answer, others may not be able to answer it, either.'* In addition, at Point B, it was a self-

reported optimal performance. Her opinion of herself reached the top point; however, she still argued that this was a humble opinion. The contradiction between her response and her self-perceived affective experiences existed.

In Figure 4.3.3, the yellow dashed line referred to Amber's self-reported listening performance whereas the red one referred to her reading aspect. Two attractors 'Autonomy' and 'External Incentive (Teacher's Appraisal)' were identified to be relevant to both performances.

- Amber's Self-reported Listening and Reading Performance Trajectory

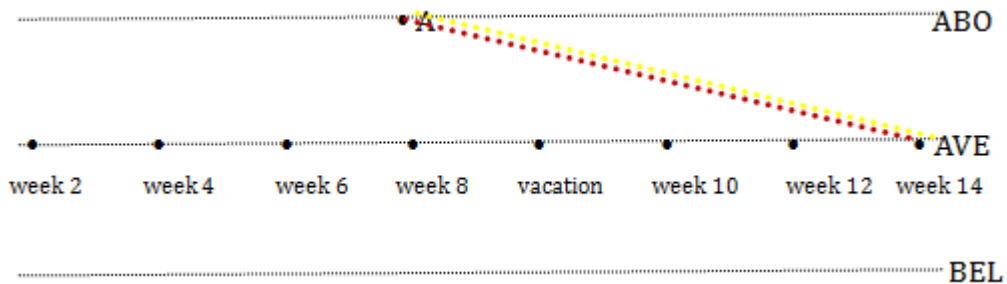


Figure 4.3.3 Amber's Self-reported Listening and Reading Performance

- Amber's Self-reported Speaking and Writing Performance Trajectory

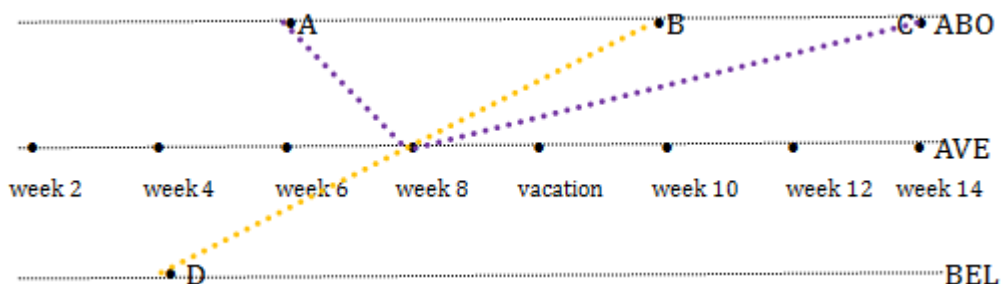


Figure 4.3.4 Amber's Self-reported Speaking and Writing Performance

In Figure 4.3.4, the orange dashed line referred to Amber's self-reported speaking performance whereas the purple one referred to her writing aspect. Amber reported that although she rarely participated in extracurricular activities, she would participate in the activities that could enhance her speaking ability. For example, she positively participated in oral competition, meetings of Model United Nations Association and events at the English corner. Her 'Vision' of becoming an English expert in the future and her peers' influence were reported important to her English speaking development. In addition, 'Topic Familiarity' was identified from her responses of the self-reported writing performances.

#### **4.4.3 Amber's Self-perceived Affective Experiences and Self-reported Performances**

Amber was reported to be an FL learner with higher perceived English competence. She argued that she belonged to the '*Civil Service Exam Group*'. She has a strong career 'Vision' of becoming a senior partner in a law firm in the future. She was motivated to learn autonomously. Such cognitive and motivational factors were reported relevant to her unique study plans.

In addition, her self-perceived emotion of humble was identified to be relevant to her self-reported optimal grammar performance in week 12. However, such a relationship was not normally identified; because 'humility' was defined as 'the quality of having a lowly opinion of oneself' in the Oxford English Dictionary 2015. She reported a high opinion of herself, but in the meantime, still believed that she was a humble person. Her self-perceived affective experiences and self-

reported performances interacted with each other at the same time via the mediations of 'Autonomy'.

Such an interaction can also be observed from her other responses. As previously illustrated, she commented, *'I felt a little bit disappointed about my performance... I did not take it seriously and am a little bit careless ... I think I performed very well'* in week 5 on her writing performance. She felt disappointed about her performance, but in the meantime, still believed that it was an excellent performance. In a usual way, a disappointing performance was not normally categorised as very good. Just as a humble person will not usually have a high opinion of himself/herself. In the interview, the question was raised by the researcher, 'Can you define the emotion of humility for me?' My question aimed to observe if she perceived humility in an abnormal way. She reported, *'My objective exam scores were very high, comparing to my peers. Due to my effort, I was expecting an extraordinary performance, "performed very well" was not enough, but I never show off.'* In her vision, 'never show off' referred to humility and she expected to perform better than the best.

#### **4.5 Bruce's Profile**

Bruce's scores ranked the top of the class in the national undergraduate university entrance exam. Therefore, his student number is number one. The student number was allocated in accordance with the students' scores (the best one come first). He reported that he was proud of his student number and always liked to talk about his glorious history. However, after one year's university study, he reported, *'since I became a university student, I started to understand*

*that scores from the written exams were not everything.* 'Family background was very important.' 'Excellent English speaking ability could make you really cool and attractive to girls'. Strong self-discrepancy was reported from his responses. He reported that he should belong to the civil service exam group, but he wanted to find a job after graduation as well.

#### **4.5.1 Bruce's Affective Experiences**

Eight emotions with different intensities were identified from Bruce's responses. They were *anxiety, boredom, confidence, disappointment, expectation, pride, resignation* and *stress*. These affects interacted with each other at different intensities and appeared to coalesce into 21 combinations. These combinations were categorised into nine salient affective patterns. Pattern (*e*) to (*i*) were identified relevant to his self-reported average performance. Bruce reported that the normal affective patterns (*e*) to (*i*) were not as important as the facilitative or debilitating ones.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

*(b) Lower Level Negative Affective Pattern*

*(c) Higher Level Positive Affective Pattern*

*(d) Mixed Lower Level Negative and Higher Level Negative Affective Pattern*

*(e) Medium Level Positive Affective Pattern*

*(f) Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Mixed Higher Level Negative and Lower Level Positive Affective Pattern*

*(h) Mixed Lower Level Negative and Higher Level Positive Affective Pattern*

*(i) Higher Level Negative Affective Pattern*

#### **4.5.1.1 Perceived Facilitative Affective Experiences**

Three patterns of affective experiences (a, b & c, outlined below) were identified as more facilitative for Bruce's performance. From his responses, these patterns of affective experiences related to better performance than his perceived English proficiency would have suggested. The different combinations of these emotions appeared to have positively affected his performance as he perceived it.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Bruce reported two lower level positive emotions, namely, *confidence* and *expectation*, together with three lower level negative emotions, namely, *stress*, *anxiety*, and *dissatisfaction*. The affective experiences appeared to have positively affected his vocabulary performance in week 14, grammar performance in week 6 and week 14, reading performance in week 14 and speaking performance in week 4.

[Extract 1: Interview]

L: Can you give some comment on your speaking performance (week 4), and how did you feel after you received the feedback from your teacher?

Bruce: I felt that I have given **a fantastic speech!** Although during the speaking contest, I felt **a little anxious** from the beginning to the end, I believed that such a feeling was not bad because it made my head run fast and concentrate on the topic. Especially when I finished my speech, I was **a little bit expected** to have the Q & A section, and would like to know my score from the judges. The comments from the judge were really useful.

*(anxiety –expectation)*

*(b) Lower Level Negative Affective Pattern*

Bruce reported that two lower level negative emotions, namely, *disappointment* and *boredom* appeared to have positively affected his writing performance in week 5.

[Extract 2: Diary]

Bruce: I think my writing performance in last exam (researcher's note: week 5) was **very good**. Although I was **a little bit disappointed** of the topic itself, it was too simple; I think that my writings were very good.



Actually, during the contest, I felt **a little bit bored** because after I finished writing, there were still 15 minutes left.

*(c) Higher Level Positive Affective Pattern*

Bruce reported three higher level positive emotions, namely, *confidence*, *expectation* and *pride* appeared to have positively affected his vocabulary performance in week 2, and his listening performance in week 8.

[Extract 3: Qualitative Survey]

Question: What is your perception of your vocabulary proficiency in week 2?

How did you feel after you received the feedback from your teacher?

Bruce: Regarding the vocabulary section, I believed that I have performed **very well**. I was **confident** in reciting vocabularies. Because my student number is number one and I am **very proud** of it (researcher's note: Bruce ranked the top in class according to his national undergraduate university entrance exam), I knew that if the teacher wanted someone to recite vocabularies in class, she would start from the top of the name list. Sometimes, I **really expected to** be called, because I have prepared sufficiently.

#### 4.5.1.2 Perceived Debilitative Affective Experiences

One pattern (d, outlined below) could be elicited as more debilitating for Bruce's performance. From his responses, this affective pattern related to poorer performance than his perceived English proficiency would have suggested. The different combinations of these emotions appeared to have negatively affected good or average performance.

##### *(d) Mixed Lower Level Negative and Higher Level Negative Affective Pattern*

Bruce reported two higher level negative emotions, namely, *stress* and *disappointment*, together with one lower level negative emotion, namely *resignation*. These affective experiences appeared to have negatively affected good or average vocabulary performance in week 6.

[Extract 4: Interview]

L: Regarding your vocabulary performance (week 6), how did you feel after you received the feedback from your teacher?

Bruce: Oh, I performed **badly** and I felt **really disappointed and stressful**.

Before the exam, I have prepared for it carefully. However, almost all of the words I have prepared were not tested! I believed that the examiner had not conducted the exam according to the syllabus. I **felt a little bit helpless** because I felt that there was nothing I could do.

## 4.5.2 Bruce's Self-reported Performance

### 4.5.2.1 Identified Attractor States

From Bruce's responses regarding his self-reported performance, altogether six attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentives' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Autonomy'; 'Vision'; 'Topic Familiarity' and 'Self-discrepancy' which contained two components of 'The Actual Self' and 'The Ideal Self'. The definitions of the first five attractor states were presented in Alex's profile. In Bruce's profile, I will describe his self – discrepancies.

**Self- discrepancy:** The Actual self; The Ideal self

Higgins' (1987) Self-discrepancy Theory was illustrated in Chapter 2, Section 2.5.2.1. The self-discrepancy theory consisted of three basic domains of the self: the actual self, the ideal self, and the ought self. From Bruce's responses, he expected '*to attend each lesson because the instruction methods were similar as those in high schools*'. The discrepancy between the actual self and the ideal self existed as Bruce perceived. He wished to perform the best each time; however, he believed that actually his academic performance could only be categorised as good ones, not the top ones.

#### 4.5.2.2 Bruce's Self-reported Performance Trajectory

- Bruce's Self-reported Vocabulary Performance Trajectory

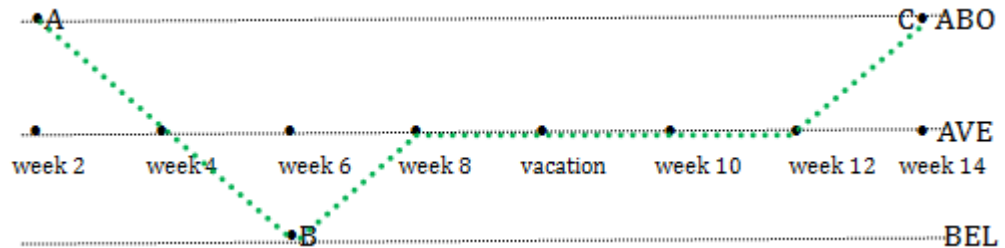


Figure 4.4.1 Bruce's Self-reported Vocabulary Performance

Figure 4.4.1 described how Bruce's self-reported vocabulary performance changed over time. The initial condition was identified as 'to find a job after graduation', which can be categorised as 'Personal Goals' from the attractor state 'Integrative Disposition'. Three attractor states, namely, 'Autonomy', 'Integrative Disposition' and 'Self-discrepancy' were identified. He particularly mentioned that he 'did not receive the score as expected' and lost 'the feeling of priority', although he still kept studying autonomously. The attractors of 'Self-discrepancy' and 'Autonomy' together with the debilitating affective experience of 'Mixed Lower Level Negative and Higher Level Negative Affective Pattern' (disappointment–stress–resignation) correlated with his self-reported worst performance in week 6 at Point B. Afterwards, his self-reported performance went upward to the average state in week 8 and week 12. At Point C, his self-reported performance reached the optimal state again. The attractors of 'Self-discrepancy' and 'Autonomy' moved onwards; but interacting with the facilitative affective experience of 'Mixed Lower Level Negative and Lower Level Positive Affective Pattern' (anxiety–stress–expectation) in week 14.

- Bruce's Self-reported Grammar Performance Trajectory

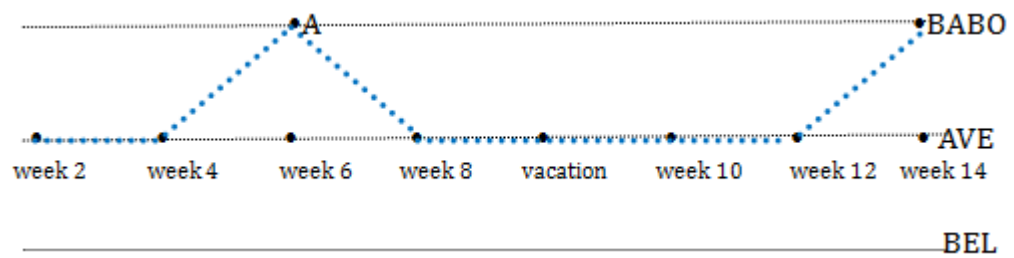


Figure 4.4.2 Bruce's Self-reported Grammar Performance

The initial condition was *'the expectation to attend each lesson; because the instruction methods were similar as those in high schools'*. Two attractor states 'Self-discrepancy' and 'Autonomy' were identified as the **Periodic Attractor States** relating to his grammar performances over six-month. A periodic attractor state was 'also known as a limit cycle attractor state' that 'represents two or more values that the system cycles back and forth between in a periodic loop. Patterns emerge when events or behaviours repeat themselves at regular intervals.' (Hiver, 2014, p. 26) In the SL/ FL area, Hiver provided an example to explain the periodic attractor states.

'Examples of periodic attractor states can be seen when the students in our high school class begin a school year with a high level of enthusiasm and expectancy of success, but as the semester progresses the class loses its edge as the familiar routine turns to a monotonous grind and, towards the final weeks of the semester, the students contract the so-called 'senioritis' virus, are repeatedly absent and have a generally dismissive and apathetic attitude – a pattern that seems to repeat itself year in and year out' (Hiver, 2014, p. 26).

The same pattern was identified from Bruce’s response of his grammar performance. At the beginning of each semester, he kept self-directed learning in grammar for about one month and felt that there was a distance between the actual self and the ideal self all the time. Afterwards, his self-reported performance suddenly reached to the optimal point (Point A & B) and the attractor state ‘Self-discrepancy’ disappeared for about two weeks. As his self-reported performance went downward to the average point, ‘Self-discrepancy’ appeared again.

- Bruce's Self-reported Listening and Reading Performance Trajectory

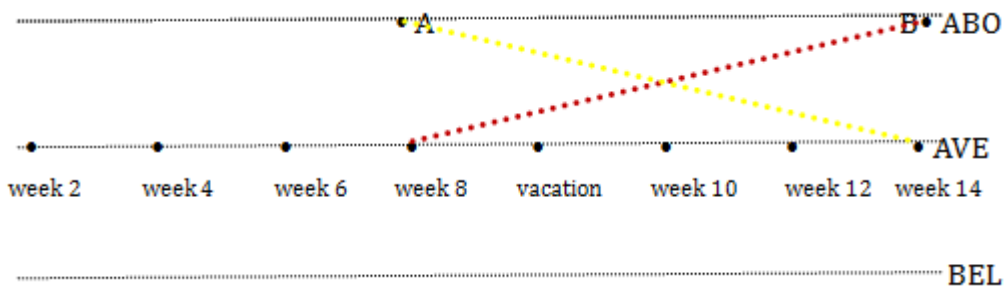


Figure 4.4.3 Bruce’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Bruce’s self-reported listening performance whereas the red one referred to his reading aspect.

- Bruce's Self-reported Speaking and Writing Performance Trajectory

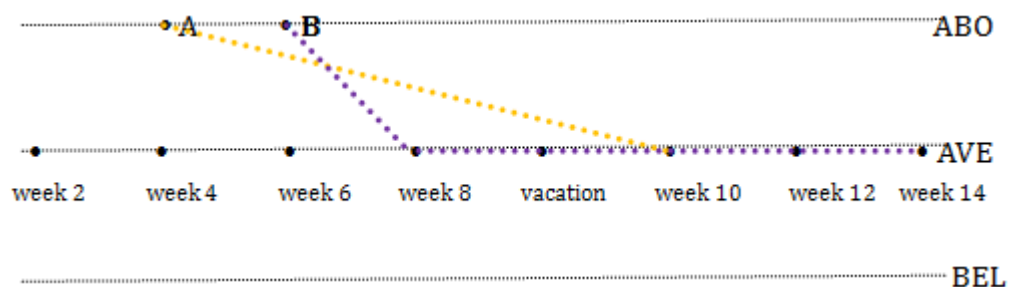


Figure 4.4.4 Bruce's Self-reported Speaking and Writing Performance

The orange dashed line referred to Bruce's self-reported speaking performance whereas the purple one referred to his writing aspect. Bruce reported '*other people's performance or judgment are not relevant*' with respect to his writing performance in week 5. Such a response was very similar to the category of 'Amotivation' (will be discussed as an attractor state in Eric's Profile).

'Amotivation' referred to 'the state of lacking an intention to act' (Deci & Ryan, 2000, p. 61). However, Bruce continued to report that '*although I was a little bit disappointed of the topic itself, it was too simple...my performance largely depended on how much I know about the topic from my previous knowledge...I feel being encouraged to write more if I am familiar with the topic*'. Such responses reflected that the student was not lacking an intention to act. Therefore, such a state was categorised into 'Topic Familiarity'.

### 4.5.3 Bruce's Self-perceived Affective Experiences and Self-reported Performances

Bruce believed that he belonged to the '*Civil Service Exam Group*'. He was reported to be an FL learner with higher perceived English competence. However,

his perceived English competence was not stable. Bruce's perceived English competence shifted from being perceived '*very confident English learner with excellent English competence*' in vocabulary and grammar aspect (week 1), to '*being self-doubted*' and perceived '*normal level of English competence*' (week 6), to '*regaining confidence again*' after he finished reciting the book *Successful You Vocabulary 12000* (week 12). In addition, although two periodic attractor states 'Self-discrepancy' and 'Autonomy' were identified moving back and forth and significantly related his self-reported performances; his self-perceived affective experiences did not show a periodic pattern.

#### **4.6 Cindy's Profile**

Cindy was a self-perceived shy person. She reported that, '*I cannot look someone in the eye, especially when I talked to my teachers. Even sometimes, I was pretty much sure of the answer to the questions that were raised by the teacher, I felt too anxious to answer it or even to raise up my hands.*' Except for her shyness, she reported that she could organise her time effectively. She wanted to go to Beijing University of Foreign Languages to study a Master degree in translation and interpreting. In the meantime, she argued that she also prepared for the entrance exam of The Ministry of Foreign Affairs of the Republic of China. Therefore, she studied really hard, as she reported, and spent most of her time in the library every day.



#### **4.6.1 Cindy's Affective Experiences**

Nine emotions were identified from Cindy's responses, namely, *anxiety, apathy, confidence, contentment, disappointment, dissatisfaction, expectation, relaxation and stress*. These emotions interacted with each other at different intensities and appeared to coalesce into 21 combinations. These combinations were categorised into seven salient affective patterns. Pattern (f) and (g) were identified relevant to her self-reported average performance. Cindy reported that the normal affective pattern (f) and (g) were not as important as the facilitative or debilitating ones.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

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

*(c) Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

*(d) Lower Level Negative Affective Pattern*

*(e) Higher Level Negative Affective Pattern*

*(f) Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Medium Level Positive Affective Pattern*

#### 4.6.1.1 Perceived Facilitative Affective Experiences

Four patterns (a, b, c & d, outlined below) were identified as more facilitative for Cindy's performance. From her responses, these patterns of affective experiences related to better performance than her perceived English proficiency would have suggested. The different combinations of these emotions appeared to have positively affected her performance as she perceived it.

##### *(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Cindy reported two lower level positive emotions, namely *confidence* and *relaxation* together with three lower level negative emotions, namely, *anxiety*, *disappointment* and *dissatisfaction*. The different combinations of these emotions appeared to have positively affected her vocabulary performance in week 6 and week 14, and grammar performance in week 12.

[Extract 1: Interview]

L: Regarding your vocabulary performance (week 6), how did you feel after you received the feedback from your teacher?

Cindy: Very good, I think! I felt **a little bit relaxed and anxious** at the same time. I felt relaxed because the feedback met my expectation, and I felt a bit anxious because I was aware that the end of the current exam would lead to the beginning of the next one. I would have a lot of work to do afterwards.

(relaxation –anxiety)

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

Cindy reported two higher level positive emotions, namely, *confidence* and *contentment*, and three lower level negative emotions, namely, *stress*, *apathy* and *anxiety*. The different combinations of these emotions appeared to have positively affected her vocabulary performance in week 8, reading performance in week 8, and listening performance in week 8.

[Extract 2: Diary]

Cindy: I think my listening performance (researcher's note: week 8) was **very good**. I think that the listening passages were easy as I had already read the relevant materials before the exam. The content was not new to me. Therefore, I could foresee what will be told next. I was **really satisfied with** my performance and I had **full confidence** in me. Although during the exam, I guess that there was **a light feeling of apathy**; because the passages were so easy for me.

(contentment –confidence –apathy)

*(c) Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

Cindy reported two higher level positive emotions, namely, *expectation* and *relaxation*, together with two lower level negative emotions, namely, *stress* and

*anxiety*. The different combinations of these emotions appeared to have positively affected her grammar performance in week 6, and writing performance in week 14.

[Extract 3: Interview]

L: How did you feel after you received the feedback from your teacher?

(writing performance, week 14)

Cindy: Well, the topic was about the environmental issues. At first, I thought the topic was too abstract and felt **really anxious**, because I did not know what to put on. And besides, during the exam, I could hear people around me being busy writing. The scratching sound of pens made me feel **really stressful**. However, I made myself calm down and then tried to recall the arguments I had read previously. Luckily, I finally recalled sufficient arguments to illustrate my opinion. I am **really satisfied with** my performance, it was very good.

(*anxiety –stress –contentment*)

(d) *Lower Level Negative Affective Pattern*

Cindy reported two lower level positive emotions, namely *disappointment* and *apathy*. This pattern appeared to have positively affected her writing performance in week 5.

[Extract 4: Interview]

L: Regarding your writing performance (week 5), how did you feel after you received the feedback from your teacher?

Cindy: I felt **a little bit disappointed** of the feedback. Although it was a high mark, just as I expected, some of the comments still were not convincing. Well, the score was fine, so I did **not that much care** about the marks as it would not be presented on our transcripts. It was a **very good** performance.

#### **4.6.1.2 Perceived Debilitative Affective Experiences**

One pattern (e, outlined below) could be elicited as more debilitative for Cindy's performance.

##### *(e) Higher Level Negative Affective Pattern*

Cindy reported three higher level negative emotions, namely, *stress*, *anxiety* and *dissatisfaction*. The different combinations of these emotions appeared to have negatively affected good or average speaking performance in week 4 and week 10.

[Extract 5: Interview]

L: Regarding your speaking performance (week 4), how did you feel after you received the feedback from your teacher?

Cindy: As **bad** as I thought. I felt **really anxious** throughout the whole period of the oral competition. The teacher's feedback was fair. I felt **really stressful** to attend such things.

*(anxiety –stress)*

#### **4.6.2 Cindy's Self-reported Performance**

##### **4.6.2.1 Identified Attractor States**

From Cindy's responses altogether four attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Autonomy' and 'Topic Familiarity'. The definitions of these attractor states were presented in Alex's profile.

#### 4.6.2.2 Cindy's Self-reported Performance Trajectory

- Cindy's Self-reported Vocabulary Performance Trajectory

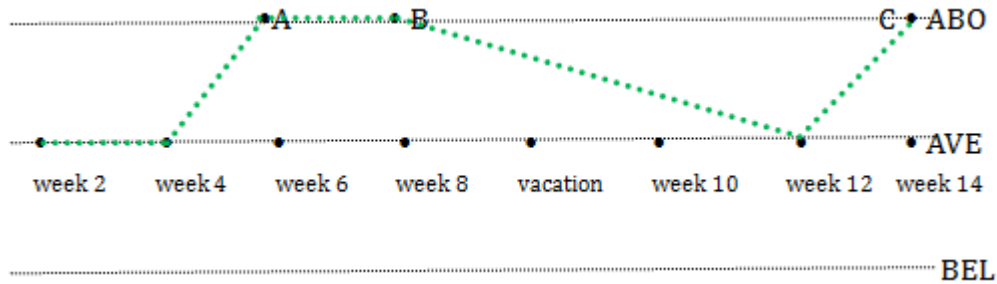


Figure 4.5.1 Cindy's Self-reported Vocabulary Performance

Her initial condition was 'to go to Beijing University of Foreign Languages to study a Master degree in translation and interpreting'. Such a response could be categorised as 'Personal Goals' from the attractor state 'Integrative Disposition'. Throughout the time window for this subsystem, three attractors, namely, 'Autonomy', 'Integrative Disposition' and 'External Incentives' were identified.

- Cindy's Self-reported Grammar Performance Trajectory

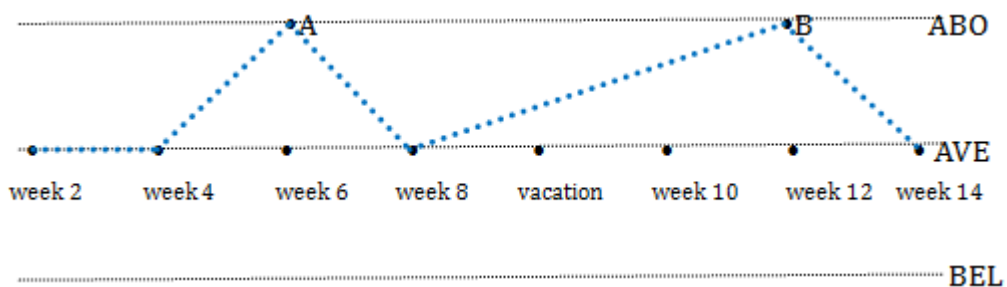


Figure 4.5.2 Cindy's Self-reported Grammar Performance

The initial condition was the self-directed usage of 'reference book to practice translation', which could be categorised as 'Autonomy'. Throughout the time

window for this subsystem, two attractors, namely, ‘Autonomy’ and ‘External Incentives (Peers’ Influence)’ were identified.

- Cindy's Self-reported Listening and Reading Performance Trajectory

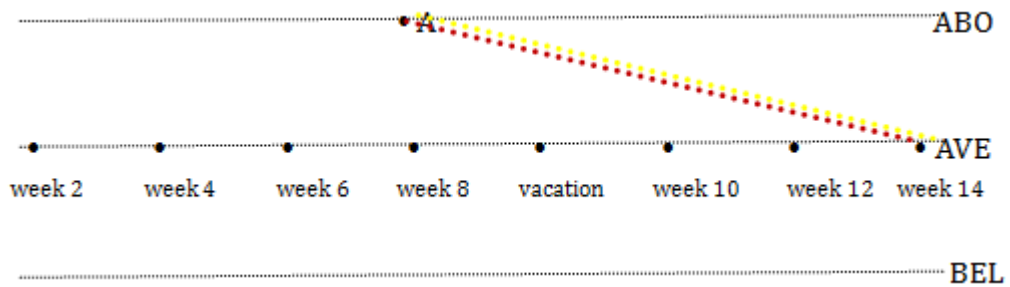


Figure 4.5.3 Cindy's Self-reported Listening and Reading Performance

She reported that she ‘*listened to BBC one hour daily*’, and ‘*used Economist*’ to practice her English listening and reading ability, respectively. In addition, she regularly talked with her teachers and peers for advices to improve her English. Two attractor states, namely, ‘Autonomy’ and ‘External Incentive (Teacher’s Appraisal; Peers’ Influence)’ were identified.

- Cindy's Self-reported Speaking and Writing Performance Trajectory

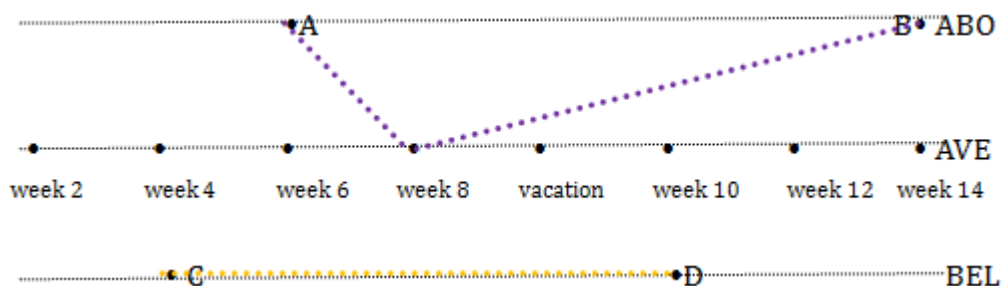


Figure 4.5.4 Cindy's Self-reported Speaking and Writing Performance



Two crucial points, C and D were reported relevant to her speaking performance. At point C and D, she believed that although *'the teacher's feedback was fair'*, she *'felt really stressful to attend such things'*. She believed that she paid too much attention on other people's judgements and did not want to be aggressive or impolite. Regarding Cindy's self-reported writing performance, 'Topic Familiarity' was identified from her responses.

#### **4.6.3 Cindy's Self-perceived Affective Experiences and Self-reported Performances**

Cindy was reported to be an FL learner with higher perceived English competence. She believed that she belonged to the *'Civil Service Exam Group'*. She reported that she was a very shy person. 'Shy' was defined as being 'nervous or timid in the company of other people' in the Oxford English Dictionary 2015. However, the feeling of 'being nervous' or 'being timid' was not identified from her responses. Furthermore, her self-perceived affective experiences, perceived English competence and motivation to develop her English skills coalesced into combinations. These combinations became stable and relevant to different system outcomes, i.e. the attractor states.

If considering the cognitive, motivational and emotional factors as forces within an attractor basin, these forces acted through self-organising and finally became stable. One or more attractor state(s) were identified relevant to different self-reported performances. These forces did not directly interact with Cindy's self-reported performances. For example, her higher perceived English competence which can be categorised as a cognitive factor and one force within the attractor

basin, did not directly interact with her self-reported writing or other performances. In contrast, this factor acted as an indispensable force to balance the attractor state. Different attractor states related to different subsystems. All six subsystems contributed to the whole dynamic system of EFL learning through the time window.

#### **4.7 Eric's Profile**

Eric was a local Dalian student and lived with his family. Every weekend during the term time, unlike other students who were not from Dalian, he travelled back to his parents' house to enjoy the weekends instead of living in his on-campus accommodation with other students. He positively participated in the activities and held many leading positions, such, the Student Union (SU) Officer, the lead vocalist in the English departmental band and the director of English debating group. Eric reported one severe incident which happened during the summer vacation. His parents were divorced and their house was sold afterwards, which resulted in disruption in Eric's routine life. He reported in his interview, *'I cannot hide the truth from my classmates. My parents were divorced, although I do not want my classmates to know. They will soon find it abnormal if I do not go back home at weekends.'*

##### **4.7.1 Eric's Affective Experiences**

Eight emotions were identified from Eric's responses, namely, *anxiety, apathy, boredom, confidence, enjoyment, expectation, relaxation and resignation*. These affects interacted with each other at different intensities and appeared to coalesce

into 21 combinations. These combinations were categorised into seven salient affective patterns. Pattern (f) and (g) were identified relevant to his self-reported average performance. Eric reported that the normal affective pattern (f) and (g) were not as important as the facilitative or debilitating ones.

*(a) Higher Level Positive Affective Pattern*

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

*(c) Lower Level Negative Affective Pattern*

*(d) Higher Level Negative Affective Pattern*

*(e) Mixed Higher Level Negative and Lower Level Positive Affective Pattern*

*(f) Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Medium Level Negative Affective Pattern*

#### **4.7.1.1 Perceived Facilitative Affective Experiences**

Three patterns (a, b & c, outlined below) could be identified as more facilitative for Eric's performance. From his responses, these patterns of affective experiences related to better performance than his perceived English proficiency would have suggested. The different combinations of these emotions appeared to have positively affected his performance as he perceived it.

*(a) Higher Level Positive Affective Pattern*

Eric reported four higher level positive emotions, namely, *expectation*, *relaxation*, *confidence* and *enjoyment*. The different combinations of these emotions appeared to have positively affected his vocabulary performance in week 4 and week 6.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

Eric: Wonderful! Especially my vocabulary performance (Researcher's note: week 4), it seems that the goddess of vocabulary is with me and I am able to answer all questions during the exam.

L: What kind of emotions do you have during the test?

Eric: Actually I have prepared well before the exam. During the exam, I felt **very relaxed** and after having a scan of the questions, I felt **extremely confident**, because I knew all the answers to the questions.

*(relaxation –confidence)*

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

Eric reported four higher level positive emotions, namely, *enjoyment*, *relaxation*, *confidence* and *contentment*, together with four lower level negative emotions, namely, *anxiety*, *boredom*, *apathy* and *resignation*. The different combinations of these emotions appeared to have positively affected his grammar performances in week 2 and week 6, and his listening performance in week 8.

[Extract 2: Diary]

Eric: When I was doing the preview of the article (Researcher's note: Central Park Article, week 2, grammar), I found that the story was amazing and I would like to recite it. The character's experience was so exciting and I wish I were him... though it was **a little bit boring** to study the grammar from the article... During the exam, I was **full of expectation**...and I felt **a little bit anxious**, but **quite confident**.

*(boredom –anxiety –expectation –confidence)*

[Extract 3: Interview]

L: How did you feel after you received the feedback from your teacher?

(listening performance, week 8)

Eric: The questions were easy, I think. I felt **very confident** from the beginning to the end of the exam and was **very satisfied with** my performance. You have heard from the teacher; I have got all questions right in the listening section! The questions were **a bit boring** and make

me feel **a bit**...well, I **cannot help** with those vague and meaningless questions.

*(boredom –resignation –confidence –contentment)*

*(c) Lower Level Negative Affective Pattern*

Eric reported four lower level negative emotions, namely, *apathy, anxiety, boredom* and *resignation*. The different combinations of these emotions appeared to have positively affected his grammar performances in week 12, and writing performance in week 8.

[Extract 4: Interview]

L: How did you feel after you received the feedback from your teacher?  
(writing performance, week 8)

Eric: You are from Dalian, too. You know the history of Xinghai Park as well! I started from how this refuse dump turned out to be one of the best parks in China. My writing was really cheerful, however; I felt **a bit bored** of such topics. I sometimes felt **a bit apathetic** about these meaningless topics. But this issue did not bother me. Actually I was not good at writing and felt **a bit anxious** before the exam, but thank to this topic, I think I **did much better** than I thought! It was a **very good** performance.

*(boredom –apathy –anxiety)*

#### **4.7.1.2 Perceived Debilitative Affective Experiences**

Two patterns (d & e, outlined below) were elicited as more debilitating for Eric's performance. From his responses, this affective pattern related to poorer performance than his perceived English proficiency would have suggested. The affective experiences appeared to have negatively affected good or average performance.

##### *(d) Higher Level Negative Affective Pattern*

Eric reported four higher level negative emotions, namely, *anxiety*, *apathy*, *boredom* and *resignation*. The different combinations of these emotions appeared to have negatively affected good or average speaking performance in week 10, vocabulary performance in week 12, and reading performance in week 14.

[Extract 5: Interview]

L: How did you feel after you received the feedback from your teacher?

(speaking performance, week 10)

Eric: Oh thank god it finally finished! My performance **was not good at all**. The result of this competition was not going to be presented on our transcripts, so I did not understand why I have to waste my time on it? I **really did not care** about it! It was **really boring** and time consuming.

(*apathy –boredom*)

(*e*) *Mixed Higher Level Negative and Lower Level Positive Affective Pattern*

Eric reported one higher level negative emotions, namely, *anxiety* and four lower level positive emotions, namely, *confidence* and *relaxation*. The different combinations of these emotions appeared to have negatively affected good or average writing performance in week 6.

[Extract 6: Interview]

L: Have you prepared for the writing contest in week 6? Have you written any templates? How did feel after you received the feedback from the teacher?

Eric: Yes, I did prepare templates for this contest, so I felt **to some extent**, I did not know, **confident and relaxed** during the contest. But then, I found out that I too much rely on the template and it seemed that I digressed. I felt **really anxious** and cannot blame myself more ... I did not finish the section, the marks were not too bad, but I think that it was **the worst** performance I have ever had.

## **4.7.2 Eric's Self-reported Performance**

### **4.7.2.1 Identified Attractor States**



Six attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained three components of 'Teacher's Appraisal', 'Family Issues' and 'Peers' Influence'; 'Autonomy', 'Topic Familiarity', 'Self-discrepancy' which contained two components of 'The Actual Self' and 'The Ideal Self'; and 'Amotivation' which contained two component of 'Nonintentionality' and 'Nonrelevance'. The first four attractor states were defined in Alex's profile and the fifth one was defined in Bruce's profile.

**Amotivation:** Nonintentionality; Nonrelevance;

Deci and Ryan (2000) argued that 'Amotivation' referred to 'the state of lacking an intention to act' (p. 61) and may associate with the learners' perceived non-contingency, their lower perceived competence, non-relevance and non-intentionality. From week 12 after the summer vacation, Eric expressed himself as *'being not care about what happened around him'* and *'kept silent'* from time to time. The only extracurricular activity he still participated in was the SU meeting. His *'motivation to learn'*, *'motivation to participate social activities'* and *'communication with his peers'* sharply decreased after summer vacation. He was not motivated to recite vocabulary. Even when his peers asked him to join their group to recite together, he showed no interest.

#### 4.7.2.2 Eric's Self-reported Performance Trajectory

- Eric's Self-reported Vocabulary Performance Trajectory

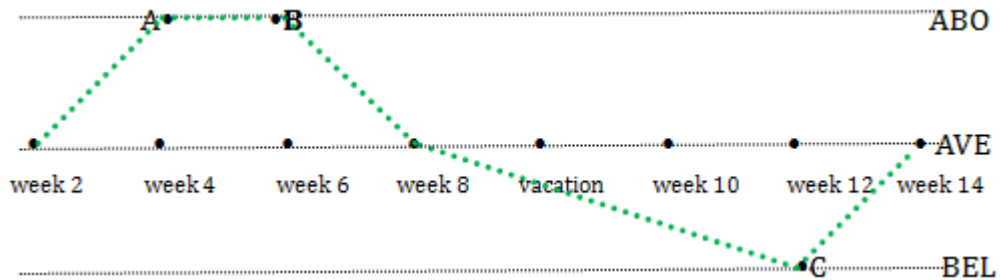


Figure 4.6.1 Eric's Self-reported Vocabulary Performance

From Eric's responses, the initial condition was identified as being '*busy with socialising*' and '*having no enough time to recite vocabulary*', which can be categorised as the system component 'Personal Goals' from the attractor state 'Integrative Disposition'. Before the vacation, 'Integrative Disposition' was identified as the attractor state. After the vacation, 'Amotivation' was identified as the attractor state. He simply '*sat down in the classroom for lectures*' and was in a state of lacking an intention to learn.

- Eric's Self-reported Grammar Performance Trajectory

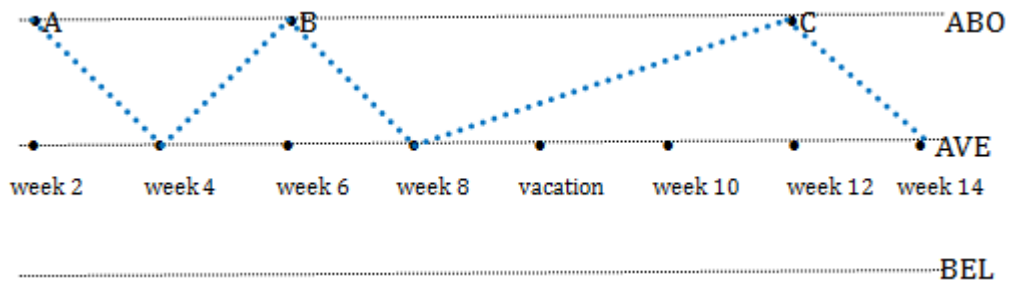


Figure 4.6.2 Eric's Self-reported Grammar Performance

Two attractor states ‘External Incentives’ and ‘Autonomy’ were identified together interacting with his self-reported grammar performance. Eric’s motivation to learn decreased dramatically after the vacation. However, such a motivational factor was not reported to affect his self-directed learning. Eric reported that his autonomous learning in grammar continued throughout the research period. His self-reported grammar performances stayed in the average and above average zone. ‘Autonomy’ was not identified in a causes-and-effect relationship with his motivations or self-reported performances.

- Eric's Self-reported Listening and Reading Performance Trajectory

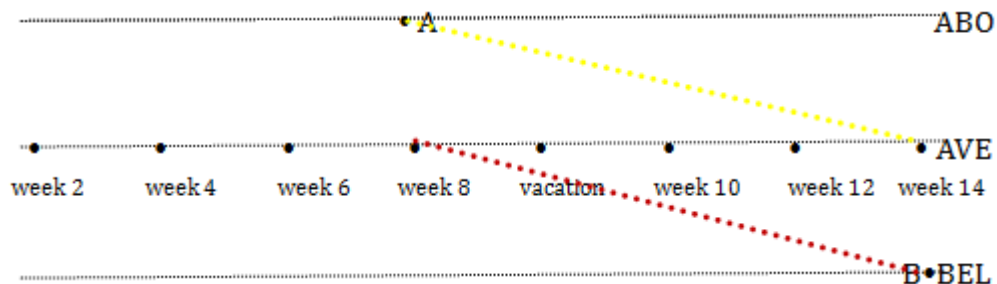


Figure 4.6.3 Eric’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Eric’s self-reported listening performance whereas the red one referred to his reading aspect.

- Eric's Self-reported Speaking and Writing Performance Trajectory

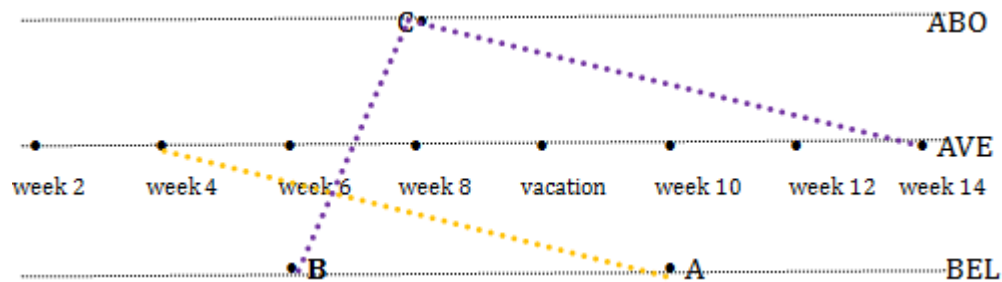


Figure 4.6.4 Eric's Self-reported Speaking and Writing Performance

The orange dashed line referred to Eric's self-reported speaking performance whereas the purple one referred to his writing aspect. Regarding Eric's self-reported speaking performance, his explanation with respect to the speaking subsystem related to Higgins' (1987) *actual: ideal discrepancy*. Eric reported that *'my English speaking was normal'* and wished *'to perform like Henry (his classmate who speaks English very fluently)'*. Eric's current English performance did not match his ideal standard.

He reported the *apathy –boredom* pattern at medium intensity in week 4 and at high intensity in week 10. In addition, as can be seen from the figure, his self-reported speaking performance was average in week 4 and worst in week 10. One salient outcome was identified that as his self-discrepancy between the actual self and the ideal self enlarged, the intensity of his negative emotions enhanced, his self-reported performance decreased and the role of Ought-to L2 Self in his English learning process decreased.

Regarding Eric's self-reported writing performance, he reported that he did not take exercises to develop his English writing ability. His writing performance largely depended on his own familiarisation and understanding of the tested topics, which were presented in each exam.

#### **4.7.3 Eric's Self-perceived Affective Experiences and Self-reported Performances**

Eric was reported to be an FL learner with lower perceived English competence. He believed that he belonged to the '*Civil Service Exam Group*'. '*Family Issues*' which can be categorised as the attractor state 'External Incentive' was identified from his responses. His reported two different types of affective profiles before and after the vacation. Before the vacation, his affective profile was governed by positive emotions, such as *confidence*, *relaxation*, *expectation* or *enjoyment*; whereas after the vacation, his affective profile was governed by negative emotions, such as *apathy*, *boredom* or *resignation*. Most of his performances after the vacation were reported to be worse than those before the vacation, except for his grammar performance.

#### **4.8 Fiona's Profile**

Fiona was a self-perceived highly motivated student with great confidence and self-esteem. In addition, she was a self-perceived autonomous student who has been conducting study plans to best organise her time to develop her English skills. Her English oral proficiency ranked the top 3 in her grade, according to the result of the English Oral Competition. She positively participated in

activities and held many leading positions, such as the leading actress in 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 reported that she wanted to study a Master degree of Interpreting and Translating in the University of Bath after her graduation. Therefore, everything she did, as she argued, was for this clear goal.

#### **4.8.1 Fiona's Affective Experiences**

Ten emotions were identified from Fiona's responses. They were *admiration, anxiety, confidence, contentment, enjoyment, expectation, interest, jealousy, relaxation* and *stress*. The different combinations of these emotions were categorised into six salient affective patterns. Pattern (*d*), (*e*) and (*f*) were identified relevant to her self-reported average performance. Unlike the previous five profiles, Fiona provided more information on her average performances than others. She also believed that the normal affective patterns were important to her English development.

(*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*

*(e) Medium Level Positive Affective Pattern*

*(f) Lower Level Negative Affective Pattern*

#### **4.8.1.1 Perceived Facilitative Affective Experiences**

Three patterns (a, b & d, outlined below) could be identified as more facilitative for Fiona's performance.

*(a) Higher Level Positive Affective Pattern*

Fiona reported seven emotions, namely, *expectation, relaxation, confidence, interest, contentment, admiration* and *enjoyment*. The different combinations of these emotions were identified relevant to her self-reported good vocabulary performance in week 4, 8 and 14, grammar performance in week 2, listening performance in week 14 and speaking performance in week 10.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(vocabulary performance, week 4)

Fiona: I think I have always been in good conditions for exams.

Vocabulary sections could never be difficult to me. You know, during our winter vacation, I have finished the first round recitation of GRE vocabulary book. I was **quite confident in** my vocabulary

performance. I actually **really enjoy** the process of taking exams and I am **really satisfied with** the result that I have obtained from the teacher. I have performed **very well**.

*(confidence –enjoyment –contentment )*

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

Fiona reported two higher level positive emotions, namely, *expectation* and *confidence*, together with three lower level negative emotions, namely, *anxiety*, *jealousy* and *stress*. The different combinations of these emotions were identified relevant to her self-reported good grammar and writing performance in week 14.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(grammar performance, week 14)

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

*(stress –anxiety –expectation)*



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

Fiona reported that two lower level positive emotions, namely, *expectation* and *relaxation*, together with one lower level negative emotion, *anxiety* facilitated her reading performance in week 8.

[Extract 3: Diary]

Fiona: I have been doing exercise to develop my English reading skills every day. I believed that the reading of *Economist* was really helpful. Compared with my classmates, I never felt the reading passages in the exams too long or too difficult. I **expected, well, just a little bit** to take the exams to prove my competence. However, I still felt **a little bit anxious** during the exam. After I have finished the first passage in the exam (researcher's note: normally there were five passages for one exam), I felt **a bit relaxed**. Because I knew that I could do **well**.

#### **4.8.1.2 Perceived Debilitative Affective Experiences**

Two patterns (c & d, outlined below) could be elicited as more debilitative for Fiona's performance.

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

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

[Extract 4: Interview]

L: How did you feel after you received the feedback from your teacher?  
(vocabulary performance, week 6)

Fiona: I think I performed *really badly* last week. You know Chen  
(researcher's note: her classmate), why our teacher thought that she  
was more suitable than me to lead reading new vocabulary in class?  
Alright, I admit that **I respect her effort** of reciting the whole GRE  
book within a month. But I have finished the first round recitation as  
well! From the result, there **should be no difference!** In the exam, I  
felt **a bit stressful and anxious**. I did not think I performed as usual.

(*admiration –jealousy –anxiety –stress*)

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

Fiona reported one lower level positive emotion *expectation* and two lower level negative emotions *anxiety* and *stress*. The affective experiences appeared to have negatively affected good or average grammar performance in week 4.

[Extract 5: Diary]

Fiona: Although I expected to prove my ability, my **expectation** to take the exams was **much weaker than** the week before. Because in class, the teacher told us that the grammar section may include paragraphs outside the Syllabus, which made me feel **a little stressful**. Before the exam, I felt **a little bit anxious** and I knew that I may not perform as well as last time.

#### 4.8.1.3 Special Affective Pattern

One affective pattern was identified unique, *(d) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*. This affective pattern related to three different types of self-reported performance, namely, optimal performance, average performance, and worst performance. For example, motions of *expectation, relaxation* and *anxiety* were reported to be facilitative to Fiona's reading performance in week 8. Emotions of *expectation, confidence, stress* and *anxiety* were reported relevant to her average reading performance in week 14. Emotions of *expectation, stress* and *anxiety* were reported to have negatively affected her grammar performance in week 4.

[Extract 6: Diary]

Fiona: As I did not perform well last time (researcher's note: grammar performance, week 4), I felt **a bit anxious** when I ticked the boxes (researcher's note: answering the multiple-choice questions). The

teacher's feedback was fair. My performance **was just fine, not good... not bad**. I hope that I could perform better next time. Therefore, I am **a bit expecting** the next exam to come for now.

[Extract 7: Qualitative Survey]

Question: What is your perception of your grammar proficiency in week 12?

How did you feel after you received the feedback from your teacher?

Fiona: It was an **average** performance. The mark did not meet my expectation. I did not think that my parents would be satisfied with it. I was **a bit jealous** of my neighbour who has performed really well. I am **a bit anxious** of my slow process. I was **not that much confident, but confident** in myself.

Extract 6 and 7 reflected Fiona's self-reported **average** performance. Although within the same affective pattern, she reported an *expectation –anxiety* pattern in week 6 and an *anxiety –jealousy –confidence* pattern in week 12. Both affective experiences were reported important to her English development and reflected her wish to have a better performance next time.

#### **4.8.1.4 Normal Affective Pattern**

*(e) Medium Level Positive Affective Pattern*

Fiona reported five medium level positive emotions, namely, *confidence*, *contentment*, *enjoyment*, *expectation* and *interest*. The different combinations of these emotions appeared to be relevant to her self-reported average vocabulary performances in week 2 and 12, grammar and listening performances in week 8 and speaking performance in week 4.

[Extract 8: Interview]

L: How did you feel after you received the feedback from your teacher?

(listening performance, week 8)

Fiona: My performance **was just fine** (researcher's note: just fine equals to self-reported average performance, according to Fiona's explanations). I have **confidence** in me and I **enjoy** such a feeling.

(*confidence –enjoyment*)

(f) *Lower Level Negative Affective Pattern*

Fiona reported two lower level negative emotions, namely, *stress* and *anxiety*. They appeared to be relevant to her self-reported average writing performances in week 8.

[Extract 9: Diary]

Fiona: I felt **a bit anxious** and **stressful**. Unlike my other classmates, I have made hard effort to improve my writing skills. But the mark was **so-so**. It did not reflect my effort. I do not know if I will continue these exercises.

## 4.8.2 Fiona's Self-reported Performance

### 4.8.2.1 Identified Attractor States

Altogether four attractor states were identified. They were *'Integrative Disposition'* which contained two components of *'Desired Level of L2 Competence'* and *'Personal Goals'*; *'External Incentives'* which contained two components of *'Teacher's Appraisal'* and *'Peers' Approval'*; *'Autonomy'* and *'Self-esteem'*. The first three attractor states were defined in Alex's profile.

#### 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' (p. 18). 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'. From Fiona's responses, she reported that in week 10, her *'self-doubt'* decreased because of her successful election of becoming a *'member of Model United Nations Association'*. Another example was that she *'positively helped the teacher with the preparation before each lesson'*, which reflected her healthy self-esteem increased positive behaviour.

#### 4.8.2.2 Fiona's Self-reported Performance Trajectory

- Fiona's Self-reported Vocabulary Performance Trajectory

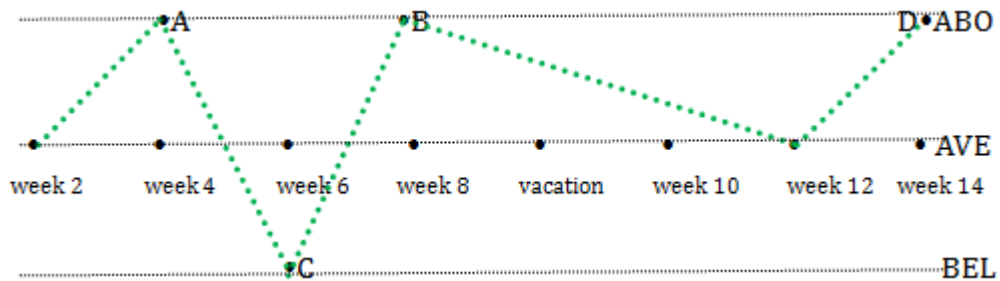


Figure 4.7.1 Fiona's Self-reported Vocabulary Performance

The initial condition for Fiona's self-reported vocabulary performance was 'to study an MA in Interpreting and Translating in the University of Bath, UK'. Such a 'Personal Goal' can be categorised as the attractor state 'Integrative Disposition'. Four attractors, namely, 'Autonomy', 'Integrative Disposition', 'Self-esteem' and 'External Incentives' were identified.

- Fiona's Self-reported Grammar Performance Trajectory

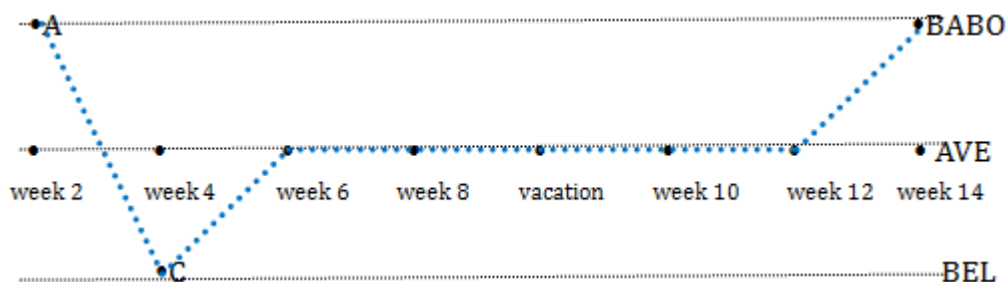


Figure 4.7.2 Fiona's Self-reported Grammar Performance

Fiona reported that self-reported grammar performance was 'positively helping her teacher with the class preparation' because she believed that she was 'more

*competent than others to be the teacher's assistant*'. In addition, two attractor states 'Self-esteem' and 'External Incentives' were identified. At Point A, Fiona argued that she believed her grammar performance reached its optimal state in week 2. She felt that she was *'more competent than others to be the teacher's assistant'*. Such a response could be categorised as the attractor state 'Self-esteem', which was also the initial condition for her grammar performance.

Fiona further reported that when she received the affirmative comments from her parents ('External Incentives'), she became very confident and interested in learning. She believed that her English ability could rank the top three in class and she wished to try every effort to meet such expectations. In addition, she reported that her self-esteem largely came from the affirmatives from her parents. The attractor state, 'Self-esteem' was also identified to be relevant to her average grammar performance in week 6 and week 12.

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

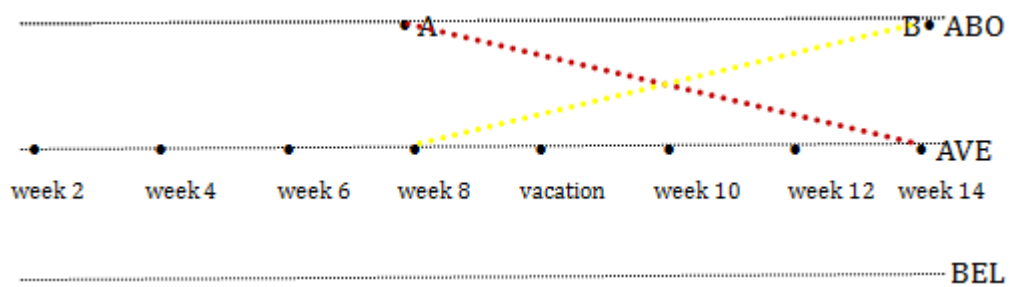


Figure 4.7.3 Fiona's Self-reported Listening and Reading Performance

The yellow dashed line referred to Fiona's self-reported listening performance whereas the red one referred to her reading aspect. One attractor state '*Autonomy*' was identified from her responses of the listening and reading performances.



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

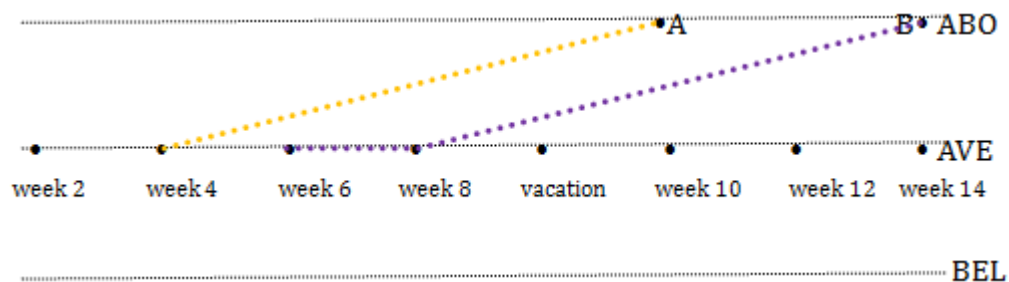


Figure 4.7.4 Fiona's Self-reported Speaking and Writing Performance

The orange dashed line referred to Fiona's self-reported speaking performance whereas the purple one referred to her writing aspect. Regarding Fiona's self-reported speaking performance, 'Self-esteem' was also identified. She reported that she was really confident in her English speaking ability. Her proficiency in the oral aspect has ranked the top three in her grade, according to the result of the English Oral Competition. She positively participated in different activities and held many leading positions. Regarding the writing section, she submitted *'pieces of writings to the university newspaper'* and found *'a foreign teacher to improve her writings'*. Such responses can be categorised as the attractor state 'Autonomy'. She also consulted with her teachers and peers to improve her writing ability, which can be categorised as the attractor state 'External Incentive'.

### **4.8.3 Fiona's Self-perceived Affective Experiences and Self-reported Performances**

Fiona believed that she belonged to the '*GRE Group*'. Unlike the previous five profiles, Fiona has provided more information on her average performances than others. The previous five participants before Fiona have emphasised more on their self-reported good or bad performances. They relatively less mentioned their average performances because they believed that they have '*nothing much to say*' (*Amber & Cindy*); '*normality equalled to unimportance*' (*Bruce*); or '*normal is normal, I expect nothing from it*' (*Eric*). In contrast, Fiona reported that her average performances were very important to her because they did not meet her expectation. Each performance would be the initial condition for the coming exam. She would learn from it and hoped to perform better in the following exams. In addition, Fiona was reported to be an FL learner with higher perceived English competence. Her self-esteem was reported coming from the external affirmatives from her parents. She reported that her family would like to emigrate to European countries in the future. Her parents wished that she could be skilled in English.

### **4.9 Louis' Profile**

Louis was a self-perceived sociable student. He reported that the main reason for choosing this university to study was because of the gender ratio imbalance. The female to male ratio was around 5:1. From his responses, he believed that the ratio imbalance may give him more chance to '*hang out with girls, or to find his future wife*'. His self-reported academic performances were not very good. He

believed that a *pass* would be okay for everything. He reported, '*I guess that I am not an ambitious guy. I like thoughts from The Doctrine of the Mean*'; '*A score of pass is enough for graduation, I think*'; '*I am not into going for a further study, just find a normal job and a beautiful wife, I think it is brilliant!*' Louis did not participate in extracurricular activities until he had a new girlfriend who was a member of the drama club. He was more interested in playing video games and travelling. All he wanted, as he reported, was to get sufficient score to graduate and enjoy life.

#### **4.9.1 Louis' Affective Experiences**

Eight emotions were identified from Louis' responses. They were *apathy, compassion, contentment, happiness, humility, relaxation, resignation* and *stress*. Different combinations of these emotions were categorised into seven salient affective patterns. Pattern (*e*), (*f*) and (*g*) were identified relevant to his self-reported average performance. From his responses, these patterns were not as important as the facilitative or debilitating ones.

(a) *Higher Level Positive Affective Pattern*

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

(c) *Higher Level Negative Affective Pattern*

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

*(e) Medium Level Positive and Medium Level Negative Affective Pattern*

*(f) Medium Level Positive Affective Pattern*

*(g) Lower Level Negative Affective Pattern*

#### **4.9.1.1 Perceived Facilitative Affective Experiences**

One pattern (a, outlined below) could be identified as more facilitative for Louis' performance.

*(a) Higher Level Positive Affective Pattern*

Louis reported four higher level positive emotions, namely, *relaxation, happiness, humility* and *contentment*. The different combinations of these emotions were related to his self-reported good vocabulary performance in regular exams in week 4 and good writing performance in week 5.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(vocabulary performance, week 4)

Louis: I think that I have performed **very well** in the exam, especially the vocabulary section. Because the night before the exam, I had studied with my roommates together, which I think was very effective. I felt

**very satisfied with** my performance and **really happy with** my achievement. But I understand, it was just a small test, and I have a long way to go.

*(contentment –happiness)*

#### **4.9.1.2 Perceived Debilitative Affective Experiences**

Three patterns (b, c & d, outlined below) could be elicited as more debilitating for Louis' performance.

##### *(b) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Louis reported three lower level positive emotions, namely, *compassion*, *relaxation*, and *humility* together with three lower level negative emotions, namely, *stress*, *apathy* and *resignation*. The different combinations of these emotions appeared to have negatively affected good or average vocabulary performance in week 6, grammar performance in week 12 and writing performance in week 14.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(grammar performance, week 12)

Louis: I felt **a bit stressful** because I did not recite the outlined paragraphs.

I did not know why but I did feel **a bit relaxed** during the exam. The feedback from the teacher proved that I performed really badly, **the worst ever**.

*(stress –relaxation)*

*(c) Higher Level Negative Affective Pattern*

Louis reported that two higher level negative emotions, namely, *stress* and *resignation* appeared to have negatively affected good or average vocabulary performance in week 12, grammar performance in week 6 and listening performance in week 14.

[Extract 3: Qualitative Survey]

Question: What is your perception of your listening proficiency in week 14?

How did you feel after you received the feedback from your teacher?

Louis: I knew that some of my classmates were using BBC or VOA to practice their English ability. I did not take such self-directed exercises. In the mid-term exam (researcher's note: week 14), I think the conversations from the listening section were too fast. It was a **bad** performance. I felt **really stressful** and did not understand what they were talking about. So I just made guesses. It was **really helpless**.

*(stress –resignation)*

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

Louis reported that two higher level negative emotions, namely, *stress* and *resignation*, together with one lower level positive emotion *humility*. The different combinations of these emotions appeared to have negatively affected good or average grammar performance in week 2 and reading performance in week 14.

[Extract 4: Diary]

Louis: I believe that the virtue of humility could increase opportunities for people to be accepted by others. I have always kept this notion in mind. Just being **a bit humble**, I think that it was a below average performance (researcher's note: grammar performance, week 2). Many of peers seemed to be really smart guys and very good at learning. So I felt **really stressful** to be with them.

*(stress –humility)*

## **4.9.2 Louis' Self-reported Performance**

### **4.9.2.1 Identified Attractor States**

Five attractor states were identified from his responses. They were ‘Integrative Disposition’ which contained two components of ‘Personal Goals’ and ‘Desired Level of L2 Competence’; ‘External Incentive’ which contained two components of ‘Teacher’s Appraisal’ and ‘Peers’ Influence’; ‘Topic Familiarity’; ‘Vision’ and ‘Amotivation’ which contained one component of ‘Nonrelevance’. The first four attractor states were presented in Alex’s profile and the fifth one was presented in Eric’s profile.

#### 4.9.2.2 Louis’ Self-reported Performance Trajectory

- Louis’ Self-reported Vocabulary Performance Trajectory

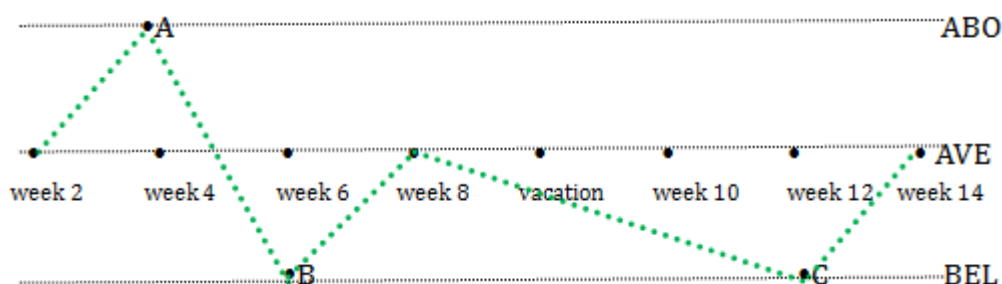


Figure 4.8.1 Louis’ Self-reported Vocabulary Performance

The initial condition was identified as ‘*the belief of The Doctrine of the Mean*’; ‘*A score of pass is enough for graduation*’, which can be categorised as the attractor state ‘Integrative Disposition’. Two attractor states, namely, ‘Integrative Disposition’ and ‘Vision’ were identified. His ‘Vision’ was to ‘*hang out with girls, or to find his future wife*’. In this subsidiary system, a form of **a closed loop of periodic movement** (Larsen-Freeman & Cameron, 2008) between the attractor states was identified. I will further discuss this point in section 4.8.3.



- Louis' Self-reported Grammar Performance Trajectory

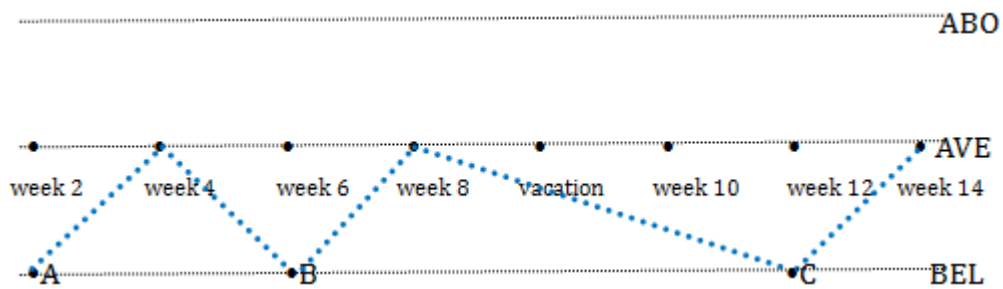


Figure 4.8.2 Louis' Self-reported Grammar Performance

Two attractor states 'External Incentive (Teacher's Appraisal; Peers' Influence)' and 'Vision' were identified. Two attractors moved together through the whole period of his grammar learning.

- Louis' Self-reported Listening and Reading Performance Trajectory

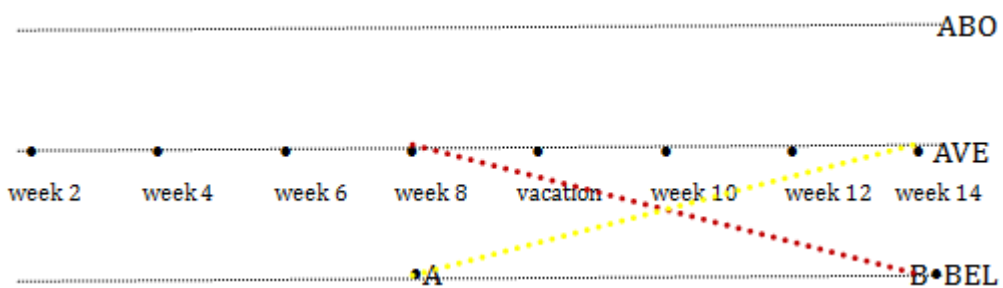


Figure 4.8.3 Louis' Self-reported Listening and Reading Performance

The yellow dashed line referred to Louis' self-reported listening performance whereas the red one referred to his reading aspect. One attractor state 'Amotivation (Nonrelevance)' was identified from his responses of both performances.

- Louis' Self-reported Speaking and Writing Performance Trajectory

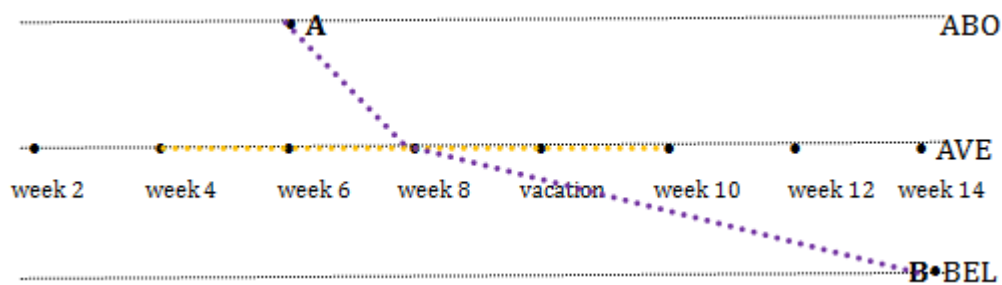


Figure 4.8.4 Louis' Self-reported Speaking and Writing Performance

The orange dashed line referred to Louis' self-reported speaking performance whereas the purple one referred to his writing aspect. 'Amotivation' was identified from his speaking performances. From his responses, Louis believed that the scores from the oral competitions were not important as they were not shown on his transcript. On the other hand, 'Topic Familiarity' was identified from his writing performances.

#### 4.9.3 Louis' Self-perceived Affective Experiences and Self-reported Performances

Louis believed that he belonged to the '*Civil Service Exam Group*'. A **closed loop of periodic movement** (Larsen-Freeman & Cameron, 2008) between the attractor states was identified from his vocabulary system. I will provide an example to explain the difference between an open-loop system and a closed-loop system. An old-fashioned heating system in a house can be considered as an open-loop system. Such a system follows three steps to work:

*input (an on-off switch)* → *process (boiler)* → *output (radiator)*. The system will keep working after being turned on, regardless of whether the house is over heated or not. On the other hand, a closed-loop system was able to correct in order to meet target results (Gopal, 2008). A sensor is normally added to an old-fashioned heating system in order to look after the room's temperature (output) and to adjust the process. This sensor is normally termed as **feedback**.

From Louis' responses, the attractor state 'Integrative Disposition' acted as a sensor to correct his vision. For example, in week 4, his self-reported vocabulary performance reached the optimal state. His 'Vision' changed from being sociable and looking for a beautiful wife to want to study abroad as his peers. However, his 'Desired Level of L2 Competence (Integrative Disposition)' made him realise that such a vision was too ambitious; because a high GPA (Grade Point Average) was indispensable for obtaining a good offer from a university abroad. Louis was reported to be an FL learner with lower perceived English competence. In addition, he also realised that the financial issue. As he reported, he was not able to pay for the high tuition fees to study abroad. Consequently, when his 'Vision' became too ambitious, which vision was accompanied by self-reported average performances in week 4, 8 and 14, 'Integrative Disposition' would make corrections. The two attractor states moved periodically.

#### **4.10 Lucy's Profile**

Lucy was a self-perceived friendly girl who liked to help others. Lucy reported that she was born in Dalian and very much into Japanese culture. She wished to work for a Japanese corporation in the future. Therefore, she learnt Japanese

language by herself and successfully passed the N1 level (the highest level) of JLPT (Japanese-Language Proficiency Test) when she was still a year-two student. Her classmates called her ‘a Japanese expert in the English Department’. From Lucy’s responses, she did not pay too much attention to her English academic scores. A pass score was everything to her. ‘*I did not that much care about the scores, a pass was everything to me.*’ She did not pay attention to the development of her English skills.

#### **4.10.1 Lucy’s Affective Experiences**

Six emotions were identified from Lucy’s responses. They were *anxiety, apathy, boredom, happiness, relaxation* and *resignation*. The different combinations of these emotions were categorised into eight salient affective patterns. Pattern (f), (g) and (h) were identified relevant to her self-reported average performance. From her responses, these patterns were not as important as the facilitative or debilitating ones.

(a) *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

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

(c) *Mixed Lower Level Negative and Higher Level Negative Affective Pattern*

(d) *Lower Level Negative Affective Pattern*

(e) *Higher Level Negative Affective Pattern*

*(f) Medium Level Positive Affective Pattern*

*(g) Medium Level Negative Affective Pattern*

*(h) Medium Level Positive and Medium Level Negative Affective Pattern*

#### **4.10.1.1 Perceived Facilitative Affective Experiences**

Two patterns (a & b, outlined below) were identified as more facilitative for Lucy's performance.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Lucy reported two lower level positive emotions, namely, *happiness* and *relaxation*, together with one lower level negative emotion *apathy*. These emotions appeared to have positively affected her vocabulary and grammar performance in week 14.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?  
(vocabulary performance, week 14)

Lucy: I felt that I **perfectly answered** all questions in the vocabulary section during the exam. I have well prepared for the mid-term exam, and questions were reviewed. During the exam, I felt **a bit relaxed**. I

was **not that much care about** the feedback from the teacher,  
though I felt **a bit happier** with my performance.

*(apathy –relaxation –happiness)*

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

Lucy reported that one lower level negative emotion *boredom*, together with one higher level positive emotion *relaxation* appeared to have positively affected her listening performance in week 14 and speaking performance in week 4.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(speaking performance, week 4)

Lucy: I think the theme of my speech was very interesting and I have performed **very well**. Although I felt **a little bit boring** during the Q and A section; all in all, it was a **very good** performance. Because I have prepared for this contest sufficiently, I felt **very relaxed** throughout this competition.

*(boredom –relaxation)*

#### 4.10.1.2 Perceived Debilitative Affective Experiences

Three patterns (c, d & e, outlined below) could be elicited as more debilitating for Lucy's performance.

##### *(c) Mixed Lower Level Negative and Higher Level Negative Affective Pattern*

Lucy reported two lower level negative emotions, namely *anxiety*, *apathy* together with one higher level negative emotion *boredom*. These emotions appeared to have negatively affected good or average grammar performance in week 4.

[Extract 3: Interview]

L: How did you feel after you received the feedback from your teacher?  
(grammar performance, week 4)

Lucy: Even during the exam, I knew that I had performed **worse than ever**. I could not recall the paragraphs I have recited before the exam. I felt **a bit anxious**. The teacher's feedback proved was fair. Well, I guess that my head got stuck during the exam. I **did not that much care about** the scores, a 'pass' was everything to me. Besides, I think that the text recitation section was **really boring** and meaningless.

*(d) Lower Level Negative Affective Pattern*

Lucy reported two lower level negative emotions, namely, *boredom* and *resignation*. These emotions appeared to have negatively affected good or average reading performance in week 8.

[Extract 4: Diary]

Lucy: I think I felt **a bit bored** during the exam (researcher's note: reading performance, week 8). I think the content of the reading passages were **a little bit boring**, but I still **was obligated to** answer the questions. I guess I should be **somewhat submissive** to such exams, or even the standard answers, though sometimes they may not always be correct.

*(boredom –resignation)*

*(e) Higher Level Negative Affective Pattern*

Lucy reported two higher level negative emotions, namely, *apathy* and *boredom*. The affective experiences appeared to have negatively affected good or average writing performance in week 8.

[Extract 5: Diary]



Lucy: I think the writing topic was not difficult and I know the history of Xinghai Park. The template which I have prepared for this contest was good enough. However, I sometimes wonder if such writing contests were really important or not. Can such exams really distinguish our writing abilities? Well, I guess that these writing tests were **really boring** and **no student could do anything to avoid** them. I believed that the education system was **really helpless**. I do not think the teacher's feedback met my expectation. I think I did **poorer than usual**, but I **do not care about** the feedback **at all**, because it has no use to improve my writing skills.

*(apathy –boredom)*

## **4.10.2 Lucy's Self-reported Performance**

### **4.10.2.1 Identified Attractor States**

Five attractor states were identified from her responses. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Topic Familiarity'; 'Vision' and 'Amotivation' which contained one component of 'Nonrelevance'. The first four attractor states were presented in Alex's profile and the fifth one was presented in Eric's profile.

#### 4.10.2.2 Lucy's Self-reported Performance Trajectory

- Lucy's Self-reported Vocabulary Performance Trajectory

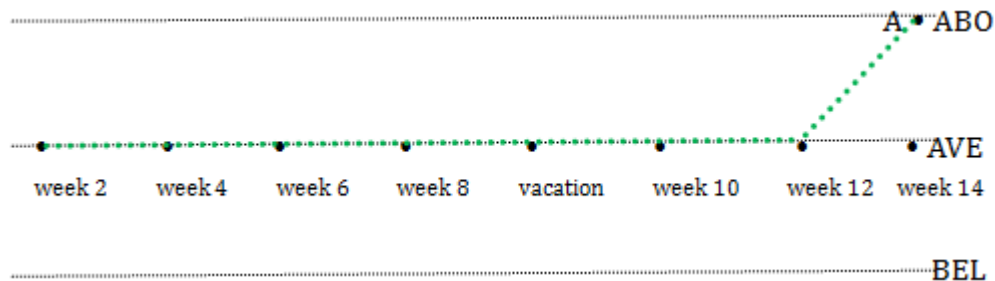


Figure 4.9.1 Lucy's Self-reported Vocabulary Performance

Figure 4.9.1 described how Lucy's self-reported vocabulary performance changed over time. One crucial point was identified from her responses. Regarding her self-reported vocabulary performance, the initial condition was identified as *'I did not that much care about the scores, a pass was everything to me'*, which can be categorised as the attractors state 'Integrative Disposition' and 'Amotivation'. In addition, as she reported, *'I have attended the Business Japanese Training every week to improve my Japanese proficiency'*; *'In terms of the English exams, all I need is a pass'*; *'Internship is very important to me, and that's why I start to recite the vocabulary outlined by Neusoft'*. She had clear goals for her future. Such a 'Vision' related to the image of working in a Japanese corporation after graduation. Over the time window of the study, three attractors, namely, 'Integrative Disposition', 'Amotivation' and 'Vision' were identified. From Lucy's responses, the attractor 'Vision' correlated with her behaviour. For example, she *'dreamed to become an OL (Office Lady) as those from the Japanese TV series'*. Therefore, she has paid more attention on Japanese learning instead of English learning.

- Lucy’s Self-reported Grammar Performance Trajectory

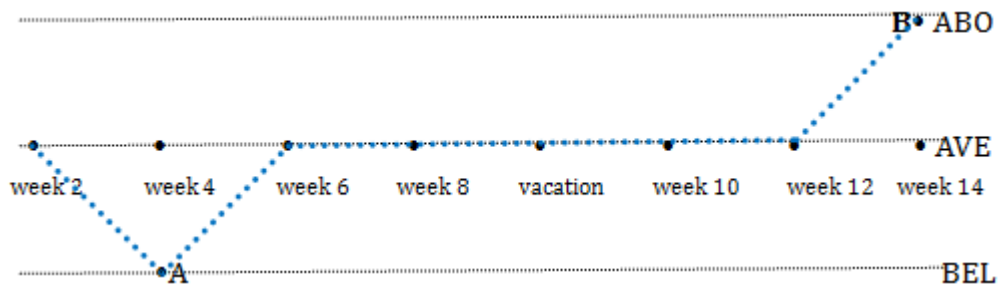


Figure 4.9.2 Lucy’s Self-reported Grammar Performance

Figure 4.9.2 described how Lucy’s self-reported grammar performance changed over time. One attractor state ‘External Incentives’ was identified from her responses.

- Lucy’s Self-reported Listening and Reading Performance Trajectory

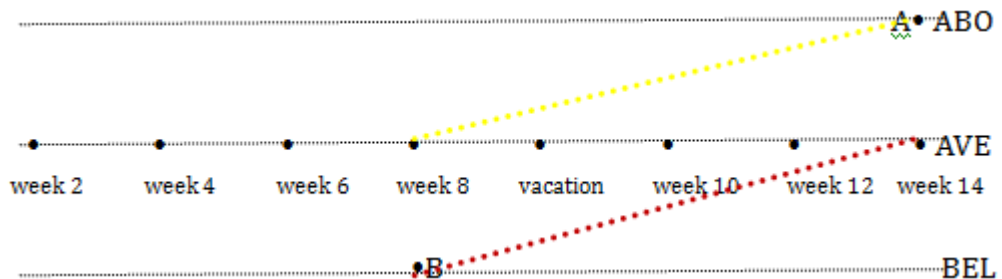


Figure 4.9.3 Lucy’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Lucy’s self-reported listening performance whereas the red one referred to her reading aspect. One attractor state ‘External Incentives’ was identified from her responses.

- Lucy's Self-reported Speaking and Writing Performance Trajectory

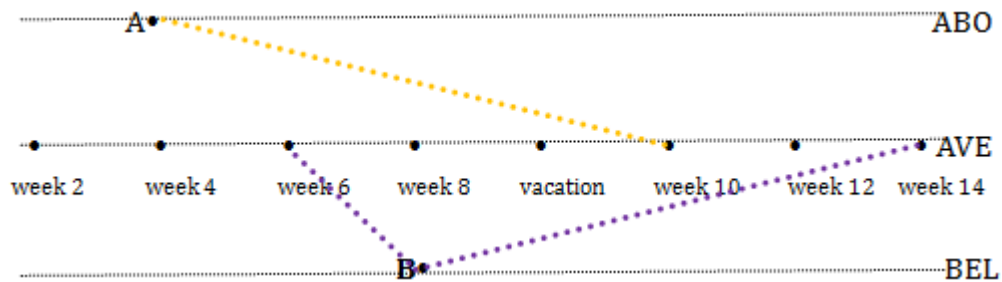


Figure 4.9.4 Lucy's Self-reported Speaking and Writing Performance

The orange dashed line referred to Lucy's self-reported speaking performance whereas the purple one referred to her writing aspect. 'Vision' was identified from her speaking performances and 'Topic Familiarity' was identified from her writing performances.

#### 4.10.3 Lucy's Self-perceived Affective Experiences and Self-reported Performances

Lucy was reported as an FL learner with lower perceived English competence. She believed that she belonged to the 'Civil Service Exam Group'. She had a strong career 'Vision' of becoming an office lady in a Japanese firm. She did not report any self-directed English learning. In contrast, she spent much of her time on Japanese learning. The self-perceived affective experiences and self-reported performances happened and interacted with each other at the same time via the mediations of different attractor states.

Her self-perceived lower English competence (cognitive factor), no intention to improve her English skills (motivational factor), and different affective

experiences (emotional factor) were operating in the system at the same time. Different attractor states were reported relevant to different subsidiary systems. For example, 'Vision' was identified relevant to her vocabulary and speaking performances; whereas 'External Incentives' was identified relevant to her grammar, listening and reading performances. The above example revealed that although her career 'Vision' was reported as a strong attractor state; it was not relevant to all her performances. Different attractor states will contribute to different learning experiences.

#### **4.11 Mary's Profile**

Mary was a self-perceived highly motivated student with great confidence in learning. In addition, she reported that she was an autonomous student. She reported that she could organise her time effectively. She showed little interest in extracurricular activities. She had clear goals for her future. She reported that she would like to study abroad for a master degree. Although which university from which country were not decided, she believed that it should be the best. Therefore, she reported that the GPA was the most important thing to her.

##### **4.11.1 Mary's Affective Experiences**

Eight emotions with different intensities were identified from Mary's responses. They were *anxiety, apathy, confidence, contempt, contentment, gratitude, relaxation* and *resignation*. The different combinations of these emotions were categorised into seven salient affective patterns. Pattern (*e*), (*f*) and (*g*) were

identified relevant to her self-reported average performance. From her responses, these patterns were not as important as the facilitative or debilitating ones.

*(a) Higher Level Positive Affective Pattern*

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

*(c) Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

*(d) Higher Level Negative Affective Pattern*

*(e) Medium Level Positive Affective Pattern*

*(f) Medium Level Negative Affective Pattern*

*(g) Medium Level Positive and Medium Level Negative Affective Pattern*

#### **4.11.1.1 Perceived Facilitative Affective Experiences**

Four patterns (a, b, c & d, outlined below) could be identified as more facilitative for Mary's performance.

*(a) Higher Level Positive Affective Pattern*

Mary reported that three higher level positive emotions, namely, *relaxation*, *confidence* and *contentment* related to her good vocabulary performance in regular exams in week 6.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(vocabulary performance, week 6)

Mary: **Very well**, I think. I have successfully answered all questions during the exam, and I am **pretty much confident** that my answers were all correct. The feedback from the teacher proved that I was right. I am **very satisfied with** the score. During the exam, I still have much time left. **No rush at all!**

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

Mary reported four higher level positive emotions, namely, *contentment*, *relaxation*, *gratitude* and *confidence*. She also reported four lower level negative emotions, namely, *anxiety*, *apathy*, *contempt* and *resignation*. The different combinations of these emotions appeared to have positively affected her vocabulary performance in week 2 and week 12, grammar performance in week 2 and week 6, speaking performance in week 10 and listening and reading performance in week 14.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(speaking performance, week 10)

Mary: Many of my classmates had better English accent than me. But I think my advantage is to speak at a normal speed and make my points very clear. It was a **good** performance. I felt **really grateful to** the judges who gave me a very high score and I was **really satisfied with** my performance, although at the beginning of the speech, I felt **a bit anxious**.

*(anxiety –gratitude –contentment)*

*(c) Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

Mary reported three higher level positive emotions, namely, *confidence*, *contentment* and *relaxation* and one higher level negative emotion *apathy*. These emotions appeared to have positively affected her writing performance in week 8.

[Extract 3: Qualitative Survey]

Question: What is your perception of your writing performance in week 8?

How did you feel after you received the feedback from your teacher?

Mary: I think if we were allowed to write it in Chinese, we would find that the topic itself was too childish. I felt **really relaxed** during the exam. I know that the arguments in my writing were not important at all. Therefore, I do **not even care** if my writing meant something. All I need to do was to finish the section. I felt **really confident** in writing,



it was a familiar topic, and I knew what kind of writings the teachers would like most. No doubt, I could get the marks I should get. I was **very satisfied** with my performance.

*(d) Higher Level Negative Affective Pattern*

Mary reported that two higher level negative emotions, namely, *contempt* and *resignation* related to her optimal grammar performance in regular exams in week 12.

[Extract 4: Diary]

Mary: I think I am in a good condition for the exam. The questions were easy and I cannot hide my **strong contempt** for such exams. I strongly felt that **I had no choice!** I have to participate in such a childish exam regularly.

#### **4.11.2 Mary's Self-reported Performance**

##### **4.11.2.1 Identified Attractor States**

Five attractor states were identified from her responses. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Topic Familiarity'; 'Autonomy' and 'Amotivation' which contained one component of 'Nonrelevance'. The first

four attractor states were presented in Alex’s profile and the fifth one was presented in Eric’s profile.

#### 4.11.2.2 Mary’s Self-reported Performance Trajectory

- Mary's Self-reported Vocabulary Performance Trajectory

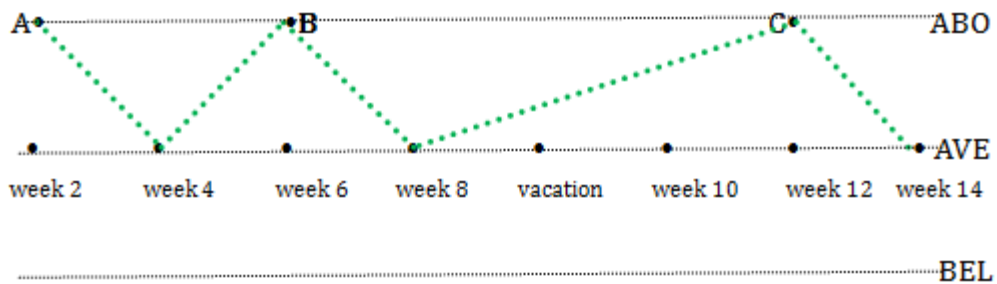


Figure 4.10.1 Mary's Self-reported Vocabulary Performance

From Mary’s responses, the initial condition was identified as ‘*to study a master degree in the best university in the world*’ which can be categorised as the system component ‘Personal Goals’ from the attractor state ‘Integrative Disposition’.

Over the time window of the study, three attractors, namely, ‘Autonomy’, ‘Integrative Disposition’ and ‘Amotivation’ were identified.

- Mary's Self-reported Grammar Performance Trajectory

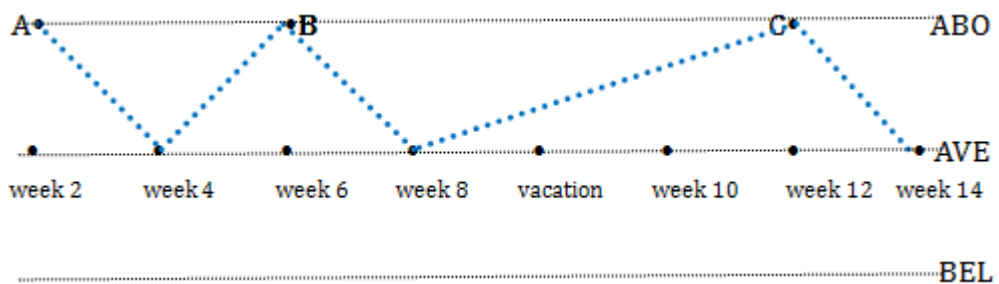


Figure 4.10.2 Mary's Self-reported Grammar Performance

Before the vacation, Mary kept self-directed learning by ‘using *Bo Bing Grammar*’ to improve her grammar proficiency. ‘Autonomy’ was identified during the first eight weeks. She reported a *relaxation –contentment* affective pattern at medium level in week 8. Her motivation turned out to be a ‘neutral attention’ state which referred to ‘the type of situation where a learner is still paying attention in class, but is not necessarily actively engaging with the material, nor does he or she have any particularly intense affective reaction to the situation’ (Waninge 2014, p. 202). She believed that such self-directed learning would not help to increase the scores. Therefore, she abandoned the usage of ‘*Bo Bing Grammar*’. ‘Amotivation’ was identified after the vacation.

- Mary's Self-reported Listening and Reading Performance Trajectory

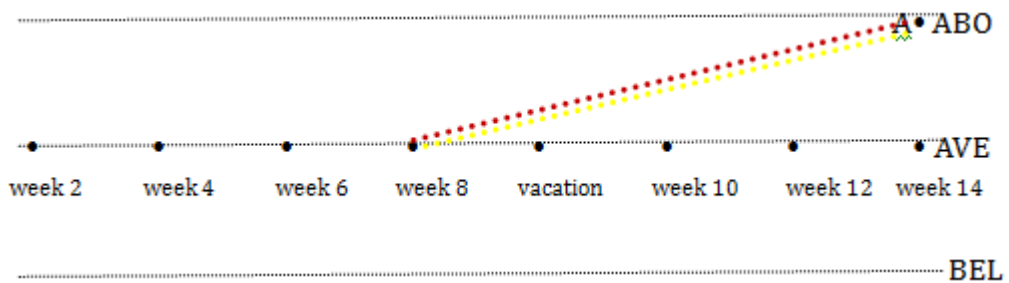


Figure 4.10.3 Mary's Self-reported Listening and Reading Performance

- Mary's Self-reported Speaking and Writing Performance Trajectory

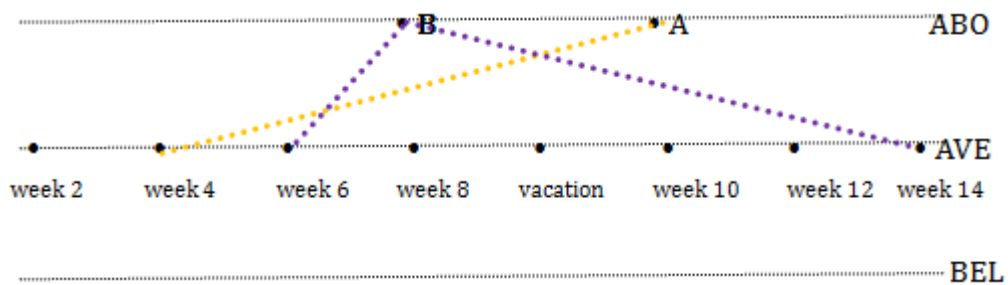


Figure 4.10.4 Mary's Self-reported Speaking and Writing Performance

The yellow dashed line referred to Mary's self-reported listening performance; the red one referred to her reading aspect; the orange one referred to her speaking aspect and the purple one referred to her writing aspect. 'Topic Familiarity' was identified from her listening, reading and writing performances and 'External Incentives' was identified from her speaking performances.

#### **4.11.3 Mary's Self-perceived Affective Experiences and Self-reported Performances**

Mary was reported as an FL learner with higher perceived English competence. She believed that she belonged to the '*GRE Group*'. Her self-perceived higher English competence (cognitive factor), either self-directed learning or no intention to improve her English skills (motivational factor), and different affective experiences (emotional factor) were operating in the system at the same time. These factors contributed to certain attract states through self-organisation. Different attractor states were reported relevant to different subsidiary systems and contributed to different learning experiences.

#### **4.12 Nancy's Profile**

Nancy was a self-perceived highly motivated student. She improved her English skills through self-directed learning and prepared for the exams with great passion. She reported that although geniuses existed, hard working was also very important. She constantly learnt from the great minds from the past. She engraved two quotes on the wood, and kept the wood on her desk to encourage her every day. One quote was from Colin L. Powell who believed, '*there are no*

*secrets to success. It is the result of preparation, hard work, and learning from failure*'; and the other was from Mendelejev who argued that, '*Genius only means hard-working all one's life*'. Nancy believed that she was with perseverance and confidence. She reported that she belonged to the '*Civil Service Exam Group*' and she wanted to study an MA in Translation at Beijing University of Foreign Languages.

#### **4.12.1 Nancy's Affective Experiences**

Six emotions were identified from Nancy's responses. They were *anxiety, boredom, confidence, expectation, resignation* and *stress*. The different combinations of these emotions were categorised into seven salient affective patterns. Pattern (d) to (g) were identified relevant to her self-reported average performance. From her responses, (a) to (d) were very important to her English development.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

*(b) Higher Level Positive Affective Pattern*

*(c) Higher Level Negative Affective Pattern*

*(d) Lower Level Negative Affective Pattern*

*(e) Medium Level Positive Affective Pattern*

*(f) Medium Level Positive and Medium Level Negative Affective Pattern*

*(g) Mixed Lower Level Negative and Higher Level Positive Affective Pattern*

#### **4.12.1.1 Perceived Facilitative Affective Experiences**

Two patterns (a, & b, outlined below) could be identified as more facilitative for Nancy's performance.

*(a) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Nancy reported two lower level positive emotions, namely, *confidence* and *expectation*, together with three lower level negative emotions, namely, *boredom*, *stress* and *anxiety*. The different combinations of these emotions appeared to have positively affected her vocabulary performance in week 14, grammar performance in week 6 and week 14, reading performance in week 14, writing performance in week 5 and speaking performance in week 4.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(speaking performance, week 4)

Nancy: My speech was **great**, I guess! I felt **a little anxious** during the contest, but I believed that such feelings were not bad because it made me more concentrate on the questions raised by the judges. I,

well, **just a little bit, look forward to** competing with my peers,  
because I have fully prepared for the speech.

*(anxiety –expectation)*

*(b) Higher Level Positive Affective Pattern*

Nancy reported that two higher level positive emotions, namely, *confidence* and *expectation* appeared to have positively affected her vocabulary performance in week 2, and listening performance in week 8.

[Extract 2: Diary]

Nancy: I think my performance (researcher's note: vocabulary performance, week 2) was **very good**. Actually I **really look forward to** this exam because I have completed a full preparation. I think I am talented in reciting vocabulary and I am really confident in reciting new vocabulary in a short time.

**4.12.1.2 Perceived Debilitative Affective Experiences**

One pattern (c, outlined below) could be elicited as more debilitative for Nancy's performance.

*(c) Higher Level Negative Affective Pattern*

Nancy reported two higher level negative emotions, namely, *anxiety* and *stress*. They appeared to have negatively affected good or average vocabulary performance in week 6.

[Extract 3: Interview]

L: How did you feel after you received the feedback from your teacher?  
(vocabulary performance, week 6)

Nancy: I think I have performed **the worst ever!** But I think it probably was not my fault. Because I have prepared for the exam as usual and pretty much sure that I have recited all outlined vocabulary. However, during the exam, almost all questions in the vocabulary section were new to me and obviously they were out of the syllabus. I felt **extremely anxious and stressful** during the exam.

#### **4.12.1.3 Normal Affective Pattern**

Four patterns (d, e, f & g stated above) could be elicited as relevant to Nancy's average performance. Especially pattern (d, outlined below) was reported to be very important to her English development.

*(d) Lower Level Negative Affective Pattern*

Nancy reported two lower level negative emotions, namely, *anxiety* and *stress*. They appeared to be relevant to her self-reported average vocabulary



performance in week 4, reading performance in week 8 and speaking performance in week 10.

[Extract 4: Interview]

L: How did you feel after you received the feedback from your teacher?

(speaking performance, week 10)

Nancy: It was an **average** performance. I felt **a little anxious and stressful** during the contest. I think my previous performance was much better. I believed that such stress was very helpful to assist me to recognise my real speaking proficiency.

#### **4.12.2 Nancy's Self-reported Performance**

##### **4.12.2.1 Identified Attractor States**

From Nancy's responses regarding her self-reported performances, altogether five attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Personal Goals' and 'Desired Level of L2 Competence'; 'External Incentive' which contained two components of 'Teacher's Appraisal' and 'Peers' Influence'; 'Autonomy', 'Vision' and 'Topic Familiarity'. The definitions for these attractor states were presented in Alex's profile.

#### 4.12.2.2 Nancy's Self-reported Performance Trajectory

- Nancy's Self-reported Vocabulary Performance Trajectory

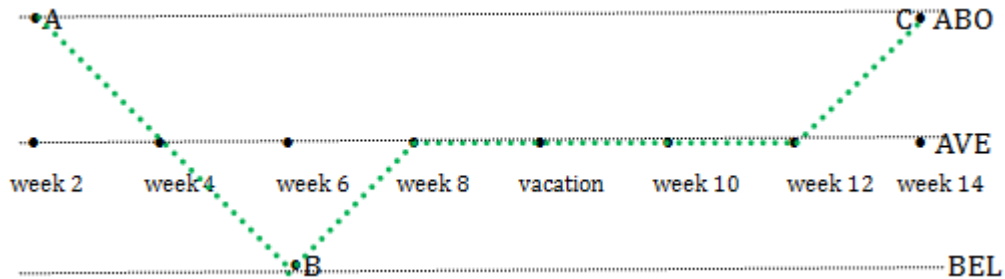


Figure 4.11.1 Nancy's Self-reported Vocabulary Performance

The initial condition was identified as *'to study an MA in Translation at Beijing University of Foreign Languages'*, which can be categorised as the system component *'Personal Goals'* from the attractor state *'Integrative Disposition'*. Over the time window of the study, three attractors, namely, *'Autonomy'*, *'Integrative Disposition'* and *'External Incentives'* were identified.

- Nancy's Self-reported Grammar Performance Trajectory

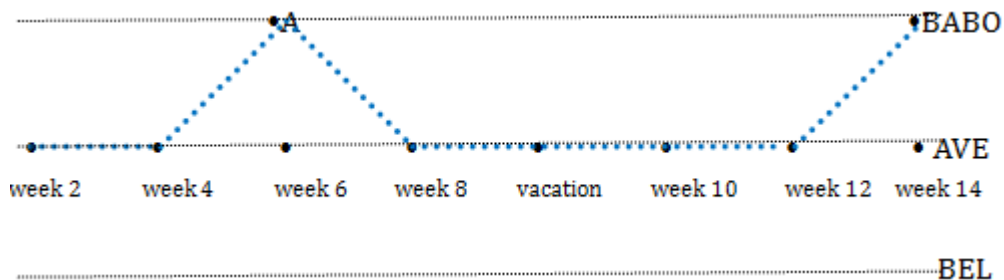


Figure 4.11.2 Nancy's Self-reported Grammar Performance

Two attractors ‘External Incentives’ and ‘Autonomy’ were identified from her self-reported grammar performances.

- Nancy's Self-reported Listening and Reading Performance Trajectory

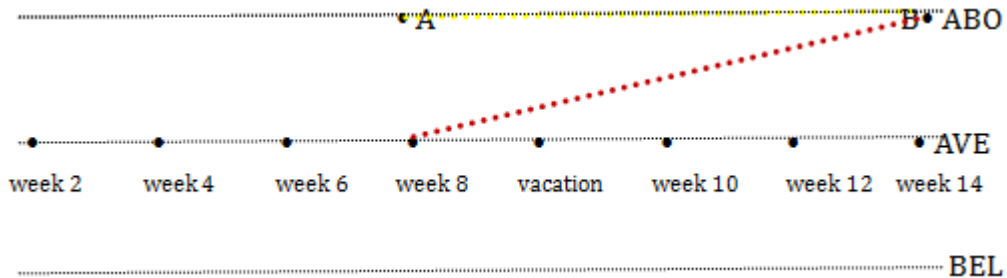


Figure 4.11.3 Nancy’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Nancy’s self-reported listening performance whereas the red one referred to her reading aspect. ‘Autonomy’ was identified from both performances.

- Nancy's Self-reported Speaking and Writing Performance Trajectory

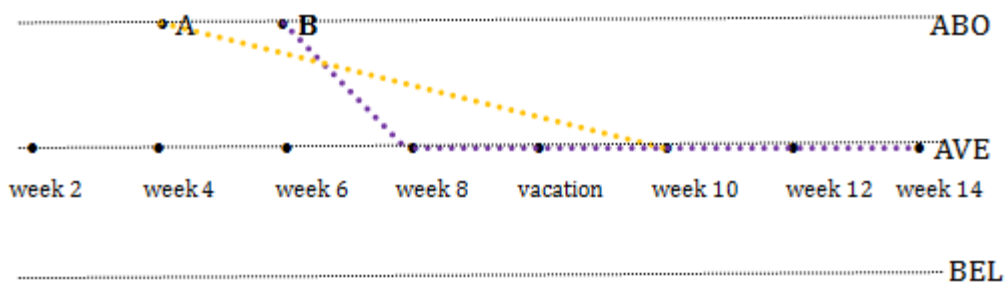


Figure 4.11.4 Nancy's Self-reported Speaking and Writing Performance

The orange dashed line referred to Nancy’s self-reported speaking performance whereas the purple one referred to her writing aspect. ‘Vision’ was identified

from her self-reported speaking performances and '*Topic Familiarity*' was identified from her self-reported writing performances.

#### **4.12.3 Nancy's Self-perceived Affective Experiences and Self-reported Performances**

Nancy was reported as an FL learner with higher perceived English competence. She believed that she belonged to the '*Civil Service Exam Group*'. Her self-perceived higher English competence (cognitive factor), self-directed learning such as the usage of BBC video clips and the Economics (motivational factor), and different affective experiences (emotional factor) were operating in the system at the same time. These factors contributed to certain attract states through self-organisation. Different attractor states were reported relevant to different subsidiary systems and would contribute to different learning experiences.

#### **4.13 Peter's Profile**

Peter was a self-perceived autonomous student who designed study plans for his English development and organised his time effectively. He positively participated in different activities and held many leading positions, such as the leading actor in the English Drama Club or a chief member of Model United Nations Association. He had clear goals for his future and designed plans to achieve these goals. He reported that he would like to study a master degree which was '*not too difficult to graduate*' in a university in Canada after his graduation. He reported that his family would like him to study a master degree

according to the Ontario Masters Graduates Scheme. To be specific, this scheme provided an opportunity for international master graduates to be nominated as permanent residents according to the International Student Category Masters Graduate Stream in Ontario. Therefore, he positively prepared for the exams, as well as the TOEFL and GRE tests.

#### **4.13.1 Peter's Affective Experiences**

Nine emotions were identified from Peter's responses. They were *anxiety, apathy, confidence, contentment, expectation, interest, relaxation, resignation, and stress*. The different combinations of these emotions were categorised into six salient affective patterns. Pattern (*e*) and (*f*) were identified relevant to his self-reported average performance. From his responses, these patterns were not as important as the facilitative or debilitating ones.

*(a) Higher Level Positive Affective Pattern*

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

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

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

*(e) Medium Level Positive Affective Pattern*

*(f) Lower Level Negative Affective Pattern*

#### 4.13.1.1 Perceived Facilitative Affective Experiences

Two patterns (a & b, outlined below) could be identified as more facilitative for Peter's performance.

##### *(a) Higher Level Positive Affective Pattern*

Peter reported five higher level positive emotions, namely, *expectation*, *relaxation*, *confidence*, *interest*, and *contentment*. The different combinations of these emotions appeared to have positively affected his vocabulary performance in week 4, 8 and 14, grammar performance in week 2, listening performance in week 14 and speaking performance in week 10.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(vocabulary performance, week 4)

Peter: I performed **very well**, I think. During the vacation, I have finished the recitation of TOEFL and GRE vocabulary book. I know the meaning of even a word like 'COVEN', which means 'an assembly of witches; usually 13 witches'. I could not imagine that in any condition, I would come across a word like that. Well, I digressed. I felt **really satisfied with** my performance. I **was really confident** to take such exams and **really expecting to** attend more.

*(contentment –confidence –expectation)*

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

Peter reported two higher level positive emotions, namely, *expectation* and *confidence* and one lower level negative emotion *anxiety*. The different combinations of these emotions appeared to have positively affected his grammar and writing performance in week 14, reading performance in week 8.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(grammar performance, week 14)

Peter: It was a very good performance. I have **great confidence** in me.

Although at the beginning of the exam, I felt **a bit anxious**, I soon calmed down.

*(anxiety –confidence)*

#### **4.13.1.2 Perceived Debilitative Affective Experiences**

Two patterns (c & d, outlined below) could be elicited as more debilitative for Peter's performance.

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

Peter reported one lower level positive emotion *relaxation* and two higher level negative emotions, namely, *anxiety* and *stress*. They appeared to have negatively affected good or average vocabulary performance in week 6.

[Extract 3: Diary]

Peter: I felt that my last performance (researcher's note: vocabulary performance in week 6) was **the worst ever!** I guess I felt **a bit relaxed** at first. I should not feel like that. Afterwards, I found out that the questions were not as easy as I thought. I then felt **really anxious** and **stressful**.

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

Peter reported one lower level positive emotion *relaxation* and two lower level negative emotions, namely, *anxiety* and *stress*. They appeared to have negatively affected good or average grammar performance in week 4.

[Extract 4: Diary]

Peter: I felt **a bit relaxed** before the exam. When I continued to answer the questions, I started to feel **a bit anxious** because I was not quite sure if some of the answers I had put in were right or wrong. So I felt **a bit stressful** when I proceeded to the next section.



## 4.13.2 Peter's Self-reported Performance

### 4.13.2.1 Identified Attractor States

Altogether six attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Desired Level of L2 Competence' and 'Personal Goals'; 'External Incentives' which contained two components of 'Teacher's Appraisal' and 'Peers' Approval'; 'Autonomy', 'Vision', 'Topic Familiarity' and 'Self-esteem'. The first five attractor states were defined in Alex's profile and the sixth one was defined in Fiona's profile.

### 4.13.2.2 Peter's Self-reported Performance Trajectory

- Peter's Self-reported Vocabulary Performance Trajectory

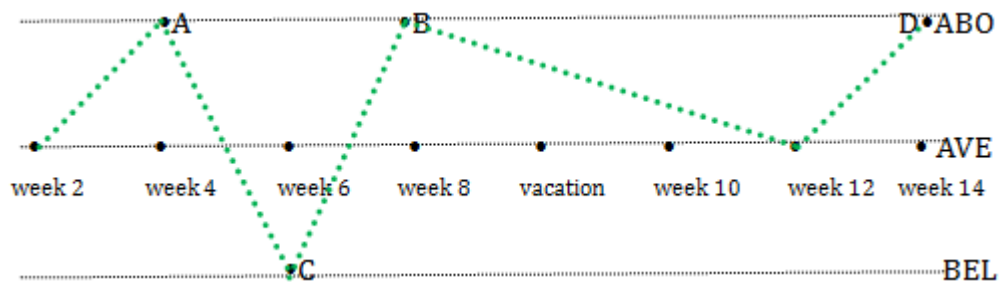


Figure 4.12.1 Peter's Self-reported Vocabulary Performance

The initial condition was 'to study a master degree in Canada' which can be categorised as the attractor state 'Integrative Disposition'. Over the time window of this subsidiary system, three attractor states, namely, 'Autonomy', 'Integrative Disposition' and 'External Incentives' were identified.

- Peter's Self-reported Grammar Performance Trajectory

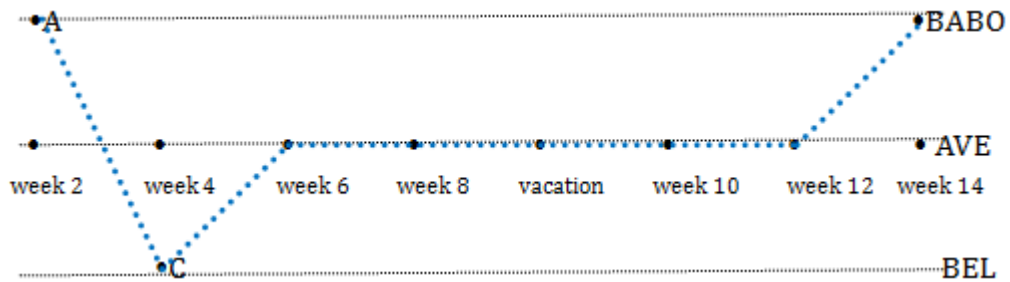


Figure 4.12.2 Peter's Self-reported Grammar Performance

Over the time window of this subsidiary system, two attractor states, namely, 'Self-esteem' and 'External Incentives' were identified.

- Peter's Self-reported Listening and Reading Performance Trajectory

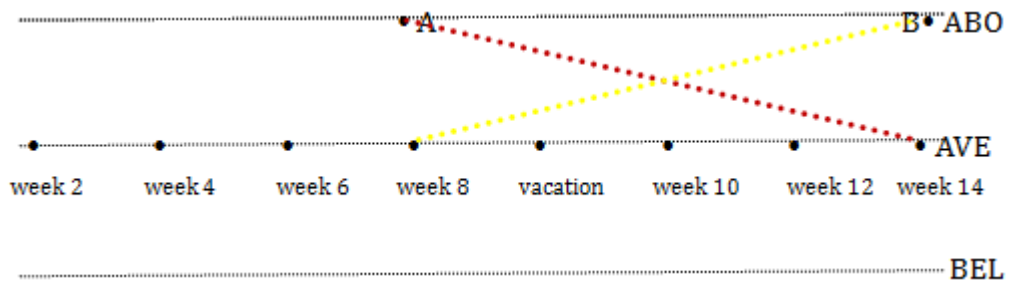


Figure 4.12.3 Peter's Self-reported Listening and Reading Performance

The yellow dashed line referred to Peter's self-reported listening performance whereas the red one referred to his reading aspect. 'Vision' and 'Autonomy' were identified from the responses to both performances.

- Peter's Self-reported Speaking and Writing Performance Trajectory

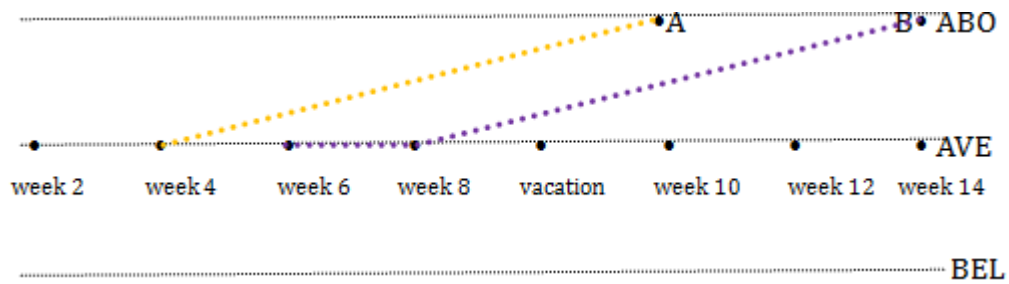


Figure 4.12.4 Peter's Self-reported Speaking and Writing Performance

The orange dashed line referred to Peter's self-reported speaking performance whereas the purple one referred to his writing aspect. 'Vision' was identified from the speaking performances and 'Topic Familiarity' was identified from the writing performances.

#### 4.13.3 Peter's Self-perceived Affective Experiences and Self-reported Performances

Peter was reported as an FL learner with higher perceived English competence. He believed that he belonged to the 'GRE Group'. His self-perceived higher English competence (cognitive factor), self-directed learning and his willingness to emigrate to Canada (motivational factor), and different affective experiences (emotional factor) were operating in the system at the same time. These factors contributed to certain attract states through self-organisation. Different attractor states were reported relevant to different subsidiary systems and would contribute to different learning experiences.

#### **4.14 Sarah's Profile**

Sarah was a self-perceived sociable person. As she reported, she has already inherited shares from his father's company. *'I did not really get the chance to think carefully about my future. Everything seems to be planned well even before I was born, I guess. And to be honest, I really appreciate and enjoy such a life.'* From her responses, she did not care about whether her academic grades were good or not. However, she focused more on the development of her English listening and speaking skills. She reported, *'In nowadays society, every talented leader needs to know English. It is what globalisation requires.'* She went to the English corner a lot to increase her chance to speak to foreigners in order to improve her speaking skills.

##### **4.14.1 Sarah's Affective Experiences**

Eight emotions were identified from Sarah's responses. They were *anxiety, apathy, contentment, expectation, happiness, relaxation, resignation* and *stress*. The different combinations of these emotions were categorised into seven salient affective patterns. Patterns (e) to (g) were identified relevant to her self-reported average performance. From her responses, these patterns were not as important as the facilitative or debilitating ones.

*(a) Higher Level Positive Affective Pattern*

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

*(c) Higher Level Negative Affective Pattern*

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

*(e) Lower Level Negative Affective Pattern*

*(f) Medium Level Positive Affective Pattern*

*(g) Medium Level Positive and Negative Affective Pattern*

#### **4.14.1.1 Perceived Facilitative Affective Experiences**

One pattern (a, outlined below) were identified as more facilitative for Sarah's performance.

*(a) Higher Level Positive Affective Pattern*

Sarah reported four higher level positive emotions, namely, *relaxation, happiness, expectation* and *contentment*. The different combinations of these emotions related to her good vocabulary performance in regular exams in week 4 and good writing performance in week 6 and speaking performance in week 10.

[Extract 1: Interview]

L: How did you feel after you received the feedback from your teacher?

(vocabulary performance, week 4)

Sarah: I think that I have performed **very well** in the exam, especially the vocabulary section. I was **really satisfied with** my performance and I thought that the teacher's feedback met my expectation. I have ticked the answers quickly and felt **very happy** during the exam.

*(contentment –happiness)*

#### **4.14.1.2 Perceived Debilitative Affective Experiences**

Three patterns (b, c & d, outlined below) could be elicited as more debilitative for Sarah's performance.

##### *(b) Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

Sarah reported two lower level positive emotions, namely *relaxation* and *expectation*; and three lower level negative emotions, namely, *stress*, *apathy* and *resignation*. The different combinations of these emotions appeared to have negatively affected good or average grammar performance in week 12 and writing performance in week 14.

[Extract 2: Interview]

L: How did you feel after you received the feedback from your teacher?

(grammar performance, week 12)

Sarah: Well, can I say, **bad** as usual. Well, I am not really skilled in answering the grammar questions. You know, I thought I have read something from a book previously, although I did not remember which book. The author argued that there was not such a thing called grammar. I thought it was right. **I did not that much care about** this section in the exam. We both are Chinese and do you think we have learnt a thing called ‘grammar’ when we learnt to speak Chinese? So maybe because I did not care about it, I felt **a bit relaxed** during the exam.

*(apathy –relaxation)*

*(c) Higher Level Negative Affective Pattern*

Sarah reported that two higher level negative emotions, namely, *stress* and *anxiety* appeared to have negatively affected good or average vocabulary performance in week 12 and listening performance in week 8.

[Extract 3: Diary]

Sarah: I think my listening performance (researcher’s note: week 8) was **not good at all**. I did pay attention to improve my English listening proficiency. However, the listening section was too fast. I felt **really stressful** to finish the task and **too anxious to** clear up my mind to answer the questions in the following sections.

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

Sarah reported that two higher level negative emotions, namely, *stress* and *anxiety* together with one lower level positive emotion *relaxation* appeared to have negatively affected good or average grammar performance in week 2.

[Extract 4: Diary]

Sarah: My performance (researcher's note: grammar performance, week 2) was **not good at all**. I see no point from these grammar questions and really doubt whether people would gain something from it. I felt really **anxious and stressful** and maybe **a bit relaxed**. I admitted maybe this was strange.

#### **4.14.2 Sarah's Self-reported Performance**

##### **4.14.2.1 Identified Attractor States**

Altogether five attractor states were identified. They were 'Integrative Disposition' which contained two components of 'Desired Level of L2 Competence' and 'Personal Goals'; 'External Incentives' which contained two components of 'Teacher's Appraisal' and 'Peers' Approval'; 'Vision'; 'Topic Familiarity' and 'Amotivation'. The first four attractor states were defined in Alex's profile and the fifth one was defined in Eric's profile.



#### 4.14.2.2 Sarah's Self-reported Performance Trajectory

- Sarah's Self-reported Vocabulary Performance Trajectory

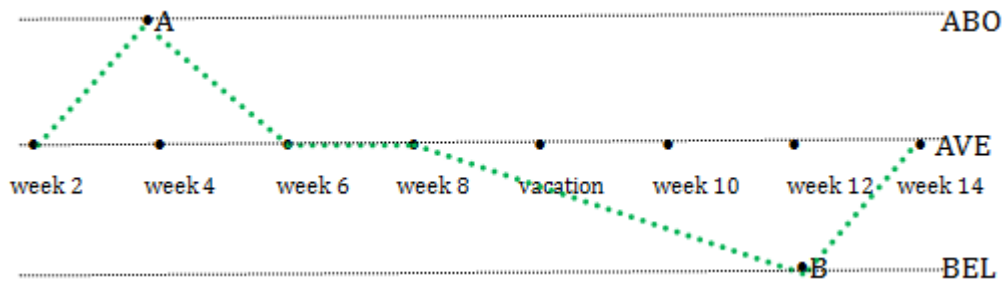


Figure 4.13.1 Sarah's Self-reported Vocabulary Performance

The initial condition was identified as having '*inherited shares of his father's*' and '*did not really get the chance to think carefully about my future*', which can be categorised as the attractors state of 'Integrative Disposition' and 'Amotivation'. Over the time window of this subsidiary system, two attractors, namely, 'Integrative Disposition' and 'Amotivation' were identified.

- Sarah's Self-reported Grammar Performance Trajectory

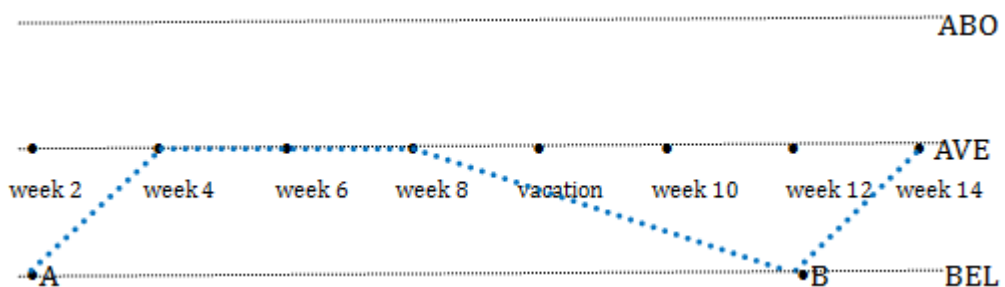


Figure 4.13.2 Sarah's Self-reported Grammar Performance

Two attractors 'External Incentive (Teacher's Appraisal; Peers' Influence)' and 'Vision' were identified.

- Sarah’s Self-reported Listening and Reading Performance Trajectory

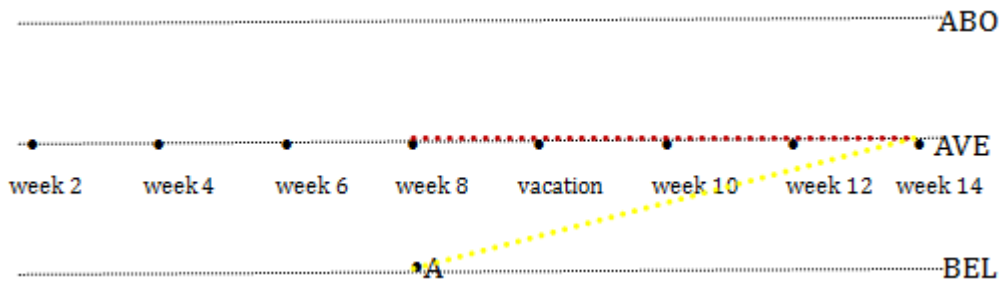


Figure 4.13.3 Sarah’s Self-reported Listening and Reading Performance

The yellow dashed line referred to Sarah’s self-reported listening performance whereas the red one referred to her reading aspect. ‘Vision’ was identified from the listening performances and ‘Amotivation’ was identified from the reading performances.

- Sarah’s Self-reported Speaking and Writing Performance Trajectory

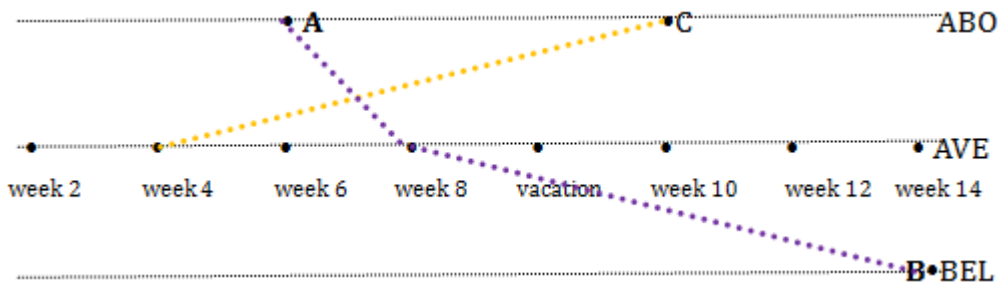


Figure 4.13.4 Sarah’s Self-reported Speaking and Writing Performance

The orange dashed line referred to Sarah’s self-reported speaking performance whereas the purple one referred to her writing aspect. ‘Vision’ was identified from the speaking performances and ‘Topic Familiarity’ was identified from the writing performances.

#### **4.14.3 Sarah's Self-perceived Affective Experiences and Self-reported Performances**

Sarah was reported as an FL learner with lower perceived English competence. She believed that he belonged to the '*Civil Service Exam Group*'. Her self-perceived lower English competence (cognitive factor), different types of intentions to improve her different aspects of English (motivational factor), and different affective experiences (emotional factor) were operating in the system at the same time. These factors contributed to certain attract states through self-organisation. Different attractor states were reported relevant to different subsidiary systems and would contribute to different learning experiences.

#### **4.15 Summary**

In this chapter, I described the participants' profiles on an individual basis. To sum up, **Alex** was reported as an FL learner with higher perceived English competence. He belonged to the '*Civil Service Exam Group*' and hoped to be nominated as an MA candidate in the same university. His ambivalent affective experiences revealed his desire to reduce the discrepancy between his actual self and his ideal self. Similarly, **Bruce** and **Nancy** also reported negative emotions toward the teacher's feedback and some expectations to their upcoming exams simultaneously. A combination of both positive and negative emotions revealed above three learners' desires to the creation of their ideal L2 selves. Both Bruce and Nancy were reported as FL learners with higher perceived English competence and belonged to the '*Civil Service Exam Group*'. In particular, two periodic attractor states between '*Self-discrepancy*' and '*Autonomy*' were

identified moving back and forth and significantly related to Bruce's self-reported grammar performances.

**Amber** was reported as an FL learner with higher perceived English competence and belonged to the 'Civil Service Exam Group'. She had a strong vision of becoming a partner in a law firm. She was a self-perceived humble student and she had very unique study plans. **Cindy** was reported as an FL learner with higher perceived English competence and belonged to the 'Civil Service Exam Group'. She was a self-perceived shy person. She felt really stressful to attend English oral competitions. Her self-reported speaking performances were below average.

**Fiona** was reported as an FL learner with higher perceived English competence and belonged to the 'GRE Group'. Unlike most of the participants, Fiona provided more information on her average performances than others. In addition, her self-esteem was reported coming from the external affirmatives from her parents. She reported that her family wanted to emigrate to European countries. Similarly, **Peter** was reported as an FL learner with higher perceived English competence and belonged to the 'GRE Group'. He wanted to emigrate to Canada according to the Ontario Masters Graduates Scheme. The emotion of 'interest' was only identified from Fiona's and Peter's profiles.

**Louis** was a self-perceived sociable person and believed in the Doctrine of the Mean. He was reported as an FL learner with lower perceived English competence and belonged to the 'Civil Service Exam Group'. A closed loop of periodic movement between the attractor states was identified from his

vocabulary performance subsystem (Section 4.9, p 249). Similarly, **Sarah** was a self-perceived sociable person and had inherited shares from her father's company. She was reported as an FL learner with lower perceived English competence and belonged to the 'Civil Service Exam Group'. She particularly focused on the development of her English listening and speaking skills.

**Eric** was reported as an FL learner with lower perceived English competence and belonged to the 'Civil Service Exam Group'. His affective experiences over time were exclusive to himself, because it displayed two different types of affective profiles, before and after the vacation. Eric's changes reflected 'a restructuring of the attractor basin relevant to the particular person' (Chan, 2014, p. 185). Such a shift to another learner type was considered as 'an evolution of a dynamic system' (Byrne & Callaghan, 2014, p. 59). **Lucy** was reported as an FL learner with lower perceived English competence and belonged to the 'Civil Service Exam Group'. She had a strong career vision of becoming an office lady in a Japanese firm. She reported that she spent much of the time on Japanese learning. **Mary** was reported as an FL learner with higher perceived English competence and belonged to the 'GRE Group'. No below average self-reported performance was found from her profile.

## **Chapter Five Discussion and Conclusion**

### **5.1 Introduction**

Having presented the outcomes of the 12 case studies in the previous chapter, I will now move on to summarise the main findings of the studies, and attempt to develop some answers to the original research questions. In addition, I will discuss the interplay between the identified affective patterns, attractor states and self-reported performances. This chapter will be structured as follows: First, I will elaborate the *Self-organising Capacity* across different affective patterns and different individuals. In addition, I will focus particularly on an illustration of *Self-organisation, Emotional Ambivalence* and *Feedback*. Second, I will compare the attractor states with a wider literature on what were termed as ‘variables’ in the traditional research. Therefore, the readers may have a broader view of ‘specific system behaviours’ through the lens of DST (MacIntyre *et. al.*, 2014, p. 422). Furthermore, such comparisons also aim to categorise the conceptions of a phenomenon at a *collective* level (Sandberg, 2000). Third, a three-layer model *the Dynamic Model of Foreign Language Development* is proposed to illustrate a novel way of understanding the relationship between the learners’ self-perceived affective experiences and their self-evaluations. Fourth, I will illustrate the research implications, pedagogical implications, limitations and future research agenda and finally summarise the conclusions of this study.

### **5.2 The Self-organising Capacity of Affective Patterns**

#### **5.2.1 Self-organising Capacity**

Dörnyei (2009) argued that a key concept related to DST was self-organising capacity. Similarly, Strogatz (2003) argued that self-organisation was a central process in DST that researchers often considered when identifying salient patterns of system behaviours. Self-organising capacity referred to ‘the spontaneous formation of patterns and pattern change in open, nonequilibrium systems’ (Kelso, 1995, p. xi). Self-organisation was employed to explain how fluid, transient and nonlinear development can finally research relatively stable patterns, skills and schemas over time (Dörnyei, 2009). ‘Even very complex systems tend to arrive at certain salient outcomes, and although we cannot predict in advance what these outcomes might be, when we see them we recognise them’ (Dörnyei 2014, p. 85). This argument can be linked to Waninge *et. al.* (2014) who suggested that although theoretically, there could be endless possible patterns for a dynamic system; in reality, only a limited number of outcomes would be identified due to the self-organising capacity.

### **5.2.2 A Summary of Affective Patterns**

The dynamic system behaviours were researchable and they displayed limited numbers of components due to the self-organising capacity (Dörnyei, 2014). The findings from this study appear to validate this argument. To be specific, a free response measurement of emotions (Geneva Affect Label Coder) was employed to gather the 12 participants’ affective experiences. The participants were allowed to report their affective experiences freely. No restrictions on the number of emotions were predetermined. Unlike other research tools, for example, the Geneva Emotion Wheel (GEW) which was established with 20 predetermined emotions (Scherer *et. al.*, 2013); the participants in this study were completely

open to report their emotions. As Scherer (2005) suggested, there was probably no answer to the question ‘How many emotions are there?’ In order to facilitate their examination of emotions, ‘researchers generally sort free responses into a more limited number of emotion categories, using notions of family resemblances and synonyms’ (Scherer 2005, p. 713).

In this study, the Affective Codes (Appendix 4.3) which contained 35 emotions with both English and Chinese versions appeared to be sufficient to sort out the participants’ free affective responses. Regarding the self-organising capacity, within the cases, the reported number of emotions ranged from 6 (Lucy & Nancy) to 10 (Fiona) and the number of affective patterns ranged from 6 (Fiona & Peter) to 9 (Bruce). Although the participants were asked to report their emotions freely, only a limited number of emotions and a limited number of affective patterns were identified.

To sum up, across the cases, altogether 22 emotions were reported by the 12 participants, namely, *admiration, anxiety, apathy, boredom, compassion, confidence, contempt, contentment, disappointment, dissatisfaction, enjoyment, expectation, fear, gratitude, happiness, humility, interest, jealousy, pride, relaxation, resignation, and stress*. These emotions interacted with each other at different intensities (high, medium, low) and appeared to coalesce into a number of combinations. As a result, six affective patterns were reported from the 12 participants to be debilitating and relating to poorer performances than participants’ perceived English proficiency would have suggested. The patterns were as follows:



- *Lower Level Negative Affective Pattern*
- *Higher Level Negative Affective Pattern*
- *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*
- *Mixed Lower Level Negative and Higher Level Negative Affective Pattern*
- *Mixed Higher Level Negative and Lower Level Positive Affective Pattern*
- *Mixed Lower Level Negative, Higher Level Negative and Lower Level Positive Affective Pattern*

Nine affective patterns were reported from the 12 participants relating to participants' perceived average performances. The patterns were as follows:

- *Lower Level Negative Affective Pattern*
- *Higher Level Negative Affective Pattern*
- *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*
- *Mixed Lower Level Negative and Higher Level Positive Affective Pattern*
- *Medium Level Positive Affective Pattern*
- *Medium Level Negative Affective Pattern*
- *Medium Level Positive and Medium Level Negative Affective Pattern*
- *Mixed Higher Level Negative and Higher Level Positive Affective Pattern*
- *Mixed Higher Level Negative and Lower Level Positive Affective Pattern*

Six affective patterns were reported from the 12 participants to be facilitative and relating to better performances than participants' perceived English proficiency would have suggested. The patterns were as follows:

- *Higher Level Positive Affective Pattern*
- *Lower Level Negative Affective Pattern*
- *Higher Level Negative Affective Pattern*
- *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*
- *Mixed Lower Level Negative and Higher Level Positive Affective Pattern*
- *Mixed Higher Level Negative and Higher Level Positive Affective Pattern*

As can be identified above, three affective patterns related to all three types of self-reported performances, namely, above average performance, average performance and below average performance.

- *Lower Level Negative Affective Pattern*
- *Higher Level Negative Affective Pattern*
- *Mixed Lower Level Negative and Lower Level Positive Affective Pattern*

In addition, there were some patterns relating to only one type of self-reported performance. Patterns that only related to above average performance were presented as follows:

- *Higher Level Positive Affective Pattern*

Patterns that only related to average performance were presented as follows:

- *Medium Level Positive Affective Pattern*
- *Medium Level Negative Affective Pattern*
- *Medium Level Positive and Medium Level Negative Affective Pattern*

Patterns that only related to below average performance were presented as follows:

- *Mixed Lower Level Negative and Higher Level Negative Affective Pattern*
- *Mixed Lower Level Negative, Higher Level Negative and Lower Level Positive Affective Pattern*

### **5.2.3 Emotional Ambivalence**

From the general psychology context, it was not novel to identify affective patterns. Izard *et. al.* (2000) examined the self-organisation of emotion patterns and the individual differences arguing that an individual may respond to many situations with multiple emotions. This argument can be linked to the Geneva Emotion Wheel (GEW) which allowed researchers to identify several simultaneous emotions with different intensities.

From the above summary of the affective patterns that were identified from the 12 cases, it was clear that all patterns can be simply categorised into three broader and more general patterns: patterns with positive emotions only; patterns with negative emotions only; and patterns with both positive and negative emotions. For example, the broader pattern with negative emotions only included

*'Higher Level Negative Affective Pattern'*, *'Medium Level Negative Affective Pattern'*, and *'Lower Level Negative Affective Pattern'*. Emotions within the pattern can 'interact freely and influence each other reciprocally' (Izard *et. al.* 2000, p. 18-19). Furthermore, Izard *et. al.* (2000) argued that each emotion had its self-moderating abilities and could attenuate or amplify other emotions within the same pattern. In their vision, the identified simultaneous emotions and affective patterns were 'unique to the person and situation' (Izard *et. al.* 2000, p. 19). Findings will be compared across the cases in section 5.3 below.

In addition, the patterns with both positive and negative emotions were identified from all participants' responses. Such patterns may be termed as **Emotional Ambivalence** (Meyerson & Scully, 1995; Pratt & Doucet, 2000; Fong, 2003 & 2006). Emotional ambivalence was defined as 'the simultaneous experience of positive and negative emotions regarding an object, event or idea' (Fong 2003, p. 2). Furthermore, Fong (2006) argued that an individual can experience both happiness and sadness at the same time in natural settings. Similarly, Larsen and McGraw (2014) defined emotional ambivalence as 'the co-occurrence of positive and negative affects' (p. 263).

In the SLA/FLA area, emotional ambivalence was also noted by several researchers (MacIntyre, 2007; MacIntyre & Gregersen, 2012). MacIntyre and Gregersen (2012) claimed that conflicting emotional states reflected 'a complex, underlying motivational process ... [researchers could] discuss interesting moments of approach and avoidance, to capture in theory the tensions experienced by learners so that pedagogy can actively deal with the issues raised by affective reactions' (p. 199).

#### 5.2.4 Feedback

As can be seen in the findings, even from the same affective pattern, the activated emotions may be different. For example, in the '*Mixed Lower Level Negative and Lower Level Negative Affective Pattern*', Alex reported this as an *apathy – expectation – confidence pattern* with reference to his performance in the listening aspect in week 14; whereas Amber reported this as a *dissatisfaction-humility-confidence pattern* with reference to her performance in the listening aspect in week 12. This finding can be linked to Izard *et. al.*'s (2000) argument that the identified simultaneous emotions and the affective patterns were exclusive to specific individuals and specific contexts.

One of the rationales for such differences related to one crucial component of self-organisation, the Feedback. Feedback was defined as 'the heart of all self-organisation, and it plays a role in how a dynamic system moves towards or away from an attractor' (Hiver, 2014). In this study, the 12 participants' affective experiences were examined after they received the feedback from their teacher. The teacher's appraisals were important parts of their perceptions. As Fernandez-Toro and Hurd (2014) argued that the learners' reactions to a tutor's feedback were important parts of their emotional responses. In their vision, different learners would report different emotions to a very similar piece of positive feedback. For example, in their study, one learner reported disappointment whereas the other learner reported excitement toward a similar piece of positive feedback. Positive feedback referred to the affirmation 'that a learner response to an activity is correct' (Ellis 2009, p. 3). Fernandez-Toro and Hurd (2014) argued that an individual's affective response to the feedback depended on their

acceptance of the comment and ‘can only work if the recipient believes that indeed he/she has done well’ (p. 116).

In contrast, Hunt (2001) defined feedback as a means to narrow ‘the gap between the actual and the desired levels of performance’ (p. 173). The participant’s affective experiences differed from one and another. A rationale to such a difference related to the L2 Motivational Self System (Dörnyei, 2005, 2009a). This system consisted of three components, namely, ‘the Ideal L2 Self’, ‘the Ought-to L2 Self’, and ‘the L2 Learning Experience’ (Dörnyei 2009a, p. 29). The feedback can be categorised into the L2 Learning Experience which concerns the executive motives. The learners’ perceptions of the feedback may reveal their understandings, concerns, interests and needs through learning in different ways (Rudd, 2007).

From the 12 profiles, we could observe that each of them had a different career goal. According to their career goals, they believed that they belonged to different informal groups. Each participant reflected a limited number of emotions and these emotions interacted with different motivational and cognitive factors, different attractor states and different self-reported performances. These findings related to Miyahara’s (2015) recent research, which examined the individuals’ responses to their affective experiences, self-recognitions and motivations from a narrative-oriented approach. Miyahara (2015) employed narrative interviews in a longitudinal qualitative study of six first-year university students in Japan. She attempted to identify the role of their L2 possible selves and their emotional changing. In her vision, only a limited number of learner types can be identified from a group of people. The learners’ affective

experiences, self-recognitions and motivations had an inseparable nature and operated in one dynamic system at the same time (Miyahara, 2015).

### **5.3 Emerging Themes of the Affective Patterns**

#### **5.3.1 Cross-case Comparisons**

In this section, I explained the steps of how I integrated the learners' affective experience profiles and their self-reported performance profiles. Comparisons were made across the cases. Such a comparison and integration included three steps.

First, learners with similar affective experience profiles were extracted. Before such an extraction, all of the 12 learners' affective responses were laid out in one figure. This procedure was completed previously (Section 4.2.4, Figure 4.1.1, p. 164). Figure 4.1.1 enabled me to look at the learners' affective changes over time by identifying the small circle in each column which referred to the presence of an emotion against its intensity.

For example, Fiona's and Peter's affective experience profiles were extracted in Figure 5.3.1. Among the 12 cases, a high degree of similarity was identified between Fiona's and Peter's affective profiles. Figure 5.3.1 included three individual subsidiary figures. If we rotated Figure 5.3.1 on page 305 by 45 degrees, the subsidiary figure on the left hand side referred to their affective responses of their vocabulary performances. For example, three emotions, namely, *confidence*, *expectation*, and *interest* at medium level of intensity were

Context	Patterns	Affects	Fiona	Peter
V2	MP	Confidence Contentment Expectation Interest Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
V4	HP	Confidence Contentment Enjoyment Expectation Happiness Humility Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
V6	HNLP LPLNHN	Anxiety Relaxation Stress Admiration Anxiety Jealousy Stress	<input type="checkbox"/>	<input type="checkbox"/>
V8	HP	Confidence Contentment Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
V12	MP	Confidence Contentment Expectation	<input type="checkbox"/>	<input type="checkbox"/>
V14	HP	Confidence Enjoyment Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
G2	HP	Confidence Expectation Interest	<input type="checkbox"/>	<input type="checkbox"/>
G4	LNLP	Anxiety Confidence Expectation Relaxation Stress	<input type="checkbox"/>	<input type="checkbox"/>
G6	LN LNLP	Anxiety Stress Anxiety Expectation Stress	<input type="checkbox"/>	<input type="checkbox"/>
G8	MP	Confidence Contentment Enjoyment	<input type="checkbox"/>	<input type="checkbox"/>
G12	LNLP	Anxiety Apathy Boredom Confidence Disappointment Dissatisfaction Expectation Happiness Humility Jealousy Relaxation Resignation Stress	<input type="checkbox"/>	<input type="checkbox"/>
G14	LNHP	Anxiety Confidence Expectation Stress	<input type="checkbox"/>	<input type="checkbox"/>
L8	MP	Confidence Contentment Enjoyment Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
L14	HP	Confidence Enjoyment Expectation Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
R8	LNLP	Anxiety Expectation Relaxation	<input type="checkbox"/>	<input type="checkbox"/>
R14	LNLP	Anxiety Apathy Confidence Expectation Relaxation Stress	<input type="checkbox"/>	<input type="checkbox"/>
S4	MP	Enjoyment Expectation Interest	<input type="checkbox"/>	<input type="checkbox"/>
S10	HP	Confidence Contentment Expectation Happiness	<input type="checkbox"/>	<input type="checkbox"/>
W6	LNHP	Anxiety Confidence Stress	<input type="checkbox"/>	<input type="checkbox"/>
W8	LN	Anxiety Boredom Resignation Stress	<input type="checkbox"/>	<input type="checkbox"/>
W14	LNHP	Anxiety Expectation	<input type="checkbox"/>	<input type="checkbox"/>

Figure 5.3.1 Fiona's and Peter's Affective Experience Profiles



identified in the second row. They represented Fiona and Peter affective responses of their vocabulary performances in week 2 (V2). The subsidiary figure in the middle referred to their affective responses of their grammar performances. The subsidiary figure on the right hand side referred to their affective responses of their listening, reading, speaking and writing performances. As can be seen in Figure 5.3.1, these emotions were categorised into different affective patterns (the second column of each subsidiary figure). 19 out of 23 affective patterns were the same, except for four patterns which were relevant to their vocabulary (V6) and grammar (G6) performances in week 6.

To sum up, the 12 learners' affective experience profiles were categorised into seven types. The first type included Alex, Bruce and Nancy whose affective responses were similar. The second type included Amber and Cindy. The third type included Fiona and Peter. The fourth type included Louis and Sarah. Eric, Lucy and Mary each represented a unique affective profile.

Second, learners with similar self-reported performance trajectory profiles were extracted. Before such an extraction, the identification of the learners' self-reported performance trajectories was completed when I summarised the findings of each learner (Chapter Four). All of the 12 learners' self-reported performance trajectories were laid out in one figure for comparison. For example, as can be seen in Figure 5.3.2, Fiona's and Peter's self-reported performance trajectory profiles were exactly the same. To sum up, the 12 learners' self-reported performance trajectory profiles were categorised into seven types. The first type included Alex, Bruce and Nancy whose self-reported

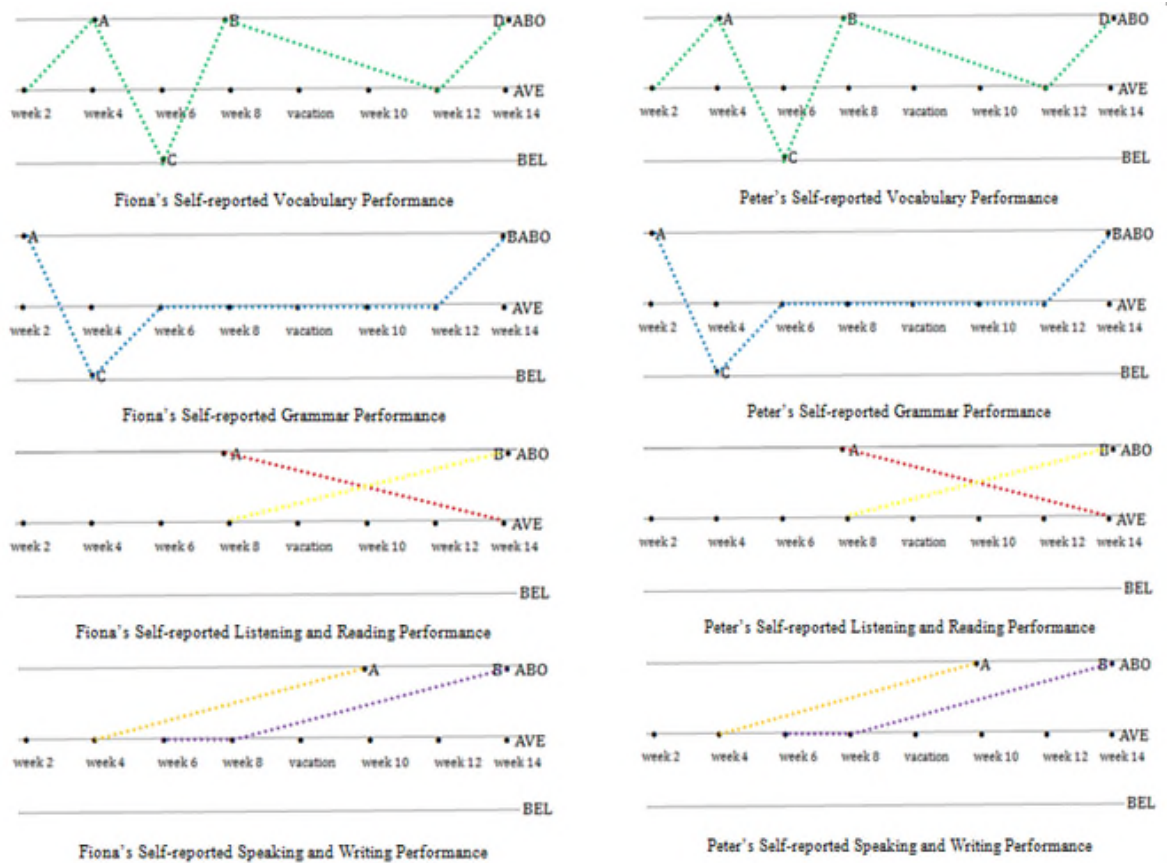


Figure 5.3.2, Fiona's and Peter's Self-reported Performance Trajectory Profiles

performance trajectories were similar. The second type included Amber and Cindy. The third type included Fiona and Peter. The fourth type included Louis and Sarah. Eric, Lucy and Mary each represented a unique profile.

Third, I compared and contrasted the learners' affective experiences and their self-reported performance trajectory. This step aimed to integrate the affective experiences profiles and the self-reported performance trajectory profiles. One important finding was identified. The learners with similar affective experience profiles also had similar self-reported performance trajectory profiles, such as Fiona and Peter (Figure 5.3.1 & Figure 5.3.2). The affective experience profiles

and the self-reported performance trajectory profiles together contributed to a learner type in this particular FL context.

As a consequence, seven learner types were identified from the 12 participants. The first type included Alex, Bruce and Nancy. The second type included Amber and Cindy. The third type included Fiona and Peter. The fourth type included Louis and Sarah. Eric, Lucy and Mary each represented an individual type. This finding can be linked to Dörnyei's (2014) identification of different learner types. In his vision, learner types were predictable. Although in principle, from a class of 30 learners, 30 very different learner types could be identified; actually the number usually rarely exceeded four to six. In the following sections, I will illustrate the seven learner types which were identified via a comparison and integration between the learners' affective experience profiles and their self-reported performance profiles.

### **5.3.2 Alex's, Bruce's and Nancy's Profiles: Anticipatory Emotions**

Alex, Bruce and Nancy reported similar affective patterns and the locations of the emotions were almost the same. However, some of the emotions were still exclusive to a particular learner. For example, *apathy* and *contentment* were exclusive to Alex and *pride* was exclusive to Bruce. All of the three learners reported *anxiety*, *confidence*, *expectation* and *stress*. All of them had the experience of reporting negative emotions toward the feedback, and in the meantime, some *expectations* to their upcoming exams. Such an ambivalent affective pattern can be linked to the notion of anticipatory emotions (Baumgartner *et. al.*, 2008). **Anticipatory emotions** referred to 'a person may

currently experience an emotion due to the prospect of a desirable or undesirable future event (i.e., hope or fear). These affective reactions are anticipatory emotions, because they are currently experienced due to something that could happen in the future' (Baumgartner *et. al.*, 2008, p. 685).

All the three learners exposed their negative affective experiences, whether these constituted feeling anxious, bored, disappointed or apathetic toward the feedback. Such feelings were reported relevant to their actual selves. In addition, they had expectations about and confidence in the future exams, which related to their ideal selves. These ambivalent affective experiences revealed their desire to reduce the discrepancy between their actual selves and their ideal selves (Dörnyei, 2009a), which related to the creation of their ideal L2 selves. Such anticipatory emotions were not only reported by the above three learners, but also reported by some other learners. However, the above three learners reported very similar anticipatory emotions to create their ideal L2 selves and their self-reported performance trajectories were almost the same.

### **5.3.3 Amber's and Cindy's Profiles: Self-perceived Humility without Gratitude *Versus* Self-perceived Shyness without Fear**

From Amber's responses, she was a self-perceived humble student. In contrast, Cindy was a self-perceived shy student. By definition, from the Oxford English Dictionary, 'humility' is defined as 'the quality of being humble or having a lowly opinion of oneself' whereas 'shyness' is defined as 'the condition of being easily frightened away; difficult of approach owing to timidity, caution, or distrust'. From both learners' responses, Amber and Cindy were self-perceived

as two different types of learners and should in principle have had two very different learner profiles. However, both of them reported similar affective patterns and the locations of the emotions were almost the same. Their self-reported performance trajectories were very similar as well.

Amber was a self-perceived humble student. However, from her profile (section 4.3), neither gratitude nor a lowly opinion of herself could be identified. This finding contradicted Kruse *et. al.*'s (2014) argument. In their vision, humility and gratitude were mutually reinforcing. Such an argument can be linked to Wang and Byram (2011) who argued that humility could be defined as a learning style, named 'humble learning', which referred to learning with the sense of being thankful to their teacher.

From Amber's responses, humility was perceived as '*never show off*'. Amber's conception of humility was different from that of the above researchers. Amber's conception of humility was not new. It can be to some extent linked to Carrasquillo's (1994) identification of the humble characteristic of the Chinese learners of English. Carrasquillo (1994) argued that 'Chinese students tend to be reluctant to ask questions in class because such behaviour is viewed as aggressive and disrespectful in their culture. They may not also volunteer answers during class because their culture expects them to be modest and humble' (p. 57). In his vision, being humble referred to not being aggressive or disrespectful. Amber's '*never showing off*' aimed not to be aggressive or disrespectful to her peers. As can be seen from the above illustrations, different groups of people may have different conceptions toward the same phenomenon.

Cindy was a self-perceived shy student. However, the feeling of ‘being nervous’ or ‘being timid’ was not identified from her responses. This finding contradicted Gleason (2013) who argued that shy students were more reluctant to speak because of ‘a fear that if they said something incorrectly, their classmates would judge them’ (p.324-325). Similarly, Kalutskaya *et. al.* (2015) argued that shy students tend to be afraid of speaking out in a group and they simply watch others discuss. In contrast, from Cindy’s responses toward her self-reported speaking performances, she believed that she paid too much attention on other people’s judgements and did not want to be aggressive or impolite. Although Amber and Cindy were self-perceived as two different types of learners; they reported a similar experience of not being willing to be aggressive. This might be the reason why the self-perceived humble student and shy student reported a very similar profile.

#### **5.3.4 Fiona’s and Peter’s Profiles: ‘Interest’ as an Attractor Conglomerate**

Fiona and Peter reported similar affective patterns and the locations of the emotions were almost the same. Their self-reported performance trajectories were very similar as well. The emotion of ‘interest’ was only identified in the above two profiles. In this study, ‘interest’ was defined as an emotion. Although Waninge (2014) argued that ‘interest’ might include expressions such as ‘engaged’, ‘curious’, ‘active’ or ‘enjoyment’, in this study, ‘interest’ and ‘enjoyment’ were considered as two emotions. ‘Interest’ in this study consists of ‘a salient cognitive aspect – the curiosity in and engagement with a specific domain’ (Dörnyei & Ushioda, 2011, p. 93). In contrast, ‘enjoyment’ referred to ‘take delight or pleasure in an activity or occasion’ (Oxford English Dictionary

2015), such as enjoying a cup of tea. In addition, the Chinese translations of the two words were different.

Although ‘interest’ was considered as an emotion in this study, we could not entirely separate the cognitive and motivational factors from it. In their profiles, ‘interest’ was a powerful emotion and operated in a similar way to an attractor conglomerate. This finding can be linked to Waninge (2014) who identified that the cognitive, motivational and emotional factors operated in one attractor basin and contributed to the system outcome, namely, an interest. In the meantime, this emotion was accompanied by the attractor state ‘Self-esteem’ (will be further discussed in section 5.5.4.8).

### **5.3.5 Louis’ and Sarah’s Profiles: Self-perceived Sociable Students with Debilitative Affective Experiences**

Louis and Sarah reported similar affective patterns and the locations of the emotions were almost the same. Their self-reported performance trajectories were very similar as well. They both were self-perceived sociable students and many of their affective experiences were considered as debilitative to their self-reported performances. Although they reported different ‘Visions’ of their futures, their reactions to the feedback and their ought-to L2 selves appeared to be very similar.

Louis believed in ‘*The Doctrine of the Mean*’ and his ‘*Vision*’ of his future was ‘*to find a normal job after graduation*’ and ‘*to hang out with girls*’ and ‘*to find his future wife*’. He reported that a score of pass was enough for him. On the

other hand, Sarah reported that she inherited shares from her father's company. To become a talented leader was her 'Vision' of her future. She did not care about whether her academic grades were good or not. However, she focused more on the development of her English listening and speaking skills. Although both learners reported different 'Visions', their ought-to L2 selves were the same. They both reported that they need a pass degree or at least the avoidance of failed outcomes.

Such a finding can be linked to Dörnyei's (2009a) explanation of the dynamism of the Future Self-guides. In his vision, the Future Self-guides referred to 'a dynamic, forward-pointing conception that can explain how someone is moved from the present toward the future... is the complex interplay of current and imaginative self-identities and its impact on purposive behaviour' (p.11). In other words, different visions of the future selves may not result in different learner types, because their purposive behaviour, such as least the avoidance of failed outcomes may be the same and more important to guide their ways of learning.

### **5.3.6 Eric's, Lucy's and Mary's Profiles**

#### **5.3.6.1 Eric's Profile: External Incentives to Learner Type Shifting**

Eric's affective experience across the timescale was exclusive to himself, because it displayed two different types of affective profiles, before and after the vacation. Before the vacation, his affective profile was governed by the *confidence –relaxation –expectation –enjoyment pattern*; whereas after the vacation, his affective profile was governed by the *apathy –boredom –*



*resignation pattern.* One attractor state, ‘External Incentives (family Issues)’ was reported to be relevant to such a change. As he reported, ‘*I cannot hide the truth from my classmates. My parents were divorced, although I do not want my classmates to know. They will soon find it abnormal if I do not go back home at weekends.*’

This example of an affective state changing across time related to Hiver’s (2014) argument regarding the stability of learner types, that, rather than staying fully static, the dynamic system tends to settle into temporary attractor states. If a learner type can change over time, then the motivational, cognitive and affective factors which significantly related to learner types cannot be fully static. Eric’s changes also reflected ‘a restructuring of the attractor basin relevant to the particular person’ (Chan, 2014, p. 185). Such a shift to another learner type can be considered as ‘an evolution of a dynamic system’ (Byrne & Callaghan, 2014, p. 59).

### **5.3.6.2 Lucy’s Profile: Co-adaptation between the L2 English and L3**

#### **Japanese motivational self-systems**

Lucy’s affective experiences were revealed to be exclusive to her, and shared no similarity with the state space of other profiles. Her uniqueness appeared to rest, at least partially, in her L3 Japanese self-identity. Lucy reported that she was very much into Japanese culture and wished to work for a Japanese corporation in the future. She learnt Japanese language by herself and successfully passed N1 level (the highest level) of JLPT (Japanese-Language Proficiency Test) when she

was still a year-two student. In the meantime, she did not pay too much attention on her English academic scores. A pass was everything to her, as she reported.

Co-adaptation referred to how a dynamic system changed as a result of its interaction with other relevant systems (Larsen-Freeman & Cameron, 2008). This was described by Dörnyei (2009a) as the process of negotiation and adjusting between systems. Henry (2014) identified two important parameters relating to the interaction between L3 and L2 –‘the reward of extra credits for L3 learning and the status of L2 English’ (p. 318). Moreover, Henry (2014) suggested that ‘the L2 ... and L3 ...motivational self-systems will have come into close contact and, through the process of co-adaptation, each will have exerted an influence on the other’ (p. 318), which was very similar to current observation of Lucy. The reward of extra credit for L3 Japanese Learning was a potential guarantee for her to find a job in a Japanese corporation in the future, and the L2 English status was lowered to a pass level, which might trigger the emotion of apathy and boredom.

### **5.3.6.3 Mary’s Profile: Absolute Facilitative Affective Experiences**

Mary was the only person among the 12 participants whose perceived affective experiences only related to self-reported average or above average performances. All her affective experiences were identified as facilitative affective patterns. Her self-perceived higher English competence (cognitive factor), either self-directed learning (‘*Autonomy*’, motivational factor), and different affective experiences (emotional factor) were operating in the system at the same time. These factors contributed to certain attract states through self-organisation. Different attractor

states were reported relevant to different subsidiary systems and would contribute to different learning experiences.

#### 5.4 Positive Effects of Positive Emotions, Positive Effects of Negative Emotions and Negative Effects of Negative Emotions

From the above summary of the affective patterns identified in the 12 cases, it is clear that all patterns can be simply categorised into 3 broader and more general patterns: patterns with positive emotions only; patterns with negative emotions only; and patterns with both positive and negative emotions. In section 5.3, I have elaborated the patterns with both positive and negative emotions, using the concept of emotional ambivalence. In this section, I will elaborate the themes emerging from cross-case comparison, with a specific focus on the patterns with positive emotions only and the patterns with negative emotions only. The relationships between these affective patterns and self-reported performance are as follows:

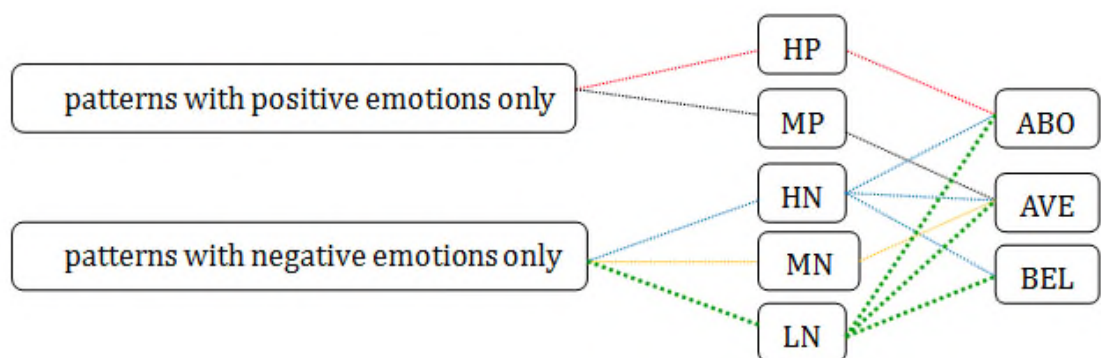


Figure 5.4.1

To be specific, from the 12 cases, altogether two affective patterns, namely, *Higher Level Positive Affective Pattern (HP)* and *Medium Level Positive Affective Pattern (MP)* can be categorised as patterns with positive emotions only. Three affective patterns, namely, *Higher Level Negative Affective Pattern (HN)*, *Medium Level Negative Affective Pattern (MN)* and *Lower Level Negative Affective Pattern (LN)* can be categorised as patterns with negative emotions only. With respect to the relationship between the affective patterns and the self-reported performances, *HP* was only reported as a facilitative pattern that related to the self-reported above average performance (*ABO*). *MP* and *MN* were reported relating to the learners' self-reported average performance (*AVE*). *HN* and *LN* were reported relating to all three types of self-reported performance (*ABO*, *AVE*, *BEL*).

In this study, the positive emotions were considered as facilitative to the learner's self-reported performances. The negative emotions were sometimes reported as facilitative factors; whereas in other times they were reported as debilitating factors. This finding can be linked to López's and Aguilar's (2012) findings regarding FL learners' self-perceived negative emotions as positive for their FL development. In their vision, positive emotions can have either positive or negative effects on learning. Similarly, negative emotions can also have either positive or negative effects on learning. In this study, the negative effects of positive emotions were not identified. Except for this, all other three types of effects were identified.

## 5.5 Attractor States

### 5.5.1 Terminology

In this section, I will compare the attractor states with a wider literature on what are termed as ‘variables’ in the traditional research. Therefore, the readers may have a broader view of ‘specific system behaviours’ through the lens of DST (MacIntyre *et. al.*, 2014, p. 422). Furthermore, such comparisons also aim to categorise the conceptions of a phenomenon at a collective level (Sandberg, 2000).

MacIntyre *et. al.* (2014) argued that the main difficulty in applying DST into FLA research was terminology, because most of the languages were imported from other disciplines, such as physics or mathematics. In their vision, an attractor state was ‘preferred system behaviour, or equilibrium’ that was ‘most likely to settle for some period of time, even taking into account the unpredictable, chaotic elements of system behaviour’ (p. 422).

de Bot (2014) argued that attractor states did not attract like magnets attracted iron balls. In addition, Byrne and Callaghan (2014) argued that an attractor state was very different from a variable, as the term ‘attractor’ was simply used to describe a possible state of a system. The term ‘variable’ as used in the traditional research suggested straightforward linear causation (MacIntyre *et. al.*, 2014); whereas an ‘attractor’ suggested exclusively a system outcome, pattern or state. Furthermore, Dörnyei (2009b) proposed that conglomerates of certain learner characteristics can create salient attractor states. In his vision, the

conglomerates interacted with each other as a whole and resulted in relative system stability on different timescales. In this study, altogether eight attractor states were identified from the 12 cases. Each attractor state was considered as a conglomerate of cognitive, emotional and motivational factors.

In attempting to answer the third and the fourth subsidiary research questions, I will elaborate the cognitive, emotional and motivational factors across different attractor states and different individuals. In this study, the readers might be familiar with the descriptions of the attractor states, as they were widely discussed as ‘variables’ in the traditional research. However, a linear cause –and –effect relationship which ‘variables’ suggest is forbidden. I will theorise how a group of learners perceived these phenomena (attractor states) from their standpoints at a collective level. Section 5.5 will be structured under three headings: *Location of a Conglomerate Research Strategy in DST, Tripartite Framework to Attractor States, and Cognitive, Emotional, Motivational Factors of Each Attractor State.*

### **5.5.2 Location of a Conglomerate Research Strategy in DST**

Dörnyei (2014) argued that ‘we face serious problems when we want to conduct empirical research within a dynamic systems framework’, because ‘dynamic systems research is such a new and uncharted territory that there are simply no tried and tested research methodological templates available’ (p. 83-84). Dörnyei (2014) proposed three research strategies to make it meaningful to research ‘such an inherently erratic phenomenon as a complex dynamic system’. Three proposed research strategies were as follows:

- Focus on identifying strong attractor-governed phenomena

From a DST perspective, strong attractor-governed phenomena refer to ‘stable and predictable phases when the system is governed by strong attractors, resulting in settled, non-dynamic attractor states’ (Dörnyei, 2014, p. 84). In other words, if an attractor state is strong enough to allow people to predict certain behaviours, we could describe that such a situation is governed by this attractor state. For example, if a scholar is giving a speech in a conference hall, normally, we could confidently predict that nobody from the audiences will suddenly stand up and sing *My Heart Will Go On*. The ‘*speech-in-a-conference-hall*’ operates as an attractor state strong enough to govern this situation.

- Focus on identifying typical attractor conglomerates

From a DST perspective, typical attractor conglomerates refer to ‘attractors often form potent constructs or conglomerates to operate in concert --these are sometimes called “attractor basins” --that will create predictable states in the system’s behaviour’ (Dörnyei, 2014, p. 84). In this study, I will analyse the identified attractor states as conglomerates.

- Focus on identifying and analysing typical dynamic outcome patterns

From a DST perspective, typical dynamic outcome patterns refer to ‘the system’s self-organising capacity that aims to increase the orderly nature of the initially transient, fluid and nonlinear system behaviour...complex systems display a few well-recognisable outcomes or behavioural patterns rather than the unlimited

variation that we could, in theory, anticipate in an erratic system' (Dörnyei, 2014, p. 84-85).

Empirical studies were conducted by different researchers, aiming to study the attractor states as conglomerates of different factors in SLA/FLA (Waninge, 2014; Mercer, 2014; Chan *et. al.*, 2014; Henry, 2014). In this study, altogether eight attractor states were identified from the 12 cases, namely, 'Integrative Disposition', 'External Incentives', 'Topic Familiarity', 'Amotivation', 'Autonomy', 'Vision', 'Self-discrepancy' and 'Self-esteem'. I will analyse these attractor states as conglomerates (the second strategy) and outline their attractor basins by theorising the 12 learners' cognitive, motivational and emotional factors at a collective level.

### **5.5.3 Tripartite Framework to Attractor States**

Scherer (1995) described the relationship between cognition, emotion, and motivation by explaining Plato's trilogy of mind. The ancient Greek philosopher Plato proposed three components of the human soul, namely, cognition, affection, and conation. Plato's tripartite classification of mental activities was still useful in 'the assessment of contemporary emphases in psychology' (Hilgard, 1980, p. 107). However, Plato's trilogy of mind has raised several political points which are not relevant to this study. Plato's 'Cognition' refers to rational judgment and people from the ruling classes such as kings or statesmen will possess this component of the soul. Plato's 'Affection' refers to 'spirited higher ideal emotions' (paraphrased by Scherer, 1995, Appendix) and people from the warrior classes such as soldiers or policemen will possess this component of the



soul. Plato's 'Conation' refers to 'multitude of clamant and conflicting appetites for particular gratifications' (paraphrased by Scherer, 1995, Appendix) and people from the lower classes such as workers or slaves will possess this component of the soul. On the other hand, Scherer (1995) paraphrased that the term 'affection' paralleled the classification of 'emotion' and the term 'conation' paralleled the classification of 'motivation'.

In the SL/FL area, this tripartite framework was highlighted by Dörnyei (2009) who argued that to classify mental functioning into three components, namely, cognition, emotion and motivation had the potential strength to reframe SL learners' Individual Differences (ID) as dynamic systems. In addition, Dörnyei and Ryan (2015) argued that the three subsystems, namely, cognition, emotion and motivation had continuous interaction with each other and could not be isolated from one and another. This argument can be linked to Buck (2005) who argued that 'in their fully articulated forms, emotions imply cognitions imply motives imply emotions, and so on' (p. 198).

Waninge (2014) applied this tripartite framework to identify the attractor states from cognitive, emotional and motivational factors. Waninge's (2014) findings showed that although the above three factors could be approached separately, the inseparable nature of these factors was revealed in the learners' responses. The tripartite framework was a meaningful research strategy (Dörnyei, 2014) to identify typical attractor conglomerates. In this study, eight attractor states were compared under the tripartite framework across the cases. The participants' self-perceived English competence and their 'evaluations of the affordances of their personal circumstances' (Dörnyei 2010, p.258) were linked to the cognitive

factor. Their desires, goals, expectations were linked to the motivational factors and the identified affective patterns were linked to the emotional factors.

#### **5.5.4 Cognitive, Emotional, Motivational Factors of Each Attractor State**

In the following sections, each attractor state was compared across the 12 cases and I outlined its attractor basin by theorising the cognitive, emotional and motivational forces. First, by outlining the attractor state's cognitive factor, the comparison focused on the 'self-appraisal of the level of the individual's skills and competence involved in the activity' (Dörnyei & Ushioda, 2013, p. 95). Second, by outlining the attractor state's emotional factor, the comparison focused on the intensity, duration and types of emotions within the same affective pattern. Third, by outlining the attractor state's motivational factor, the comparison focused on the motivational construct and its service of integrating cognitions (self-appraisal cognitive trajectory of the performances) and emotions (affective patterns).

##### **5.5.4.1 Integrative Disposition**

'Integrative Disposition' was initially proposed by Ushioda (2001). It consisted of three factors, namely, 'Personal Goals', 'Desired Levels of L2 Competence', and 'Positive Feelings about the L2 Speaking Community' (Ushioda, 2001). In a later stage, Dörnyei's (2009) suggested that 'the Ideal L2 Self' *which* was a component of the L2 Motivational Self System paralleled the 'Integrative Disposition'. Dörnyei (2010) provided a reason to support this argument. In his vision, 'if our ideal self is associated with the mastery of an L2, that is, if the

person that we would like to become is proficient in the L2, we can be described ... as having an integrative disposition' (p. 78). In other words, Dörnyei (2010) reconceptualised the traditional term of integrative motivation from a self perspective. He further conducted a survey research involving over 5,300 participants to examine his hypothesis and drew a conclusion that the results from the study 'leave no doubt that the two concepts [integrative disposition and the ideal L2 self] are very closely related' (p. 80).

#### **5.5.4.1.1 Cognitive Factors**

Across the 12 cases, the attractor state, 'Integrative Disposition', was identified from all 12 profiles, with respect to their vocabulary cognitive trajectories. 'Integrative Disposition' which was reported to subsume the factors of 'Personal Goals', 'Desired Levels of L2 Competence', only related to the students' self-reported vocabulary performances. From a cognitive perspective, the participants' goals and self-appraisal levels of their English vocabulary competence varied. All participants' goals were categorised into three groups: to study a master degree in China, to study a master degree abroad, and to go for a job directly. Their self-appraisal levels of their English vocabulary competence varied from good, average and bad.

One important pattern was identified. All self-reported above average English vocabulary performances related to the learners' personal goals of studying a master degree in the future, either in China or abroad; whereas average and bad self-reported vocabulary performances related to goals of looking for jobs after graduation. In addition, the participants' self-reported English proficiency (the

cognitive factor) positively correlated to this attractor state, ‘Integrative Disposition’. In other words, a lower self-reported English proficiency was identified relevant to a lower ‘Desired Level of L2 Competence’; whereas a higher self-reported English proficiency was identified relevant to a higher ‘Desired Level of L2 Competence’. However, it should be noted here that this pattern was exclusive to these 12 participants only and no claim should be made that other learners will respond in similar ways.

In addition, ‘Integrative Disposition’ was the theme identified from all of the participants’ self-reported vocabulary performances in week 2 and 4. This attractor state was identified as governing the participants’ vocabulary learning in the first month. In addition, this attractor state was also identified as the initial condition for the 12 participants.

#### **5.5.4.1.2 Emotional Factors**

Two affective patterns were identified relevant to this attractor state. They were patterns with positive emotions only and patterns with both positive and negative emotions. Regarding the patterns with positive emotions only, the types of emotions included *enjoyment*, *happiness*, *interest* and *contentment*. Similarly, Waninge (2014) also argued that the positive emotions such as engagement, enjoyment or interest were usually accompanied by the L2 learners’ integrativeness. On the other hand, regarding the patterns with ambivalent emotions, the intensity of positive emotions was usually reported higher than that of the negative ones. For example, Mary reported apathy at a lower level and confidence at a higher level in week 2. Only one exceptional case was identified

from the 12 cases. Sarah reported a *stress –anxiety pattern* in week 12. Both emotions were reported with higher intensities.

#### **5.5.4.1.3 Motivational Factors**

From a motivational perspective, ‘Integrative Disposition’ strongly related to ‘Integrative Motivation’ (Gardner, 1985). Integrative motivation referred to learners who were motivated to study a particular language with a personal affinity for the people who speak that language (Gardner & Lambert, 1972). Similarly, Dörnyei (2010) argued that integrative motivation referred to ‘the desire to learn an L2 of a valued community so that one can communicate with members of the community and sometimes even to become like them’ (p. 74). The component ‘Personal Goals’, from ‘Integrative Disposition’ was identified as being relevant to the integrative motivation. To be specific, three participants, namely, Fiona, Mary and Peter reported that they wanted to study abroad in the future and wanted to emigrate to other countries. They reported that they wished to communicate with people from abroad. Such motivations related to the learners’ positive or ambivalent emotions and their self-reported vocabulary proficiency. Such an inseparable nature between cognition, emotion and motivation was also identified by other researchers (Dai & Sternberg, 2004).

#### **5.5.4.2 External Incentives**

‘External Incentives’ was sometimes categorised under contextual factors (Ushioda, 2009, 2014). Many empirical studies investigated the relationship between the ‘External Incentives’ (from the teachers, peers or family) and the

learners' performances in an SL/FL classroom. In addition, 'External Incentives' was identified as a powerful attractor state. This finding can be linked to Dörnyei's and Ushioda's (2011) argument that incentives could act as potentially powerful attractor states to affect learner's performances. Furthermore, this attractor state was identified as a mediation to facilitate the interaction between the learners' self-perceived affective experiences and their self-reported performances.

#### **5.5.4.2.1 Cognitive Factors**

Across the 12 cases, the attractor state, 'External Incentives' was identified from all 12 profiles. 'External Incentives' which were reported to subsume the components of 'Teacher's Appraisal', 'Family's Influence' and 'Peers' Approval'.

One salient pattern was identified. From the participants' self-reported grammar performances, the relationship between 'External Incentives' and the participants' self-perceived English competence was a one-way influence. Positive 'External Incentives' increased the perceived level of the participant's English competence, whereas negative 'External Incentives' decreased that of the participant. In contrast, the fluctuation in the participant's self-perceived English competence was not reported as affecting 'External Incentives'. For example, Bruce's perceived English competence was not stable. His perceived English competence shifted from being perceived '*very confident English learner with excellent English competence*' in vocabulary and grammar aspect (week 1), to '*being self-doubted*' and perceived '*normal level of English competence*' (week 6), to '*regaining confidence again*' after he finished reciting the book *Successful You*

*Vocabulary 12000* (week 12). Such a fluctuation was not identified as affecting 'External Incentives'. In the meantime, regarding other aspects of English, such as vocabulary or speaking aspect, no stable outcome was identified.

This finding was similar to some results from other studies (e.g. Mouratdis *et. al.*, 2008; Thomas & Barron 2006). Mouratdis *et. al.*'s (2008) research indicated that the relationship between 'External Incentives' and the participant's self-appraised competence was more complicated than a single cause-effect relation. It depended on many factors, for example, the level of the incentive (strong, mild or weak); the learning environment and the students' acceptance of the incentives. Similarly, Lai and Ting (2013) argued that significant others' influence (including parents, teachers and peers) on the learners' perceived English proficiency and performance was dynamic. Similar incentives could be perceived as either positive or negative by different individuals, due to the differences in curriculum, exams, and classroom atmosphere.

#### **5.5.4.2.2 Emotional Factors**

With respect to this attractor state, the identified affective patterns largely varied from one and another. This can be linked to Waninge (2014) who argued that the nature of the participants' reported affective factors were difficult to define.

Within emotionally ambivalent patterns, negative emotions were more likely to be reported at a lower intensity and to relate to average or above average self-reported performances. In addition, in affective patterns related to patterns with negative emotions only, patterns with lower intensity, were more likely to be

reported associating with average or above average performances. This can be linked to the research of López and Cárdenas (2014) who argued that, sometimes, FL learners were able successfully to turn negative emotions into positive energy. However, López' and Cárdenas' (2014) study did not focus on an evaluation of the intensity of the emotions. In this study, negative patterns with higher intensity were more likely to be reported as debilitating to the learners' performances.

#### **5.5.4.2.3 Motivational Factors**

From a motivational perspective, 'External Incentives' was complex and could not be defined as a cause or an outcome. Similarly, Lai and Ting (2013) argued that the influence from family members, peers and teachers on the student's motivation can be positive, negative or both positive and negative. In their vision, motivation was considered as 'a dynamic and constantly changing process that various factors influence; it cannot be considered a stable construct' (Lai & Ting, 2013, p. 16).

Another motivational factor was identified as being related to 'External Incentives'. The participants' long-term goals were not reported as changing, no matter what the external incentives from the teachers, families or peers were. In contrast, this attractor state was identified as more likely to affect the participants' short-term goals. Only one student from the 12 (Eric) reported how his family issues affected his emotions, goals and performances. Eric reported that his parents divorced during the vacation, and his motivation to learn, to use English, to participate in social activities decreased. As Eric reported, before the vacation, he was a self-perceived highly motivated and sociable student; whereas after the



vacation, he was a self-perceived amotivated student with emotions of *resignation, boredom* and *apathy*. However, such significant change of his family, although it changed his short-term motivation of behaving and learning, did not appear to have changed his long-term goal of looking for a job after graduation, or his group recognition of belonging to the '*Civil Service Exam Group*'. This motivational factor will also be further discussed together with the attractor state 'Vision' in Section 5.5.4.6.

### **5.5.4.3 Topic Familiarity**

'Topic Familiarity' was defined as 'the amount of direct and explicit knowledge a writer presumably has in relation to a topic, with knowledge built from different kinds of experience such as personally physically experiencing or observing something, conversing and thinking about something, and obtaining information about something from other people or knowledge sources' (Yang, 2014, p. 10). In this study, one salient outcome was identified from the cross-case comparisons. Except for Fiona, all the other 11 participants' responses suggested that '*Topic Familiarity*' was a powerful attractor state that governed their writing performances.

#### **5.5.4.3.1 Cognitive Factors**

Across the 12 cases, the attractor state, 'Topic Familiarity', was identified from 11 profiles (except for Fiona's profile). 'Topic Familiarity' which was identified as subsuming three components, namely, 'Personal Familiar Topics', 'Impersonal Familiar Topics' and 'Impersonal-less Familiar Topics'. This

attractor state was reported relating to most of the learners' self-reported writing performances. For example, Mary believed that her writing performances met her perceived English proficiency would have suggested. Her performances largely depended on her familiarity to the writing topics during the exams. This identification can be linked to many traditional studies that aimed to testify the linear relationship between 'Topic Familiarity' and FL performances (e.g. Pulido, 2007; Hayati, 2009).

At a collective level, 'Topic Familiarity' was described as subsuming the above three components. This finding can be linked to Yang (2014) who examined a group of learners' cognitive complexity. In Yang's vision, 'Topic Familiarity' consisted of three components, namely, 'Personal Familiar Topics', 'Impersonal Familiar Topics' and 'Impersonal-less Familiar Topics'. Personal familiar topic referred to the writing topic in week 5 in this study. The learners were asked to describe a situation on how their parents have encouraged them to overcome some difficulties in week 5. On the other hand, in week 8, the writing topic focused on the Xinghai Park in Dalian. Impersonal familiarity was identified from some of the Dalian local participants; whereas impersonal-less familiarity was identified from participants who were born in cities other than Dalian.

In addition, in this study, instead of mapping the learners' real test scores with different cognitive layers, I studied the learners' self-reported performances and their perceived English proficiencies. Although the learners reported a similar level of familiarity to the same topic, their self-reported performances were very different (e.g. Eric and Lucy, week 8, writing performance). This was might because the learners' cognitive complexity did not have an impact on their

writing quality (Yang, 2014). There was a difference between real test scores and self-reported performances. In Yang's vision, the learners' cognitive complexity of topic familiarity did not affect the linguistic accuracy or the syntactic features of their writings. In other words, although confronting familiar topics, either personal familiar or impersonal familiar, the participants felt that they had much more to write; such a feeling did not have an impact on their writing proficiencies. The learners' linguistic accuracy and the syntactic features, which were imperative features for a teacher to score, did not change.

Therefore, although the learners felt that they were able to write more fluent toward familiar topics, their self-reported performances which were relevant to their perceived English proficiency, expectations of the scores and their perceptions toward the real test scores, were not better than confronting unfamiliar topics.

#### **5.5.4.3.2 Emotional Factors**

Regarding 'Topic Familiarity', the participants' affective responses varied and were categorised into three patterns, namely, the positive patterns, the negative patterns and the emotionally ambivalent patterns. One salient outcome was identified from Eric's and Lucy's profiles. Eric reported that the negative emotions with lower intensities would facilitate his writing performances. In week 8, a *boredom – apathy – anxiety pattern* was identified from Eric's responses. On the other hand, Lucy reported that the negative emotions with higher intensities would be debilitating to her writing performances. In week 8, an *apathy – boredom pattern* was identified from Lucy's responses. Both of the

participants reported that the writing topic in week 8 was very familiar and very easy. However, their self-reported performances and their affective experiences differed.

Eric: You (the researcher) are from Dalian, too. You know the history of Xinghai Park as well! I started from how this refuse dump turned out to be one of the best parks in China. My writing was really cheerful, however; I felt **a bit bored** of such topics. I sometimes felt **a bit apathetic** about these meaningless topics. But this issue did not bother me. Actually I was not good at writing and felt **a bit anxious** before the exam, but thank to this topic, I think I **did much better** than I thought! It was a **very good** performance.

*(boredom –apathy –anxiety)*

Lucy: I think the writing topic was not difficult and I know the history of Xinghai Park. The template which I have prepared for this contest was good enough. However, I sometimes wonder if such writing contests were really important or not. Can such exams really distinguish our writing abilities? Well, I guess that these writing tests were **really boring** and **no student could do anything to avoid** them. I believed that the education system was **really helpless**. I do not think the teacher's feedback met my expectation. I think I did **poorer than usual**, but I **do not care about** the feedback **at all**, because it has no use to improve my writing skills.

(*apathy –boredom*)

Both of the participants were born in Dalian and very familiar with this writing topic. Both of them reported that they knew the history of Xinghai Park and their reported affective experiences had overlapping emotions. They were also reported to be FL learners with lower perceived English competence. However, the underlined texts from the above responses reveal one important difference between the two participants. Toward the same piece of perceived ‘meaningless topic’, Eric reported that such meaninglessness did not bother him; whereas Lucy held a suspicious attitude toward it. That is, what caused such a difference in their self-reported performances was neither the type of familiarity nor the intensity of the emotions; it was their feelings, attitudes or judgements to the topic itself that mattered.

#### **5.5.4.3.3 Motivational Factors**

Rahimpour and Hazar (2007) suggested that the familiarity of a topic could promote performances with respect to fluency and the participants may be motivated to take extra readings to increase the chance of being familiar with the topic. The first half of the argument was identified from this study as the participants felt that they had more to write when confronting familiar topics. However, the students in this study did not report that they wanted to take extra readings to build up knowledge. Instead of being motivated to take some extra exercises, the participants felt *apathetic* about the writing task. This perhaps was because the learners were short of an explicit instruction from their teacher (Chen & Lee, 2011).

Another reason was revealed from Fiona's response. The learner's vocabulary, grammar, listening and reading aspects were tested via multiple-choice questions. The learners were allowed to conduct self-directed learning by using reference books with standard answers. However, regarding the writing aspect, a learner needs a tutor to correct his/her writings for better presentation. Such a tutor was not just there to help. In fact, the participants reported that it was not easy to find a qualified tutor to improve their writings. Fiona is the only participant from the 12 who reported that she submitted '*pieces of writings to the university newspaper*' and found '*a foreign teacher to improve her writings*'. Such responses were categorised as 'Autonomy'. The attractor state, 'Topic Familiarity' was not identified from her responses.

#### **5.5.4.4 Amotivation**

Deci and Ryan (1985) defined 'Amotivation' as the experiences when individuals did not perceive contingencies between performance outcomes and their own actions. In addition, Ryan and Deci (2000) argued that 'Amotivation' referred to 'the state of lacking an intention to act' (p. 61) and may associate with the learners' perceived non-contingency, low perceived competence, nonrelevance and nonintentionality.

##### **5.5.4.4.1 Cognitive Factors**

Across the 12 cases, the attractor state, 'Amotivation', was identified from five participants' responses. They were Eric, Louis, Lucy, Mary and Sarah. In

addition, 'Amotivation' was reported relating to the participants' vocabulary, grammar, listening, reading, and speaking performances.

From a cognitive perspective, four of the five participants, namely, Eric, Louis, Lucy and Sarah reported lower perceived English proficiencies. However, Mary reported a higher perceived English proficiency, which contradicted Ryan's and Deci's (2000) argument of amotivation that usually associated with the learners' low perceived competence. Mary's responses such as *'other people's performance or judgments are not relevant'* and her constant decrease of *'conversations with peers'* significantly related to 'Nonrelevance', which was a subsumed component of 'Amotivation'. As a consequence, the subsumed components of 'Amotivation', namely, the learners' perceived non-contingency, the low perceived competence, nonrelevance and nonintentionality might not always come together as a group. These components could be reported separately.

#### **5.5.4.4.2 Emotional Factors**

The attractor state, 'Amotivation', was related to the emotion *apathy*. 'Apathy' was defined as 'lack of interest, enthusiasm, or concern' (Oxford English Dictionary 2015). 'Amotivation' was defined as 'the state of lacking an intention to act' (Ryan & Deci, 2000, p. 61). The definitions of these the two terms, amotivation and apathy were similar; however, the usage of these two terms was different in this study. To be specific, *apathy* was used to describe the affective responses such as *'did not that much care about'* or *'I felt apathetic'*.

'Amotivation' was used to describe a system outcome, i.e. an attractor state and its attractor basin was outlined. Therefore, the term *apathy* was used to describe

an emotion which paralleled other emotions such as anxiety or stress in this study. *Apathy* can be categorised as an affective force in amotivation's attractor basin.

In addition, this attractor state was usually reported together with some other negative emotions such as *resignation* or *stress* or even some positive emotions, such as *relaxation* or *happiness*. This finding can be linked to Waninge's (2014) argument that the learners may report both positive and negative emotions, such as happiness, pleasant or disregardful when they were in a relatively stable state of neutral attention. Neutral attention can also be categorised as a motivational factor and will be illustrated in the following section.

#### **5.5.4.4.3 Motivational Factors**

From a motivational perspective, 'Amotivation' was closely related to 'Neutral Attention' (Waninge, 2014). Neutral attention was defined as 'the type of situation where a learner is still paying attention in class, but is not necessarily actively engaging with the material, nor does he or she have any particularly intense affective reaction to the situation' (Waninge 2014, p. 202). Moreover, Waninge (2014) argued that neutral attention related to a passive state of engagement in learning. Such a passive state relates to the descriptions of 'Amotivation'. In this study, five participants reported that they neither motivated nor demotivated to complete some of the tasks or to give some reactions on the teacher's feedback. They simply '*sat down in the classroom for lectures*' (Eric, vocabulary performance, week 14) or '*had to present at an oral competition. What happens during the competition did not matter because the speaking scores were not shown on the transcript*' (Louis, speaking performance,



week 4 & 10). Such responses reflected that the learners were in a neutral state which was frequently identified in an academic setting (Ainley, 2006 & 2007; Baker *et al.*, 2010).

#### **5.5.4.5 Autonomy**

In this study, ‘Autonomy’ referred to the learner autonomy. Benson’s and Voller’s (1997) definition of ‘Autonomy’ in the FL area was widely quoted. They defined ‘Autonomy’ in five ways:

- ‘the *situations* in which learners study entirely on their own’;
- ‘a set of *skills* which can be learned and applied in self-directed learning’;
- ‘an inborn *capacity* which is suppressed by institutional education’;
- ‘the exercise of *learners’ responsibility* for their own learning’;
- ‘the *right* of learners to determine the direction of their own learning’

(Benson & Voller, 1997, p. 1-2)

In this study, the attractor state, ‘Autonomy’, was frequently identified from the participants’ responses (9 out of the 12 participants have reported such responses). According to the above definition, the first, second and fifth description was reported in this study. For example, Mary chose to improve her

vocabulary proficiency by using ‘*GRE, IELTS, TOEFL, TEM 8 vocabulary books*’. Except for *TEM 8*, other vocabulary books were not compulsory. Mary’s response reflected her right to determine the direction of her English vocabulary learning and her situation of studying entirely on her own. Similarly, another example can be identified from Alex’s profile. He reported to ‘*listen to BBC one hour daily*’ to improve his English listening ability and to ‘*use The Economist*’ to develop his reading ability. Such responses can also be categorised as the attractor state, ‘Autonomy’. Alex also used his right to determine the direction of developing his English listening and reading ability and his situation of studying entirely on his own. As a result, 9 out of the 12 participants reported that a set of skills were learned through the process of their self-directed learning.

#### **5.5.4.5.1 Cognitive Factors**

From a cognitive perspective, eight participants with higher perceived English competence, namely, Alex, Amber, Bruce, Cindy, Fiona, Mary, Nancy, Peter and one participant with lower perceived English competence, Eric were identified to be relevant to this attractor state. Other participants with lower perceived English competence, namely, Louis, Lucy and Sarah did not report self-directed learning. Such a finding reflected that ‘Autonomy’ was more likely to be reported by learners with higher perceived English competence rather than with lower competence. However, one exception, Eric, reported that he chose to ‘*use Bo Bing Grammar book*’ to develop his English grammar ability and kept using it throughout this six-month study, although he was a learner with perceived with lower English competence.

#### **5.5.4.5.2 Emotional Factors**

All three types of affective patterns, namely, positive affective patterns, negative affective patterns and emotionally ambivalent patterns were identified to be relevant to this attractor state, 'Autonomy'. Negative affective patterns with higher level negative emotions did not prevent the participants from autonomous learning. For example, Alex reported an *anxiety –stress –disappointment pattern* in week 6 regarding his vocabulary performance, but he continued his autonomous learning till the end of the research. On the other hand, positive affective patterns did not continue the participants' autonomous learning. For example, Mary reported a *relaxation –contentment pattern* at medium level in week 8 regarding her grammar performance, but still abandoned '*using Bo Bing Grammar book*' and stopped her autonomous learning.

#### **5.5.4.5.3 Motivational Factors**

Researchers in the SL/FL area usually study the linear cause-effect relationship between motivation and autonomy in language learning. For example, Ushioda (2011) evaluated the interactions between the language learners' motivation and autonomy and suggested that motivation would promote autonomy. On the other hand, Dickinson (1995) argued that the learner autonomy was a condition for learning success and enhanced motivation.

However, in this study, from a motivational perspective, the learners' choices to determine the direction of their own learning and to study all on their own, which were subsumed components of 'Autonomy', were not reported as causes or

effects to their motivations, learning success, or self-reported performances. For example, Mary abandoned '*using Bo Bing Grammar book*' to develop her English grammar ability in week 8, because she found out the book was not helpful in terms of improving her exam scores. She chose to follow the teacher's instructions to learn rather than studying all on her own. Although her autonomous learning in Grammar stopped in the middle of the time window of this study, her passion and motivation to develop her grammar skills continued, and no significant change was reported regarding her self-reported performances. Another example can be identified from Eric's profile. Eric's autonomous learning in Grammar continued throughout the research period. His motivation to learn decreased dramatically after week 8, but his self-reported grammar performances still stayed in the average or above average zone. Therefore, by outlining the attractor basin of 'Autonomy' at a collective level, no causation was identified.

#### **5.5.4.6 Vision**

'Vision emerges or is developed within personal development projects... has much to do with giving meaning to one's life, with helping to make shifts in professional careers and with coaching yourself in realising a personal dream' (van der Helm, 2009, p. 98). In addition, vision could be considered as a powerful attractor state when studying phenomena through the lens of DST and could act as a key motivational tool in the SL/FL learning process (MacIntyre *et al.*, 2014; Dörnyei, 2014; Chan, 2014).

#### 5.5.4.6.1 Cognitive Factors

Across the 12 cases, the attractor state, 'Vision', was identified from nine participants' profiles. The participants were Alex, Amber, Bruce, Louis, Lucy, Mary, Nancy, Peter and Sarah. In addition, 'Vision' was reported to be relevant to the participants' vocabulary, grammar, listening, reading, and speaking performances. From a cognitive perspective, 'Vision' was identified to be relevant to the participants with a higher perceived English competence (Alex, Amber, Bruce, Mary, Nancy, Peter) and with a lower perceived English competence (Louis, Lucy, Sarah). Different learner's 'Vision' was reported to be different. These visions were categorised into three cognitive categories, namely, the learners' self-images, the future goals and the group recognitions.

Their visions reflected 'the future, the ideal, and the desire for deliberate change' (Chan, 2014, p. 245). In addition, the above nine participants reported how their 'distant future' rather than the 'proximal goal' (Masuda *et al.*, 2010) significantly influenced their self-appraised English competence, self-reported performances and perceptions toward the teacher's feedback. For example, Louis and Sarah, both of the participants were self-perceived sociable people and only needed a *pass* score in their exams. Their self-reported vocabulary, grammar and writing performance trajectories were very similar. They also reported very similar 'proximal goals', a pass score in their exams. However, their 'distant future' or future self-images were different. Louis believed in '*the Doctrine of the Mean*' and wished to '*find a normal job and a beautiful wife*' after graduation. He argued that he was not interested in paying specific attention on improving any individual aspect of English. Unlike Louis, Sarah although expressed similar

responses to her English vocabulary, grammar and writing performance, she argued that she paid more attention to train her speaking and listening skills, because she believed that good English listening and speaking skills were necessary for her future. Therefore, although a very similar profile may be identified from the cases, the learners' visions may vary.

#### **5.5.4.6.2 Emotional Factors**

From an emotional perspective, not only positive affective patterns, but also emotionally ambivalent patterns were identified facilitative to the participants' self-reported performances. The participants reported diverse affective experiences which were categorised into different patterns and some of the negative or ambivalent affective patterns may have a positive effect to facilitate the learners' performances (López's and Aguilar's, 2012, section 5.4). This finding may also be explained by Boyatzis *et. al.* (2015) who argued that negative emotions were found sometimes can function as positive emotions to 'enhance memory accuracy' and 'have been linked to paying greater attention to detail and focusing on the task at hand' (p. 6).

#### **5.5.4.6.3 Motivational Factors**

From a motivational perspective, 'Vision' was identified relating to the participants' group recognition and career goals in the future. Two groups, namely, '*Civil Service Exam Group*' and '*GRE Group*', and three career goals, namely, '*Study a Master Degree in China*', '*Study a Master Degree Abroad*' and '*Go for a Job Directly*' were identified. The participants selected different books

and different strategies to improve their English skills according to their visions. This finding can be linked to You and Chan (2014) who argued that the learners' visions significantly related to their imagined communities.

In addition, You and Chan (2014) suggested that a learner may be based on his/her ideal L2 selves. For example, in their study, one of the participants reported that she would imagine working for a Sino Joint Venture to support her family when she saw successful Chinese speakers of English on TV. However, in this study, all of the 12 participants' visions were reported to be based on the reality, such as their real social status, family backgrounds or financial conditions. One reason might explain such a difference between the two studies. The participants' majors between the two studies were different. In this study, the participants were English major students; whereas You's and Chan's (2014) participants were engineering major students and English operated as an assistant tool to increase their chances to use their technical engineering knowledge. To use English was not a thing beyond their reach in this study. The participants in this study reported that they focused more on their real social and financial status to determine the ways of studying English and what they ought to be in the future. They reported that their visions needed to be something achievable and very close to their daily lives.

#### **5.5.4.7 Self-discrepancy**

Self-discrepancy Theory consisted of three basic domains of the self: the actual self, the ideal self, and the ought self (Higgins, 1987). Henry (2014) pointed out that Higgins' (1987) Self-discrepancy Theory described the dynamism of self-

guides; however, the theory did not ‘emphasise sensitivity to contextual factors in the same way’ (p. 85). In addition, Henry (2014) argued that many empirical studies on the Self-discrepancy Theory attempted to describe such discrepancies as static constructs, or fixed targets, rather than dynamic systems.

#### **5.5.4.7.1 Cognitive Factors**

Across the 12 cases, the attractor state, ‘Self-discrepancy’, was identified from two participants’ profiles, namely, Bruce (vocabulary and grammar performances) and Eric (speaking performance). Both Bruce and Eric reported how their actual selves, their ideal selves, their ought selves and the discrepancies between these changed over time. For example, Bruce’s perceived English competence shifted from perceived ‘*very confident English learner with excellent English competence*’ in vocabulary and grammar aspect (week 1), to ‘*being self-doubted*’ and perceived ‘*normal level of English competence*’ (week 6), to ‘*regaining confidence again*’ after he finished reciting the book *Successful You Vocabulary 12000* (week 12). In addition, Bruce’s ideal L2 self changed accordingly. His ideal L2 self at the beginning of this research was to be the best in the class. In week 6, his ideal L2 self dropped to the top three in the ‘*Civil Service Exam Group*’. Finally, his ideal L2 self went upward again in week 12 as ‘*being successfully selected as an internship employee in Neusoft*’. From Bruce’s responses, as the discrepancy between the actual L2 self and the ideal L2 self narrowed, his perceived English competence would increase at the same time.

Bruce’s responses correlated with the first two dynamic processes of Henry’s (2014) model of the dynamics of possible selves (Figure 5.5.1). This model



consisted of three dynamic processes. They were ‘the up and downward revisions of the Ideal L2 Self’, ‘changes triggered by interaction with other self-concepts’, and ‘changes in the vividness and elaboration of the image at the heart of L2 selves and in the availability and accessibility of the Ideal L2 Self’. Bruce’s ideal L2 self went downward in week 6 and went upward in week 12. Such a change related to the fluctuation of his actual L2 self. For example, when finishing the recitation of 12000 new vocabulary, Bruce reported that his perceived actual L2 self reached the best point ever.

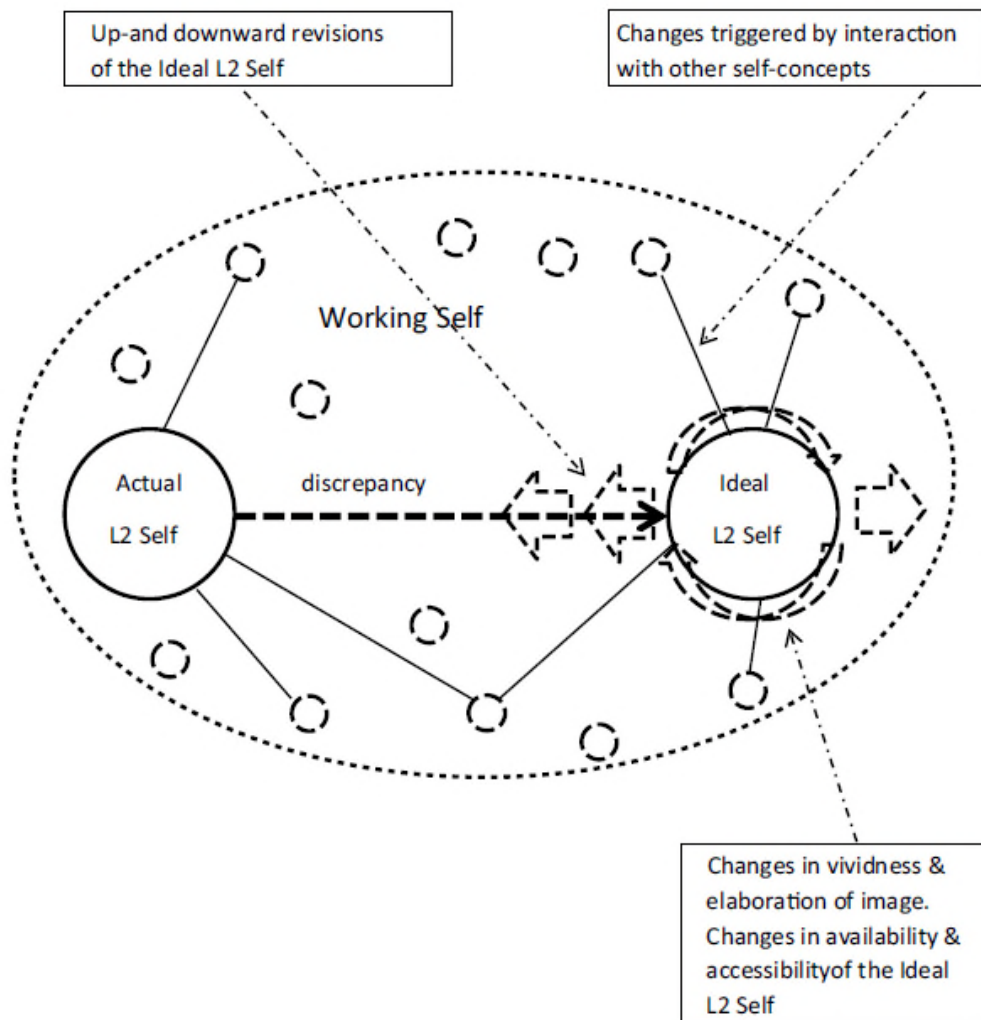


Figure 5.5.1 The Dynamics of Possible Selves: A Visual Representation

(Henry, 2014, p. 92)

#### **5.5.4.7.2 Emotional Factors**

From an emotional perspective, Eric's responses suggested that this attractor state governed his speaking performances. Regarding his self-reported speaking performances, he reported an *apathy –boredom pattern* with both emotions being reported at medium level in week 4 and at higher level in week 10. One salient outcome was identified from Eric's affective experiences. As his self-discrepancy between the actual self and the ideal self enlarged, the intensity of his negative emotions enhanced, his self-reported performance decreased and the role of Ought-to L2 Self in his English learning process decreased. However, the above identified outcome fitted in Eric's affective experiences only.

#### **5.5.4.7.3 Motivational Factors**

Figure 5.5.1 is a visual representation of the model of the dynamics of possible selves. 'Self-discrepancy' can be metaphorically described as the distance between the actual L2 self and the ideal L2 self. Such a distance could change from time to time. Such a change was also identified from Bruce's responses. With an increase of motivation to learn and with a better performance in the exams, his actual L2 self came closer to his ideal L2 self. Such identification can also be found in You's and Chan's (2014) study.

#### **5.5.4.8 Self-esteem**

This attractor state, 'Self-esteem' significantly relates to the concept of the self, which is similar to the previous attractor state (section 5.5.4.7), 'Self-discrepancy'. 'Self-esteem' referred to 'the experience of being capable of meeting life's challenges and being worthy of happiness' (The National Association of Self-Esteem, 1997).

##### **5.5.4.8.1 Cognitive Factors**

Across the 12 cases, the attractor state, 'Self-esteem', was identified from two participants' profiles. They were Fiona (vocabulary, grammar and speaking performances) and Peter (grammar performance). From the definition, there were two components in 'Self-esteem': 'meeting life's challenges' and 'being worthy of happiness'. The first component was not difficult to understand. A question might be raised, what did 'being worthy of happiness' mean? Pasternack (2002) explained that the feeling of happiness did not equal to the desire of being worthy of happiness. In his vision, being worthy of happiness 'carried the moral weight to make one worthy' (p. 9).

Rubio's (2007, p. 5-6) categorised four types of 'Self-esteem':

- 'High worthiness and high competence leads to high or Authentic Self-esteem';
- 'High worthiness and low competence leads to Type I Defensive Self-

esteem, resulting in a self-centred behaviour’;

- ‘Low worthiness and high competence leads to Type II Defensive Self-esteem, resulting in overachieving behaviour’;
- ‘Low worthiness and low competence leads to Low Self-esteem, resulting in negativistic behaviour’.

Let me give an example here. If an FL learner believes that he has high competence in an FL and will feel happy if he obtains high scores in the exams. In one exam, he obtains high scores by cheating, but he still feels really happy. Such academic cheating is immoral and can be defined as low worthiness (Rubio, 2007). Therefore, this learner possesses Type II Defensive Self-esteem.

Both participants reported that they were able to meet the challenges in learning. From their responses, high worthiness was identified. Both of them were perceived very good English learners with high English competence and high worthiness of making judgments about themselves. This identification correlated with Rubio’s (2007) first type of self-esteem, the Authentic Self-esteem which referred to learners with high worthiness and high competence at the same time. The Authentic Self-esteem was also mentioned by Mruk (1999) who argued that the learners with this type of self-esteem would have a strong sense of security and would be successful when facing challenges, because their perceived abilities were good enough to solve problems.

#### **5.5.4.8.2 Emotional Factors**

Most of the affective experiences reported by Fiona and Peter related to positive affective patterns. Except for an *expectation –anxiety pattern* and an *anxiety –jealousy –confidence pattern* which were identified from Fiona’s responses of her self-reported grammar performance in week 6 and 12, respectively. At a collective level, the most frequently reported affective pattern was the *confidence –expectation –interest pattern*.

#### **5.5.4.8.3 Motivational Factors**

From a motivational perspective, Fiona and Peter reported that they had a high motivation to achieve certain tasks. In addition, from Fiona’s and Peter’s responses, it could be identified that this attractor state is a relatively static outcome of their motivational development. To be specific, their self-esteem was initially stimulated by the external affirmatives. For example, Fiona reported that when she received the affirmative comments from her parents, she was motivated to learn. This attractor state was reported to be associated with high motivation to learn at a collective level.

### **5.6 Researching Traditional FLA Concepts from a DST Perspective**

In the previous sections, I discussed the *Self-organising Capacity* across different affective patterns, *Emotional Ambivalence*, *DST –Feedback*, and *Attractor States*, aiming to link each individual’s uniqueness and identified salient patterns to existing theories and principles, for a fuller understanding of the FL learner

dynamics. In this section, I will illustrate how a three-layer model (Figure 5.6.4), *The Dynamic Model of Foreign Language Development* was generated. I will illustrate the components and their representations from each layer and utilise Alex's profile to exemplify the illustrations. In the meantime, I will also introduce the emerging themes and the examples from the previous findings which are relevant to each layer. Finally, I will also explain how the model can be used by a teacher to understand the relationship between affects and self-reported learning outcomes over time.

This three-layer model begins with a bottom layer (Figure 5.6.1). As can be seen from the figure, three primary factors, namely, 'Cognition', 'Emotion' and 'Motivation' interacted with each other in this layer. These factors represented the initial conditions of a learner's FL development at a particular time of a study.

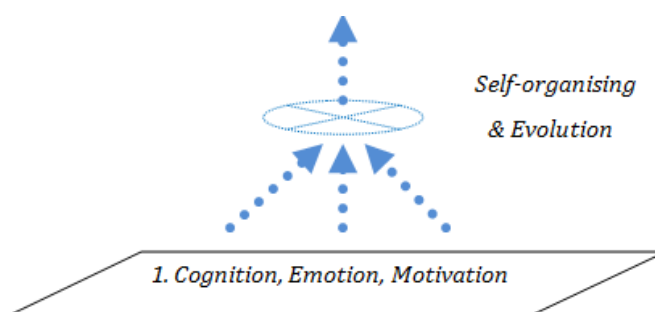


Figure 5.6.1 The First Layer of the Model

For example, in week 8, a set of components were reported simultaneously by Alex to be relevant to his performance in the final exam. During the exam, five aspects of English were tested, namely, vocabulary, grammar, listening, reading and writing. Regarding the cognitive factor, Alex reported that he was an FL

learner with higher perceived English competence. Regarding the emotional factor, Alex reported six emotions, namely, *anxiety*, *apathy*, *confidence*, *contentment*, *expectation*, and *stress* to be relevant to his performances.

Regarding the motivational factor, he reported 'self-directed learning' (Benson & Voller, 1997, p. 1) and he did not intentionally 'take exercises to develop his English writing ability' (Alex's profile, p. 180).

Although these reported factors and the components within each factor were experienced and reported simultaneously at a particular time, they coalesced into different combinations. For example, higher perceived English competence (Cognition), *apathy –expectation affective pattern* (Emotion), and self-directed learning (Motivation) coalesced into one combination to be relevant to his self-reported average vocabulary performance in week 8 only. Other emotional and motivational factors were filtered out.

In Figure 5.6.1, the blue circle with a cross in it represented such a filter. This filter related to one of the aspects of the language, such as English vocabulary aspect or English listening aspect. Three blue arrows below this filter represented the competition between the components in the first layer. To take Alex's week 8 performance as an example again, if the filter was vocabulary-performance-oriented, two emotions, namely, *apathy* and *expectation*, competed with the other four emotions which were reported simultaneously. Such a competition was self-organised within the dynamic system. The two emotions finally went through this filter and evolved to the second layer. Other emotions were filtered out by such a vocabulary-performance-oriented filter; however, would survive to go through other filters, such as a grammar-performance-oriented filter. After such a

competition via self-organisation, the surviving cognitive, emotional and motivational factors coalesced into one relatively stable combination and went upwards together to the second layer. The blue arrow above the filter represented such a movement.

The first layer consisted of two emerging themes (Theme One and Theme Two).

**Theme One:** A Limited Number of Potential Cognitive Factors, Emotional Factors and Motivational Factors

Through the lens of DST, this study considered FL learning process as a dynamic system, which in principle took every possible cognitive, emotional and motivational factors into account. From such a bottom-up approach, the findings, however, revealed that rather than unlimited numbers of potential factors, there were limited and countable ones, due to the system's self-organizing capacity. In fact, the numbers of factors relating to the learner's FLA process was reported countable and to some extent overlapped across different learners. For example, each learner from this longitudinal study reported limited numbers of emotions through the whole period of investigation. The reported number of emotions ranged from six (Lucy & Nancy) to ten (Fiona) which were categorised into limited numbers of affective patterns ranging from six (Fiona & Peter) to nine (Bruce). Therefore, rather than an unlimited number of factors, the first layer referred to limited numbers of cognitive factors, emotional factors and motivational factors.



## **Theme Two:** The Balance between Three Main Forces: Cognition, Emotion and Motivation

This theme referred to the formation process of each attractor state. The balance between the three main forces revealed the finalised stable state after competitions between different forces in a system. The first layer was regarded as an attractor basin and different factors competed with each other within it. For example, Section 5.5 aimed to compare the participants' attractor states horizontally across the cases. Three main forces were identified forming the attractor basin for each attractor state, namely, cognition, emotion and motivation. These three forces acted at different levels of strength, which ultimately determined the type, the duration and the location of each attractor state as a whole.

For example, taking a brief review of Fiona's profile, ten emotions of different intensities were altogether reported 60 times and 151 initial items were displayed across seven categories in Saldaña's LQDSM (Longitudinal Qualitative Data Summary Matrix). These elements related to the cognitive factors, emotional factors and motivational factors reported by Fiona regarding her whole FLA process. These elements converged and dispersed through self-organisation, and finally went upward and became stable, evolving to the second layer, 'Attractor State'. For Fiona, all elements evolved into four stable groups, and these groups were regarded as four different attractor states. Each attractor state was formed by different types of cognitive, emotional and motivational factors.

In addition, an attractor state was the preferred system behaviour, which reflected the investigation of the traditional FLA concepts, or variables, through the lens of DST. It was a novel way to look at familiar concepts or variables from a dynamic perspective. For example, 'self-esteem' from Fiona's profile was identified as emerging from first, the external acceptance of her own achievement (cognitive factor); second, from her acceptance of herself (emotional factor); third, her high worthiness to achieve certain tasks (motivational factor). DST could be a powerful lens to re-evaluate the traditional research paradigm in FL learning.

Furthermore, three forces revealed the inseparable nature in between (section 5.3 & 5.5). The initial conditions of the three main forces determined the type of an attractor state in the relevant context. For example, the FL learners' cognitive perceptions of their language proficiency, emotional state and goals or other motivational factors to learn at the beginning of the research, determined which attractor state was relevant to each unique profile at the specific point of the timescale. These forces constituted the attractor basin of each attractor state. When the intensities of the forces changed, the position of the attractor state in the attractor basin would change accordingly. The balance between each force determined the stability of the attractor state. If something broke the balance, the attractor state would start to travel again or even jump into a different type.

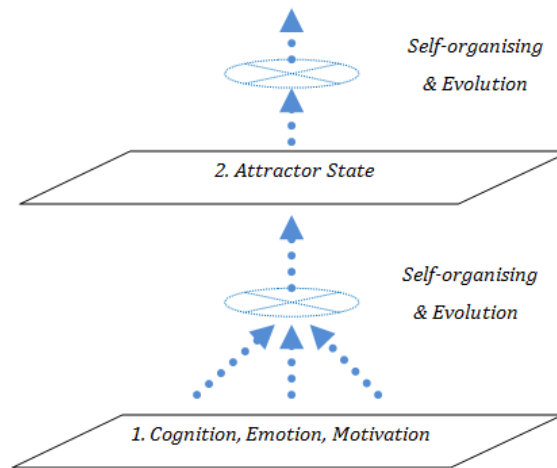


Figure 5.6.2 The Second Layer of the Model

The second layer represented the attractor state (s) that was/were generated from the first layer (Figure 5.6.2). An attractor state was defined as ‘a result of the system dynamics self-organising’ (Hiver, 2014, p. 22), and was the preferred system behaviour after competition between the three factors in the first layer. In other words, attractor states were generated from limited numbers of factors. This meant that the number of potential attractor states was countable. Such preferred system behaviours continued to evolve through another filter. Above the second layer, a second blue circle with a cross in it could be identified. It represented a filter which related to one of the aspects of the language as well. Within one model, the two filters in Figure 5.6.2 should refer to the same aspect of the language. Two blue arrows above the second layer represented the evolvment via self-organisation.

Such preferred system behaviours could be stable for a pre-defined timescale, but were not necessarily to be stable for the whole time window of the study. The

attractor state (s) could change and start to travel at any time. For example, Alex's responses of his vocabulary performance in week 2 were categorised as 'Integrative Disposition' and 'Autonomy'. Such preferred system behaviours continued to be stable until week 6. An external factor disrupted such stability and the system started to travel again. As he reported, 'it was the teacher's or the examiner's mistake' (Alex's profile, p. 175). 'External Incentives' strongly governed his behaviour and performance in week 6. Such an incident was revealed to have no persistent power. After week 6, the attractor state, 'Autonomy' moved onward to govern his vocabulary performance behaviour again. Moreover, the incident in week 6 was only reported to affect his vocabulary performance. His grammar performance was not affected by such an external factor. Therefore, the particular language aspect-performance-oriented filter was necessary for each model.

The second layer consisted of two emerging themes (Theme Three and Theme Four).

### **Theme Three:** A Limited Number of Different Types of Attractor States

Hiver (2014) defined three main types of attractor states, namely, fixed-point attractor state, periodic attractor state / limit cycle attractor state, and strange attractor state / chaotic attractor state.

A Fixed-point Attractor State referred to 'a unique point of equilibrium that the system tends to settle in over time' (Hiver 2014, p. 21);

A Periodic Attractor State referred to ‘two or more values that the system cycles back and forth between in a periodic loop. Patterns emerge when events or behaviours repeat themselves at regular intervals’ (Hiver 2014, p. 26);

A Strange Attractor State referred to ‘values that a system tends to approach over time but never quite reaches ... because the dynamics trace a somewhat erratic or irregular pattern that never quite repeats itself, although these systems do in fact show complex forms of organisation that can be understood after the fact’ (Hiver 2014, p. 26).

The first two types of attractor states, namely, the fixed-point attractor states, and the periodic attractor states were identified in this study. For example, ‘Integrative Disposition’ was reported by 12 participants as a fixed-point attractor state relating to their vocabulary performances over this six-month study. ‘Self-discrepancy’ and ‘Autonomy’ were reported by Bruce as the periodic attractor states relating to his grammar performances over the six-months of the study. Similarly, a form of a closed loop of periodic movement (Larsen-Freeman & Cameron, 2008) between two attractor states, namely, ‘Integrative Disposition’ and ‘Vision’ was identified from Louis’ profile. These two attractor states were considered as periodic attractor states.

In this study, altogether eight attractor states were identified from 12 participants’ profiles. Specific attractor states were identified relevant to particular aspects of English performances. For example, ‘Integrative Disposition’ was identified to be unique to the participants’ vocabulary performances and ‘Topic Familiarity’

was identified to be unique to the participants' writing performances. This study aimed to answer the main research question 'From a dynamic perspective, what is the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom?' Attractor states in the second layer were considered as mediations between the emotions from the first layer and the self-reported performances from the third layer.

#### **Theme Four:** The Distinctiveness of the Attractor-governed Phenomena and Attractor Conglomerates

Dörnyei (2014) argued that strong attractor-governed phenomena referred to 'stable and predictable phases when the system is governed by strong attractors, resulting in settled, non-dynamic attractor states' (Dörnyei, 2014, p. 84) and typical attractor conglomerates referred to 'all these motivational, cognitive and affective factors come together to form a powerful amalgam that acts as a whole, and this unity of the combination of factors has been aptly recognised in everyday speech by referring to it with a single word' (Dörnyei, 2014, p. 84). To distinguish the attractor-governed phenomena from the attractor conglomerates, it was important to identify if the attractor was powerful and sufficient enough to govern the system by itself or required to be formed as a conglomerate to operate the system (Dörnyei, 2014).

In addition, either one strong attractor or a series of attractor conglomerates were identified, they would travel upward from the second layer to the third layer.

During the self-organising process, the novelty of this model was to bring the

linguistic aspect to traditional motivational theories, self-related theories, etc. under the SL/FL context. To be specific, traditional theories, such as the L2 Motivational Self System, rather than taking the particular linguistic aspect, such as vocabulary into account, focused more on language learning in general. On the other hand, more researchers became aware of the importance of adding the linguistic considerations into traditional theories (de Bot, 2014). The model from this study also took the linguistic consideration and applied a bottom-up approach, aiming to identify which attractor state(s) could be reported to be relevant to which aspect of English. As a result, the attractor(s) from the second layer continued to travel upward through self-organisation and interacted with different aspects of the language performance.

The third layer represented the identified self-reported performances generated from the second layer and the interactions between one and another (Figure 5.6.3). The attractor states from the second layer continued to travel upward through self-organisation and interacted with different aspects of language. For example, five attractor conglomerates were identified from Alex's profile, namely, 'Integrative Disposition', 'External Incentives', 'Autonomy', 'Vision' and 'Topic Familiarity' relating to his English learning over six months. If considering Alex's FLA process in general, then his English development could be concluded by the interaction between above five attractor states.

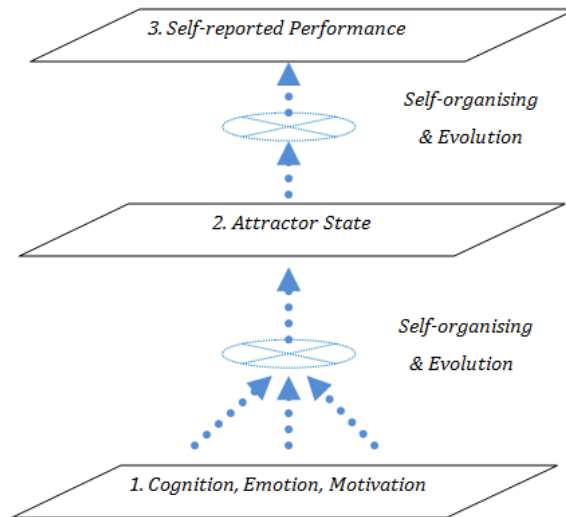


Figure 5.6.3 The Third Layer of the Model

Figure 5.6.4 displayed a three-layer model, *The Dynamic Model of Foreign Language Development*, which represented a nonstatic process over time. This model explained a novel way to understand the relationship between the FL learners' self-perceived affective experiences and their self-reported performances. The horizontal arrow at the bottom referred to the time axis.

The horizontal arrow at the bottom (Figure 5.6.4) represented the passage of time, which meant the learner's timescale consisted of many  $t$  s, for example,  $(t-2)$ ,  $(t-1)$ ,  $(t)$ ,  $(t+1)$ ,  $(t+2)$  (Figure 5.6.5). Thus for each fixed-point like  $t$ , there was a three-layer model to illustrate the dynamic interactions at that specific time. There were equivalent numbers of three-layer models according to fixed-point  $t$  s over the time for an investigation. In addition, the salient elements from the third layer at point  $(t-1)$  for example (Figure 5.6.5), were the initial conditions



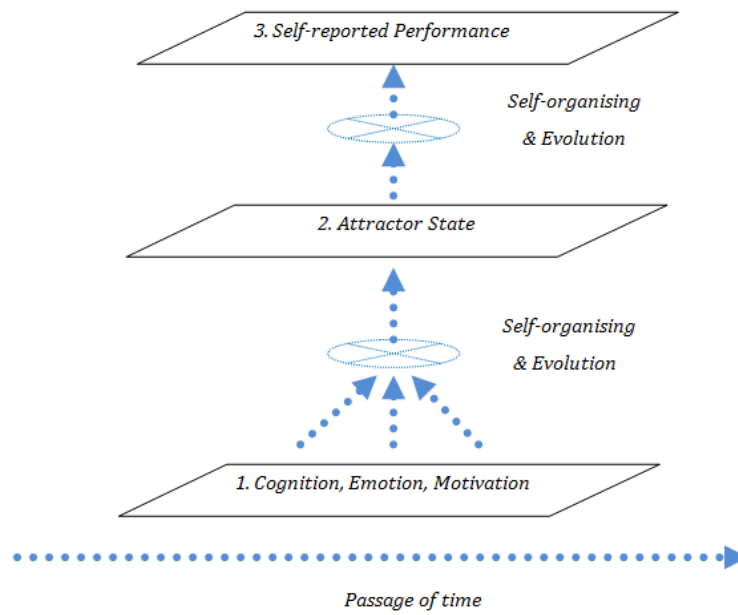


Figure 5.6.4 The Dynamic Model of Foreign Language Development

for elements from the first layer at point  $t$ , and the salient elements from the third layer at point  $t$ , were the initial conditions for elements from the first layer at point  $(t+1)$  ... Such cyclic interaction kept travelling again and again until the end of the timescale. This model described 'iterative processes' (Verspoor, 2014, p. 38).

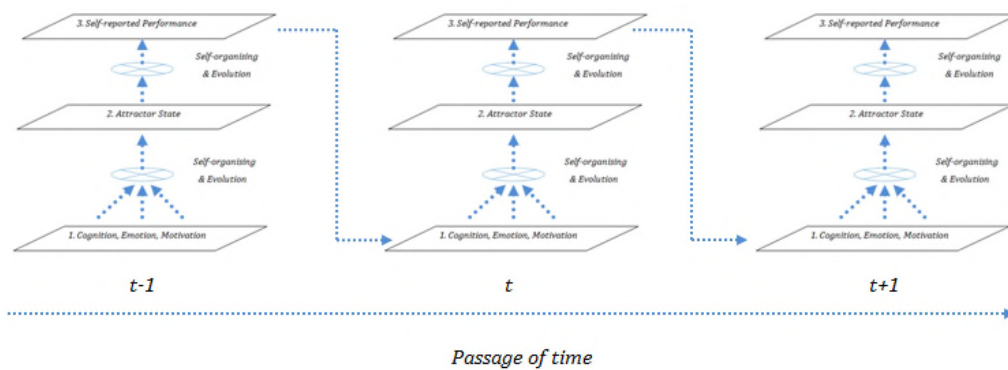


Figure 5.6.5 Iterative Processes

The third layer consisted of three emerging themes (Theme Five, Theme Six and Theme Seven).

**Theme Five:** The Development of the Learners' Performances and Their Self-evaluation Trajectories

As previously stated, the attractors from the second layer continued to travel upward through self-organisation and interacted with different aspects of language. This study took a step further than traditional research, in taking six linguistic aspects, namely, vocabulary, grammar, listening, reading, writing and speaking into consideration. The attractors evolved to the third layer, and interacted with different aspects of English language development. For example, we can take Alex's profile as an example. 'Autonomy' was reported as strongly governing his listening and reading performances and self-evaluations, whereas 'Vision' was reported as uniquely affecting his speaking performances and 'Topic Familiarity' only related to his writing performances. Therefore, rather than concluding Alex's English development was made up of five attractors in general, it was also important to investigate the interaction between particular attractor states and specific aspects of the target language.

Regarding the development of the learners' performances and their self-evaluation trajectories, the cross-case analysis also reflected the fact that all relevant attractor states from the second layer which were determined by three main forces from the first layer contributed to making up the relevant learning experiences from the third layer through the specific defined timescale. In other

words, the learners' self-reported performance trajectories reflected how one or a series of attractor state(s) converged and dispersed from time to time.

### **Theme Six: A Limited Number of Signature Dynamics**

Comparing the differences between the participants' affective patterns and their self-reported performance trajectories, seven signature dynamics or learner types were identified from the 12 participants (section 5.3). A signature dynamic was defined by Dörnyei (2014) as the system outcome to describe the trajectory of the learner's development and illustrated the reasons for ending up in one or more unique attractor state(s). In addition, Dörnyei (2013, 2014) also argued that the researchers could do retro-diction by identifying the system prototypes. Such identification would facilitate researchers in tracing back the reasons why a system stabilised in a particular attractor state and not in another. The findings from this study empirically evidenced Dörnyei's (2014) argument for different learner types. As he argued, learner types were predictable and although in principle, from a class of 30 learners, 30 very different learner types could be identified; actually the number usually rarely exceeded four to six.

Dörnyei (2014) also pointed out that the main limitation for identifying learners' signature dynamics or prototypes was the limited predictive power, due to the essence of DST approaches being based on learners' prior experiences. Similarly, Chan's (2014) RQM 'Retrodictive Qualitative Modelling' study also revealed similar limitations when investigating learners' signature dynamics or prototypes. Moreover, Chan also claimed that the learner types identified by the researcher may not always match the prototypes existing in the teachers' minds. In this

study, instead of making claims that other FL learners should respond similarly to similar contexts, the focus was on how the identified signature dynamics or prototypes in the third layer could correspond to different attractor states in the second layer and cognitions, emotions and motivations from the first layer. Furthermore, it was important to understand the learners' conceptions of their emotions and FL learning experiences; because these conceptions could reveal the learners' concerns or interests (Rudd, 2007). The learners' urges of creating better educational experiences could provide responses to teaching practices to their teachers. These identified relationships may expand FL learners' and teachers' thinking.

In this study, by analysing the participants' self-reported performance trajectories, periodic movements between different attractor states (Larsen-Freeman & Cameron, 2008) were identified (e.g. Bruce's grammar self-reported performances). In addition, this study also discovered that one learner who belonged to a particular prototype from the third layer, shifted into another type (Byrne & Callaghan, 2014) across time (e.g. the change of Eric's self-reported performances before and after the vacation). Such shifts occurred because of the restructuring of the three main factors in the attractor basin from the first layer. Such shifts also reflected that the dynamic system, although it had a tendency to become stable for a particular time and to settle into one or more attractor state(s), remained dynamic and would never reach a completely static state. This was the reason for considering the model as a nonstatic cyclic interacting model between the third layer and the first layer over time.

## **Theme Seven:** Iterative Processes

The learners' self-evaluation of their performances at a particular time, for example, at time ( $t$ ), would affect their justification of their cognitive perceptions of their language proficiency, their emotional fluctuations, their visions and the choice of learning strategies for their coming ( $t+1$ ) examinations. Their current ( $t$ ) self-reported performances were influenced by their self-evaluations of previous ( $t-1$ ) examinations. *The Dynamic Model of Foreign Language Development* (Figure 5.6.4) was considered as describing such iterative processes.

To sum up, *The Dynamic Model of Foreign Language Development* consisted of three layers and the interactions between these changed over time. The combination of all the sub-models contributed to the learners' FL development. The components from the three layers were inseparable and closely interacted with one another.

In addition, the identified emerging affective experience profiles significantly coincided with the participants' signature dynamics and learner types (section 5.3). For example, Alex's, Bruce's and Nancy's self-perceived ambivalent affective experiences (section 5.3.2) closely related to the creation of their 'Ideal L2 Selves' from the motivational domain. The above three participants' self-reported performance trajectories were quite similar. Another example was found in Louis' and Sarah's profiles. Louis and Sarah were both self-perceived sociable students with debilitating affective experiences (section 5.3.5). Moreover, they tended to report the same *apathy –relaxation –resignation pattern* to be relevant to poorer performance than their perceived English proficiency would have

suggested. Likewise, from Amber's and Cindy's profiles (section 5.3.3), Fiona's and Peter's profiles (section 5.3.4), it was identified that within each emerging learner type, their self-perceived affective experiences were similar.

Furthermore, as Nitta and Baba (2014), Waninge (2014), MacIntyre et al. (2014) argued, future research may focus on the investigation of the interaction between cognition, emotion and motivation; 'the situated longitudinal micro-mapping of different states' (Waninge, 2014); and their implications for the entire FLA development on a larger timescale. As a result, the investigation of attractor conglomerates (section 5.5) meets this research trend and initially sets up a bottom-up approach to identify the situated attractor states within six linguistic aspects of English, instead of proposing a hypothetical attractor state and testing it.

This model would allow a teacher to situate emotions and performances in one iterative system. By using the model, the question, 'emotions and performances, which happens first?' will not be asked. Because both emotions and performances exist and operate equally at the same time in this model. Emotions can cause performances as much as performances can cause emotions. In addition, instead of making claims about how other FL learners should respond similarly to similar contexts, this model focuses on the investigation of how different components, factors, states and learner prototypes interact with each other through the lens of DST.

This model would allow a teacher to understand the relationship between an FL learner's affect and reported learning outcomes by the identification of informal

groups and learner types. The identification of informal groups might assist a teacher to understand the learners' visions, career goals, self-images, study patterns and urges of learning strategies. Learner types exist in each informal group. As previously being illustrated (Section 5.3.1), some of the participants in this study reported very similar affective profiles (e.g. Louis and Sarah). In the meantime, similar self-reported performance trajectory profiles were also identified (e.g. Louis and Sarah). It was identified that different learners could have both similar affective profiles and performance profiles at the same time (e.g. Louis and Sarah). Therefore, this model, or the self-organisation between an FL learner's affect and reported learning outcomes together reveal a learner type in general at a particular time.

By using this model, a teacher could predict that there are limited numbers of learner types in one classroom. The number of the learner types is less than the total amount of the students in the classroom. By using this model, a teacher could identify limited numbers of self-perceived affective experiences and self-reported performances. The learners' self-reported performance trajectories can reflect how a series of attractor states from the second layer and the factors from the first layer converge and disperse from time to time.

Self-reported sociable students were more likely to have emotions such as apathy or relaxation (e.g. Louis, Sarah). These affective experiences related to average or even worse performance than their perceived language proficiency would have suggested. In contrast, those who were self-perceived highly motivated students with great confidence and self-esteem were more likely to have emotions such as anxiety, expectation or stress (e.g. Fiona, Peter). These affective experiences

related to average or better performance than their perceived language proficiency would have suggested.

This model presents a possible way for a teacher to understand how the cognitive factors, emotional factors and motivational factors from the first layer could correspond to different attractor states in the second layer and the identified signature dynamics or prototypes in the third layer. This model observes ‘the operation of the whole system and the interaction of the parts’ (Larsen-Freeman, 2014). Through the lens of DST, the potential factors in principle could be unlimited. *The Dynamic Model of Foreign Language Development* could be used to explain the process of how the preconceived unlimited numbers of potential factors are actually reduced into limited and countable ones via the interactions between the three layers.

## **5.7 Research Implications, Pedagogical Implications, Limitations and the Future Research Agenda**

### **5.7.1 Research Implications**

This study bridged several disciplines, namely, physics, psychology, applied linguistics and education, in order to avoid over-simplifying the phenomenon by focusing on fragments of reality. First, regarding terminology issues, I successfully translated abstract DST concepts from the physics discipline into tangible SL/FL terms which were acceptable by social science researchers. For example, I used the maple tree example to explain why attractor states did not attract explicitly. When designing an interdisciplinary study, it was important to



translate the concepts from different disciplines. This study provided a possible way to figure out the terminology issues.

Second, DST's novelty had its own challenges in 'not being part of the mainstream in research' (MacIntyre *et. al.*, 2014, p. 420). As van Geert and Steenbeek (2005) argued, 'applying dynamic systems theory is almost like begging for trouble' (p. 408). One of the main difficulties referred to the lack of methodological guidance. I chose a phenomenographic approach as it would allow a researcher to collect data from the participants' standpoint. Because my study aimed to explore the phenomena from a second order perspective, phenomenography allowed me to explore the individuals' qualitative different ways of experiencing the world from their eyes. In addition, this study provided an example on how to check the Intercoder Reliability and Agreement.

Third, the findings from this study showed that DST would allow a researcher to situate emotions and performances in one iterative system. DST might provide a possible logical solution to such a causality dilemma. In addition, the findings also suggested that DST would allow a researcher to reduce the potential unlimited numbers of components into countable and predictable ones. This feature might assist a researcher to move beyond well-established theories and frameworks. As previously illustrated, researchers tended to stick to well-established theories and frameworks (Howe & Lewis, 2005). When we started to conduct our studies with a well-established theory, it allowed us to see certain things. However, in the meantime, as we were strongly pushed by a well-established theory, it may also prohibit us from seeing other things. Through the lens of DST, a researcher was able to keep a more open mind to explore the

phenomena. For example, emotionally ambivalent patterns and a form of a closed loop of periodic movement would not be identified without adopting a DST approach. DST enabled a researcher to identify and conceptualise such systematic patterns and periodic movements. Therefore, DST is considered as a powerful paradigm for future SL/FL explorations.

Fourth, by outlining the Attractor Basin for each Attractor State via the Platonic Tripartite Framework (redefined by Dörnyei as cognition-motivation-emotion in 2009), I was able to identify the categories of descriptions at a collective level. Such identifications suggested that the term ‘variable’ as used in the traditional research which suggested straightforward linear causation (MacIntyre *et. al.*, 2014) was not sufficient to describe the learner’s dynamism. For example, ‘Autonomy’ was considered as an attractor state in this study and was reported to be relevant to different types of self-reported performances. In traditional studies, learner autonomy was considered as a condition for learning success and enhanced motivation (Dickinson, 1995). Such a cause-effect relationship was not identified in this study. The students’ motivations to determine the direction of their own learning, their emotions and their perceived English competence together contributed to such a system outcome. From the students’ perspectives, ‘Autonomy’ may not enhance motivation or contribute to learning success. Therefore, it would be more fruitful to outline the attractor basin which referred to ‘the set of all initial conditions that allow a dynamic system to evolve to a given attractor state’ (Hiver, 2014, p. 24) for each system behaviour in order to have a better understanding of its dynamism.

Fifth, *the Dynamic Model of Foreign Language Development* proposed a novel way to understand the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in a foreign language classroom. As having presented in the previous section, seven themes were found. This three-layer model described iterative processes of the FLA and suggested that even a small difference in the component of each layer could have a huge impact on the system. This model could be used to describe the developmental trajectories of the FL learners.

### **5.7.2 Pedagogical Implications**

This study aims to understand the learners' conceptions of their emotions and their FL learning experiences. Because these conceptions may reveal their understandings, concerns, interests and needs through learning in different ways (Rudd, 2007). The learners' urges of creating better educational experiences could provide responses to teaching practices to their teachers. The identified relationships may expand FL learners' and teachers' thinking. There are some pedagogical implications for the teachers and the students.

Regarding the pedagogical implications for the teachers, the identification of informal groups might assist a teacher to understand the students' visions, career goals, self-images, self-evaluations, emotions, study patterns and urges of learning strategies. For example, in this study, two informal groups were identified, the '*Civil Service Exam Group*' and the '*GRE Group*'. Students who would like to find a job after graduation or to study a master degree in China believe that they belong to the '*Civil Service Exam Group*'. On the other hand,

students who would like study a master degree abroad believe that they belong to the '*GRE Group*'. Such informal groups reveal their career goals, or even social and financial status.

In addition, the students from different groups have different study patterns. The students from the '*GRE Group*' have to recite approximately 10,000 more vocabulary items than those from the other group. Therefore, when facing an unexpected situation, such as the vocabulary exam in week 6, the students from different groups reacted differently. From the students' reports, almost all questions in the vocabulary section were out of the syllabus in week 6. The students from the '*Civil Service Exam Group*' were more likely to report negative emotions, poorer performance than their perceived English proficiency would have suggested, and some complaint about their teacher and the department. In contrast, the students from the '*GRE Group*' were more likely to report average or better performances, as they had a larger vocabulary than those from the other group. It should be noted here that the two informal groups were exclusive to the 12 participants in this study only and no claim should be made that other learners will respond in similar ways. Teachers can observe the informal groups in their own classes, if such groups exist, in order to have a better understanding of their students, and to some extent, predict their behavioural patterns.

Second, to motivate the students to learn can be a difficult task (Larsen-Freeman & Cameron, 2008). Teachers normally use rewards, positive feedback, or oral approval to motivate their students to learn or to engage them in an activity (Vallerand, 1997). However, such external incentives did not usually function as

the teacher expected. For example, in this study, the attractor state, 'External Incentives', although was identified from all 12 profiles, it was not identified from all subsidiary systems. If a form of a closed loop of periodic movement between 'Integrative Disposition' and 'Vision' was identified (Louis' vocabulary performance), the external incentives from the teacher might not be of any help. Furthermore, similar incentives could be perceived as either positive or negative by different individuals, due to the differences in curriculum, exams, and classroom atmosphere (Lai & Ting, 2013).

However, teachers could provide suggestions or rewards according to the students' urges of learning strategies to motivate them to learn. For example, except for Fiona, all the other 11 participants' responses suggested that 'Topic Familiarity' was a powerful attractor state that governed their writing performances. Most of the students reported the emotions of boredom and apathy in their writing tasks. They needed a qualified tutor to help them improve their writing skills; however, such a tutor was not easy for them to find. A teacher could provide explicit instructions on how to solve such a problem in order to motivate the students to improve their writing skills. Therefore, the teachers need to know the students' conceptions in the first instance. If a student looks for approval, then the teacher could to some extent predict that the positive feedback is more likely to be accepted by the student.

Third, the teachers could draw some connection from what the students have learnt in the classroom to their real lives. In this study, 'Vision' was identified as a powerful attractor state. The students' visions reflected 'the future, the ideal, and the desire for deliberate change' (Chan, 2014, p. 245). The teachers could

demonstrate how what the students have learnt in the classroom is important to their real lives. The students may be motivated to learn if they realise that they may use the knowledge in their career.

Regarding implications for students, the emerging themes of the affective patterns (section 5.3) may be helpful to assist a student to rebuild his/her confidence in learning. For example, negative emotions were not always debilitating to the performance in this study. In contrast, negative emotions or ambivalent emotions can sometimes have positive effects on the performance. In addition, if a student feels that he/she is unmotivated or amotivated to learn, such feelings may not be a desperate thing. 'Amotivation' or 'Neutral Attention' was not some state unusual to be identified from the students' profiles. Furthermore, as Eric's profile suggested, a learner type was not static and may change from time to time. The students are open to the possibilities to change themselves if they want. The *Nonstatic Cyclic Interacting Model* which was presented in section 5.6 can also support this argument. If the students are in a passive state or have already lost the confidence in learning, they might be encouraged by the above evidences from other students. They can expand their thinking about themselves and try to rebuild their confidence in learning.

Confident FL students could learn that FLA is a developmental and dynamic process. Changes may occur at any level all the time. They are able to anticipate and monitor such changes to some extent. For example, a cyclic interaction between the three layers was identified from the model which described iterative processes. A student may observe a change happening from the third layer at point  $(t-1)$  which will be the initial condition for elements from the first layer at

point *t*. He/ She could also identify the reasons for such changes in order to be ready for such changes and to adapt to it quickly in the future.

### **5.7.3 Limitations and Future Research Agenda**

The main limitation for this multiple-case study was that there was not enough space to enable me to give a full description of each learner. Although I described the first learner Alex's self-reported performance trajectories in full and ensured that all of the 12 participants' profiles followed the same format; different readers may be interested in understanding different learners other than Alex. It could be possible to replicate my study in the future. I would suggest having a smaller sample in that case. In addition, I would also suggest having an in-depth comparison between the learners from the same archetype. In this study, seven learner types were identified. In the future, I would suggest researchers to conduct a quantitative research first in order to categorise a group of learners into different types. Afterwards, an in-depth qualitative research could be conducted on a focused group of learners who are considered as belonging to the same archetype.

Regarding my future research interests, I look forward to triangulating the emotional components from *the Dynamic Model of Foreign Language Development* by utilising the Geneva Emotion Wheel (GEW) which is a dimensional instrument aiming to measure affective reactions to different events and situations (Scherer, 2005). In addition, I also look forward to employing a DST approach to study other FL phenomena. As MacIntyre *et. al.* (2014) argued, DST was 'a way of thinking about the world and a way of addressing questions

that differs from traditional approaches’ (p. 428). Although a DST approach might ‘continue to be “cool” enough to attract developmental psychologists with its fresh insights and novel techniques yet strive to become “hot” enough to deliver robust findings, consistently and convincingly, through powerful analytical tools’ (Lewis, 2011, p. 283); I see its potentials of ‘shedding light on as yet unresolved issues and providing inroads into uncharted areas’ (MacIntyre *et. al.*, 2014, p. 420). Therefore, I am interested in continuing to study the FL phenomena through the lens of DST.

## **5.8 Conclusions**

In this final section of my thesis, I will summarise the main findings from my multiple-case study. A three-layer model, *The Dynamic Model of Foreign Language Development* is proposed to describe the relationship between the self-perceived affective experiences of a group of learners and their self-evaluated performances in an FL classroom (in response to the main research question).

First, this multiple-case study which I conducted with 12 second-year Chinese students of English from a Foreign Language University in China added different conceptions from a second order perspective to the FL affective experience literature (in response to the first subsidiary research question). Emotional ambivalence which referred to ‘the simultaneous experience of positive and negative emotions regarding an object, event or idea’ (Fong 2003, p. 2) was identified as a novel term in the SL/FL area. The learners reported a limited number of emotions throughout the time window. The reported number of emotions ranged from six (Lucy & Nancy) to ten (Fiona) which were categorised



into limited numbers of affective patterns ranging from six (Fiona & Peter) to nine (Bruce). Such findings appear to validate Dörnyei's (2014) argument of the self-organising capacity. Although the participants were completely open to report their emotions, only a limited number of emotions were reported due to the self-organising capacity.

Second, from the 12 participants' profiles, I found that their emotions changed constantly in terms of type and intensity over time. These emotions differed in various contexts and interacted with other motivational and cognitive factors (in response to the second and the third subsidiary research questions). The inseparable nature of the cognitive, emotional and motivational factors was identified from the participants' responses. These factors operated as three main forces within an attractor basin and would finalise into a relatively stable state, which was termed as an attractor state. Different attractor states governed different contexts, i.e. different subsidiary systems.

Third, some of the participants were identified as having similar affective profiles. In the meantime, similar self-reported performance trajectory profiles were identified from the same group of people as above (in response to the fourth subsidiary research questions). In other words, some of participants reported similar affective experiences and similar self-reported performances at the same time (e.g. Amber and Cindy).

To sum up, the *Dynamic Model of Foreign Language Development* consists of three layers and interactions between these change over time. At a collective level, the relevant attractor states from the second layer which were determined

by three main forces from the first layer contribute to making up the relevant learning experiences from the third layer. In other words, the learners' self-reported performance trajectories reflect how one or a series of attractor state(s) converge and disperse from time to time. The combination of all the subsidiary models contributes to the learner's FL development. The components from the three layers are inseparable and closely interact with one another. This model can be used to illustrate the process of how the preconceived unlimited numbers of potential factors can be reduced into limited and countable ones via the interactions between the three layers.

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## Appendices

### Appendix 1.1

(调研日志)

◇ 背景

(请详细描述考试/活动/事件的发生背景)

◇ 情感

(请详细描述你当时的情绪【可以参照事件发生前，发生时，和发生后的顺序进行描述】)

◇ 结果

(请自我评估本次考试/活动/事件)

◇ 评估

(你如何评价这个考试/活动/事件，你从中学到了什么)

## **Appendix 1.2**

### **(Research-oriented Diary, Translated Version of Appendix 1.1)**

#### ✧ Context

(Please describe the context of this exam/activity/event.)

#### ✧ Emotion

(Please describe your emotions. You may like to use this structure: Before – During –After.)

#### ✧ Result

(Please provide your self-evaluation of your performance.)

#### ✧ Evaluation

(What have you learnt from this exam/activity/event?)

## Appendix 2.1

### (调查问卷)

◇ 请问你对于本周自己英语（词汇/语法/听力/阅读/口语/写作）能力与熟练程度有怎样的评价？

◇ 当你收到教师的成绩反馈后有什么样的情感，请详细描述。

◇ 你的短期目标或者学习动机是什么？

◇ 你的长期英语学习目标是什么，和之前相比有变化吗？

◇ 你还有什么其他想反馈的想法？



## Appendix 3.1

### (访谈列表)

◇ 在你学习英语（词汇/语法/听力/阅读/口语/写作）某一个方面时候，你认为最重要或者和你考试成绩密切相关的是什么？

◇ 你怎么认为老师给予你的成绩/表现反馈？

◇ 在学习过程中，你最在意的事情是什么，随着时间的推移可否有变化？

◇ 在之前的两周的学习中，你可否感觉到有什么事情增加/持续/变化/削弱了吗？

◇ 你认为你的情绪和你的考试自我评估是怎样的关系？

## **Appendix 3.2**

### **(Interview Schedule, Translated Version of Appendix 3.1)**

- ✧ What do you think is the most important or the most relevant issue through learning in terms of your vocabulary/ grammar/ listening/ reading/ speaking/ writing aspect?
  
- ✧ How did you feel after you received the feedback from your teacher?
  
- ✧ What do you care about most through learning? Has it changed over time?
  
- ✧ What has increased/continued/changed/decreased in the last two weeks?
  
- ✧ What do you think of the relationship between your self-perceived affective experiences and your self-reported performances?

## Appendix 4.1 GALC

Admiration/Awe	admir*	ador*	awe*	dazed	dazzl*	enrapt*	enthrall*
Amusement	amus*	fun*	humor*	laugh*	play*	rollick*	smil*
Anger	anger	angr*	cross*	enrag*	furious	fury	incens*
Anxiety	anguish*	anxi*	apprehens'	diffiden*	jitter*	nervous*	trepida*
Beingtouched	affect*	mov*	touch*				
Boredom	bor*	ennui	indifferen*	languor*	tedi*	wear*	
Compassion	commiser*	compass*	empath*	pit*			
Contempt	contempt*	denigr*	deprec*	deris*	despi*	disdain*	scorn*
Contentment	comfortabl'	content*	satisf*				
Desperation	deject*	desolat*	despair*	desperat*	despond*	disconsolal'	hopeless*
Disappointment	comedown	disappoint*	discontent*	disenchant	disgruntl'	disillusion*	frustrat*
Disgust	abhor*	avers*	detest*	disgust*	dislik*	disrelish	distast*
Dissatisfaction	dissatisf*	unhapp*					
Envy	envious*	envy*					
Fear	afraid*	aghast*	alarm*	dread*	fear*	fright*	horr*
Feelinglove	affection*	fond*	love*	friend*	tender*		
Gratitude	grat*	thank*					
Guilt	blame*	contriti*	guilt*	remorse*	repent*		
Happiness	cheer*	bliss*	delect*	delight*	enchant*	enjoy*	felicit*
Hatred	acrimon*	hat*	rancor*				
Hope	buoyan*	confident*	faith*	hop*	optim*		
Humility	devout*	humility					
Interest/Enthusiasm	absor*	alert	animat*	ardor*	attenti*	curi*	eager*
Irritation	annoy*	exasperat*	grump*	indign*	irrita*	sullen*	vex*
Jealousy	covetous*	jealous*					
Joy	ecstat*	elat*	euphor*	exalt*	exhilar*	exult*	flush*
Longing	crav*	daydream*	desir*	fanta*	hanker*	hark*	homesick*
Lust	carnal	lust*	climax	ecsta*	orgas*	sensu*	sexual*
Pleasure/Enjoyment	enjoy*	delight*	glow*	pleas*	thrill*	zest*	
Pride	pride*	proud*					
Relaxation/Serenity	ease*	calm*	carefree	casual	detach*	dispassion'	equanim*
Relief	relie*						
Sadness	chagrin*	deject*	dole*	gloom*	glum*	grie*	hopeles*
Shame	abash*	asham*	crush*	disgrace*	embarras*	humili*	shame*
Surprise	amaze*	astonish*	dumbfounc'	startl'	stunn*	surpris*	aback
Tension/Stress	activ*	agit*	discomfort'	distress*	strain*	stress*	tense*
Positive	agree*	excellent	fair	fine	good	nice	positiv*
Negative	bad	disagree*	lousy	negativ*	unpleas*		

## Appendix 4.2 GRID

BULGARIAN	CHINESE (Taiwan)	CHINESE (Hong Kong)	DUCTH	ENGLISH	ESTONIAN	FINNISH
презрение	輕視	輕視	Minachting	Contempt	Põlgus	Halveksunta
отвращение	厭惡	厭惡	Walging	Disgust	Vastikas	Inho
гнев	生氣	忿怒	Kwaadheid	Anger	Viha	Suuttuminen
раздражение	惱人	煩躁	Irritatie	Irritation	Ärritus	Ärtymys
омраза	憎恨	憎恨	Haat	Hate	Vihkamine	Viha
ревность	妒忌	妒忌	Jaloezie	Jealousy	Armukadedus	INUSTASUKKAINUS
страх	恐懼	恐懼	Angst	Fear	Hirm	pelko
безпокойство	焦慮	焦慮	Ongerstheid	Anxiety	Ärevus	Abdistus
стресс	壓力	壓力	Stress	Stress	Pingesolek	Stressi
отчаяние	絕望	絕望	Wanhoop	Despair	Meeleheide	Epätoivo
изненада	驚訝	驚訝	Verrassing	Surprise	Üllatus	Yllättyminen
интерес	感興趣	感興趣	Interesse	Interest	Huvi	Kiinnostus
радост	歡樂	歡樂	Blijheid	Joy	Rõõm	Ilo
удовольствие	愉悅	愉快	Plezier	Pleasure	Nauding	Mielihyvä
гордость	驕傲	自豪	Trots	Pride	Uhkus	Ylpeys
счастье	快樂	幸福	Gelukkigheid	Happiness	Õnnelikkus	Onnellisuus
задоволство	滿足	滿足	Tevredenheid	Contentment	Rahulolu	Tyytyväisyys
любов	愛	愛	Liefde	Love	Armastus	Rakkaus
разочарование	失望	失望	Ontgoocheling	Disappointment	Pettumus	Pettymys
сочувствие	同情	同情	Medelijden	Compassion	Kaastunne	Myötätunto
вина	罪惡感	內疚	Schuld	Guilt	Süü	Syylisyys
срам	羞愧	羞愧	Schaamte	Shame	Häbi	Häpeä
тыга	悲傷	悲傷	Verdriet	Sadness	Kurbus	Suru
да си паранен	受傷害	受傷害	Gekwetst zijn	Being hurt	Solvumine	LOUKKAMISEN



### Appendix 4.3

#### Affective Codes (English, Chinese and Code)

Number	English	Chinese	Code
1	Admiration	钦佩	AD
2	Amusement	消遣	AM
3	Anger	生气	AG
4	Anxiety	焦虑	AN
5	Apathy	漠不关心	AP
6	Being Hurt	受伤害	BH
7	Being Touched	被感动	BT
8	Boredom	无聊	BO
9	Compassion	同情	CP
10	Confidence	自信	CF
11	Contempt	轻视	CT
12	Contentment	满足	CO
13	Desperation	绝望	DE
14	Disappointment	失望	DA
15	Disgust	厌恶	DG
16	Dissatisfaction	不满意	DS
17	Enjoyment	愉快	EN
18	Expectation	期待	EX
19	Fear	恐惧	FE
20	Feeling Love	爱	FL
21	Gratitude	感激	GR
22	Guilt	内疚	GU
23	Happiness	幸福	HA
24	Hatred	憎恨	HT
25	Humility	谦逊	HU
26	Interest	感兴趣	IN
27	Irritation	烦躁	IR
28	Jealousy	妒忌	JE
29	Pride	自豪	PR
30	Relaxation	放松	RL
31	Resignation	无奈	RS
32	Sadness	悲伤	SA
33	Shame	羞愧	SH
34	Surprise	惊讶	SU
35	Stress	压力	ST

## Appendix 4.4

LONGITUDINAL QUALITATIVE DATA SUMMARY MATRIX						
DATA TIME POOL/POND: FROM ___/___/___ THROUGH ___/___/___						
STUDY: _____ RESEARCHER(S): _____						
(when possible or if relevant, note specific days, dates, times, periods, etc. below; use appropriate DYNAMIC descriptors)						
INCREASE/ EMERGE	CUMULATIVE	SURGE/EPIPH/ TURN POINT	DECREASE/ CEASE	CONSTANT/ CONSISTENT	IDIOSYN- CRATIC	MISSING
DIFFERENCES ABOVE FROM PREVIOUS DATA SUMMARIES						
CONTEXTUAL/INTERVENING CONDITIONS INFLUENCING/AFFECTING CHANGES ABOVE						
INTERRELATIONSHIPS		CHANGES THAT OPPOSE/HARMONIZE WITH HUMAN DEV/SOCIAL PROCESSES		PARTIC/CONCEPT RHYTHMS (phases, stages, cycles, etc. in progress)		
PRELIMINARY ASSERTIONS AS DATA ANALYSIS PROGRESSES (refer to previous matrices)						
						THROUGH-LINE (in progress)

## Appendix 5.1

### Informed Consent Form (Chinese)

我的论文的题目是：从动态系统理论角度研究自我评估的情感与外语考试表现的关系

姓名：肖鸾仪

科研机构：英国华威大学

电子邮箱：[Luanyi.Xiao@warwick.ac.uk](mailto:Luanyi.Xiao@warwick.ac.uk)

参与者姓名

亲爱的同学，

我在英国华威大学教育学院攻读博士学位。此次研究目的是了解在外语学习，尤其是在中国的英语学习者中，自我评估的情感与外语表现的关系。

您的回答仅用于我的博士论文，我将严格保守秘密。

非常感谢您的合作！

## **Appendix 5.2**

### **Informed Consent Form (English)**

Research Topic: A Multiple-Case Study of Self-perceived Affective Experiences and Self-reported Foreign Language Performances from a Dynamic Systems Theory Perspective

Name of the Researcher: Luanyi XIAO

Organization: University of Warwick

Email: [Luanyi.Xiao@warwick.ac.uk](mailto:Luanyi.Xiao@warwick.ac.uk)

Name of the Participant

Dear Friend,

I am a PhD student from the University of Warwick. I am doing a research to explore the relationship between the self-perceived affective experiences of a group of Chinese learners of English and their self-reported performances. Your answers will be kept strictly confidential and will only be used with your consent.

Thank you very much for your support!

**Application for Ethical Approval for Research Degrees  
(MA by research, MPHIL/PhD, EdD)****Name of student**

Luanyi XIAO (1163640)

**Project title**

A Multiple-case Study of Students' Perceptions, Affective Experience, and Foreign Language Classroom Learning from a Dynamic Perspective

**Supervisor:** Professor Dr. David Wray**Funding Body (if relevant):** N/A

Please ensure you have read the Guidance for the Ethical Conduct of Research available in the handbook.

**Methodology**

Please outline the methodology e.g. observation, individual interviews, focus groups, group testing etc.

Four measures will be employed for data collection: Diary, Questionnaire, Semi-structured Interviews, and Class Observations.

15 participants will be studied over 18 weeks from 12 April to 20 June and from 1 September to 31 October. The reason for the selection of the above two periods of time is that, in the selected university, this period covers 7 regular exams (twice a month), 2 big exams (one final and one mid-term exam) and one English Oral Competition, which may significantly affect participants' emotions, motivations and learning performance.

Participants will each be observed once a week as they attend the class of their *Comprehensive English* module. This module has been selected for classroom observation study because it includes all kinds of English activities including speaking, writing, listening, reading and grammar. Participants will be asked to write a diary once a week after their attendance at the observed class and provide copies of their diary entries once a week to me for constant comparison. They will be interviewed twice a month after they have received feedbacks after their regular tests, big exams and the competition. Their interviews will be audio-recorded. They will also be asked to complete a questionnaire consisting largely of open-ended questions to supplement the written information gathered from the diaries. The questionnaires will be distributed twice per month and participants will be given several days in which to complete them. The diary and questionnaire may garner similar information from participants but this will be done over different time with the diary gathering short term responses and the questionnaire medium term. Class

Observation is applied for the purpose of being involved in the same context with the participants. Therefore, I could obtain the knowledge of context about the classroom activities.

*Data Analysis:* Nine individual interviews of each participant will take place at two week intervals. The interviews will be audio-recorded and the transcript of interviews will be interpreted and analyzed using NVivo software for qualitative data analysis. Also, the data from the Diaries will be analyzed using NVivo as will data gathered from open-ended questionnaire responses. This study aims to investigate the non-linear combination of traits from a holistic perspective. Because of this categories for analysis will not be predetermined, but analysis will, rather, be carried out inductively. The range of methods used in the study will have the added benefit of helping to triangulate the analysis.

### **Participants**

Please specify all participants in the research including ages of children and young people where appropriate. Also specify if any participants are vulnerable e.g. children; as a result of learning disability.

15 Chinese University Students of English

In terms of the ideal number of participants, Bowden (1995) suggests that around 15 participants create a reasonable chance to study the variation for phenomenographic studies.

The participants are from a Foreign Language University in China. A number of second-year Chinese students of English will be selected at random from one class and asked to volunteer to take part in the study. The target sample size will be 15 students. All of these students are studying a degree in English. The first reason for choosing second-year university students instead of year one, three or four is because if the learners are very confident English speakers, they may not have strong negative emotions about learning English as students in other years may have. Secondly, another reason is according to the possible access of the participants. Since this study is an in-depth investigation across six months, year one students are new to university and busy with the military training while year three students are in their intern period. Therefore, it seems that the year two students are the most suitable participants for this research.

### **Respect for participants' rights and dignity**

How will the fundamental rights and dignity of participants be respected, e.g. confidentiality, respect of cultural and religious values?

This study will follow the standards identified in BERA (British Educational Research Association) to protect the participant's rights, cultural and religious values and well-being.

All participants will be volunteers and they will be assured that they can withdraw at any point during the research. The participants will be treated equally, with dignity and without prejudice in terms of race, gender, religious, cultural value, age, and any other significant difference. All participants will give written voluntary informed consent. Participants will

be informed of the full procedures and nature of this study. No potential predictable detriment is identified at present arising from the process of the study.

### **Privacy and confidentiality**

How will confidentiality be assured? Please address all aspects of research including protection of data records, thesis, reports/papers that might arise from the study.

I, as the researcher of this current study, will comply with the legal requirements regarding the storage and use of personal data from the Data Protection Act (1998) and any subsequent similar acts.

All participants' names will be coded and the equivalent code list will be saved in a Zip file with a password. Participant responses will be classified by the codes and are also saved in a Zip file in order to protect them from the risk of social injury.

Regarding the classroom observation, informed consent will be obtained by the agreed access to the classroom before the observation and the data gathered will be used appropriately. All participants are volunteers and will be treated with respect. In terms of the ethics of interviewing, participants' names are coded and recorded contributions including tapes and written forms taken from the interviews will be used according to the participants' wishes. Regarding the ethical consideration of questionnaires, in this study, the students' names are required and only known by the researcher, because their responses to the questionnaire will relate to their interview responses and diaries. The name section of these questionnaires will be erased and replaced by codes in order to protect the participants' privacy.

**Consent** - will prior informed consent be obtained?

- from participants? Yes/No      from others? Yes/No

- explain how this will be obtained. If prior informed consent is not to be obtained, give reason:

A written consent form will be provided to all participants prior to the research. In the written consent form, the full procedure, methodology and nature of this study will be laid out specifically. Before the research, participants will learn about the risks and the ways that their rights will be protected. The participants will gain a full understanding of this study and are able to have a reasonable judgement based on the potential consequences of their decisions. All participants will be volunteers and can withdraw at any point during the research.

- will participants be explicitly informed of the student's status?

Yes, participants will be free to discontinue the research at any time.

### **Competence**

How will you ensure that all methods used are undertaken with the necessary competence?

In common law jurisdictions, adults are presumed competent to consent. In this study, all participants are university students and their ages are over 18. As emphasised in BERA, all methodologies and methods must contribute to “the community spirit of critical analysis and constructive criticism that generates improvement in practice and enhancement of knowledge” (p. 10). Regarding the competence of methods employed in this study, they are used to answer the research questions. The purpose of this study is to investigate the dynamism of foreign language affect and classroom learning and performance. The researcher has successfully completed both the Foundation and Advanced Research Methods courses, and all methods used in the study will be fully discussed beforehand with my supervisor and piloted with similar students.

### **Protection of participants**

How will participants’ safety and well-being be safeguarded?

All participants will be volunteers and can withdraw at any point during the research. The participants will be treated equally, with dignity and without prejudice in terms of race, gender, religious, cultural value, age, and any other significant difference. All participants will give voluntary informed consent. Participants will be informed of the full procedures and nature of this study. No potential predictable detriment is identified at present arising from the process of the study.

### **Child protection**

Will a DBS (Disclosure and Barring Service formerly CRB) check be needed?

Yes/No (If yes, please attach a copy.)

The research will involve fully consenting adults in a University in China. DBS requirements do not, therefore, apply.

### **Addressing dilemmas**

Even well planned research can produce ethical dilemmas. How will you address any ethical dilemmas that may arise in your research?



One ethical dilemma may arise in my research is that if the student exposes his or her negative emotion in foreign language learning which strongly interferes with the motivation to learn. However, the participant may not want the teacher or parents to know about this situation. As the researcher, I will promise confidentiality unless I am concerned about his or her mental health and daily learning performance. Regarding this dilemma, what I guarantee is that the content of our conversation between the participant and me is full confidential. But if the situation is too severe and may seriously be harmful to the participants daily life and well-being, then the situation will be reported to the head of the department or police accordingly if necessary, and this explained fully to the participant.

### **Misuse of research**

How will you seek to ensure that the research and the evidence resulting from it are not misused?

All evidence and references used in my study are correctly quoted and automatically edited by End-note. The latest version of the same book will be referred to and evidence is from original source. Illustrations will be written in plain English in case of misunderstanding.

Data and my interpretations of it will only ever be made available to myself and my supervisor. Thus any use made of the data will be my own responsibility.

### **Support for research participants**

What action is proposed if sensitive issues are raised or a participant becomes upset?

A comfortable place and environment will be provided for the participants during the research. If the participants feel upset, they will be offered the opportunity to withdraw at any time according to their wishes. Participants will be informed that the sensitive part of their responses will be confidential to the researcher and themselves and, if reported directly in the resulting thesis (or papers arising from this) will only ever be reported anonymously. The data will be destroyed after a predetermined time.

### **Integrity**

How will you ensure that your research and its reporting are honest, fair and respectful to others?

All finding will be accurately described and traceable to the original data with the analysis process being described transparently. The participants will be treated equally, with dignity and without prejudice in terms of race, gender, religious, cultural value, age, and any other significant difference. They will be given access, if they desire it, to the final report and suggestions of this study based on their self-reported information.

What agreement has been made for the attribution of authorship by yourself and your supervisor(s) of any reports or publications?

A number of papers will be produced from this research, and the normal attribution will be Luanyi Xiao as the first author and my supervisor Professor David Wray as the second author.

**Other issues?**

Please specify other issues not discussed above, if any, and how you will address them.

N/A

**Signed**

**Research Student:**



**Date 25/02/2014**

**Supervisor:**



**Date: 25/ 02/2014**

**Action**

Please submit to the Research Office

**Action taken**

Approved

Approved with modification or conditions – see below

Action deferred. Please supply additional information or clarification – see below

Name

*Geoff Lindsay*

Date

*6-3-14*

Signature



**Stamped**

**Notes of Action**