

Studies in Second Language Learning and Teaching

Department of English Studies, Faculty of Pedagogy and Fine Arts, Adam Mickiewicz University, Kalisz SSLLT 9 (1). 2019. 83-116

http://dx.doi.org/10.14746/ssllt.2019.9.1.5

http://pressto.amu.edu.pl/index.php/ssllt

Reframing the L2 learning experience as narrative reconstructions of classroom learning

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Abstract

In this study we investigate the situated and dynamic nature of the *L2 learning experience* through a newly-purposed instrument called the *Language Learning Story Interview*, adapted from McAdams' life story interview (2007). Using critical case sampling, data were collected from an equal number of learners of various L2s (e.g., Arabic, English, Mandarin, Spanish) and analyzed using qualitative comparative analysis (Rihoux & Ragin, 2009). Through our data analysis, we demonstrate how language learners construct overarching narratives of the L2 learning experience and what the characteristic features and components that make up these narratives are. Our results provide evidence for prototypical nuclear scenes (McAdams et al., 2004) as well as core specifications and parameters of learners' narrative accounts of the L2 learning experience. We discuss how these shape motivation and language learning behavior.

Keywords: L2 learning experience; language learning story interview; qualitative comparative analysis

1. Introduction

A longstanding emphasis within the field of language learning and use is a focus on contextual and relational features of the second language (L2) classroom and the learning experience, aspects which are thought to play a key part in initiating and sustaining L2 learning motivation (see e.g., Joe, Hiver, & Al-Hoorie, 2017). Although the role of the learning context and experience has been recognized for decades (e.g., Kramsch, 2008; van Lier, 2004), this aspect of L2 motivation theory is arguably the least theorized (Ushioda, 2011, p. 201). As guidance, Dörnyei (2009b) has described the L2 Learning Experience as the "situated, 'executive' motives" (p. 29) and "the causal dimension" (Dörnyei, 2005, p. 106) relating to the impact of the teacher, the curriculum, the peer group, or the experience of success. However, little work has been done since to clarify the role of such executive motives and the mechanisms underlying their causal effect. In this study, we set out to re-theorize the language learning experience using insights from McAdams' integrative life narrative dimension (McAdams, 2012). This framework originates in the work of scholars who proposed a narrative model of psychology and individual differences (see McAdams & Pals, 2006), and it has more recently been adapted as a novel framework for individual differences research in the psychology of language learning (Dörnyei & Ryan, 2015). Our primary objective in developing such a study was to investigate the situated and dynamic nature of the L2 learning experience. By undertaking such a study we aimed to develop insight into individuals' own representations of their pathways of development and language

learning achievements, and to subsequently draw on this to provide a more finely grained understanding of the contribution of the L2 learning experience in motivating language learning behavior.

2. Literature review

2.1. The L2 learning experience

For more than a century, empirical work in education has acknowledged the notion that the learning experience exerts an influence on individuals' attitudes and perceptions to learning (Nolen, Horn, & Ward, 2015). In the realm of L2 learning and use, the understanding that learner characteristics, behavior, and development can be influenced by various competing temporal and situational factors has also been recognized for decades (Larsen-Freeman, 2015b). One central motivational component, which originates in Gardner's (1985, 2010) model under the label of *attitudes toward the L2 learning situation or course*, is comprised of evaluation of the teacher and evaluation of the course. In its various incarnations (e.g., Dörnyei, 2005, 2009b; Noels, 2001; Ushioda, 2001) the association between this component and language learning is hypothesized to be both positive and causal. For instance, Masgoret and Gardner's (2003) metanalysis of 75 studies reports that the correlation between attitudes toward the learning situation and grades is r = .24, with a modest effect size of d = .49.

Others have expressed more reservation about any direct effect the learning situation and learning experience might have on outcomes of interest. For example, Gardner (2007), commenting on two studies showing a weak relationship between attitudes toward the language learning situation and L2 achievement, states:

one would expect that in cooperative classes with an experienced and skilled teacher and good teaching materials, etc., that students would have more favorable attitudes toward the situation and thus would learn more English and thus get higher grades . . . , but the simple truth is that we obtain similar [weak] results in many of our studies. (p. 17)

Elsewhere, Gardner (2010) has elaborated on the relationship between the learning situation and achievement, explaining that the relationship between the two is mediated by motivation: "Someone may demonstrate . . . very positive attitudes toward the learning situation, but if these are not linked with motivation to learn the language, they will not be particularly highly related to achievement" (p. 91).

In more recent work based on Dörnyei's L2 Motivational Self System (L2MSS) model, the L2 learning experience has been reported by some as the strongest predictor in the L2MSS (e.g., Lamb, 2012). However, this is far from a widely reported finding, and because an even greater number of studies have

found an inconsistent relationship between the components of the L2 Motivational Self System and actual language achievement or performance (e.g., Al-Hoorie, 2016; Dörnyei & Chan, 2013; Kim & Kim, 2011; MacIntyre & Serroul, 2015; Moskovsky, Assulaimani, Racheva, & Harkins, 2016), few conclusions can be drawn. This is not surprising given that having a positive attitude toward the course and its teacher does not necessarily imply more or better learning, even if the learner perceives that to be the case (Beleche, Fairris, & Marks, 2012). Indeed, it is not an unusual experience for a learner to get the impression that they have learned a subject well, but to subsequently discover gaps in their knowledge that they were unaware of. This misleading impression of mastery can happen for many reasons, and in some instances student satisfaction with learning may represent little more than the illusion or misattribution of having learned (Stark & Freishtat, 2014).

Experimental research from mainstream education highlights the problematic nature of associating positive attitudes toward a course or enjoying a class – measured through course evaluation forms and student evaluation of teachers – with actually learning from it (see Ottoboni, Boring, & Stark, 2016, for one review). A number of experimental studies conducted in different contexts around the world (e.g., Arbuckle & Williams, 2003; Braga, Paccagnella, & Pellizzari, 2014; Carrell & West, 2010) have demonstrated that student satisfaction with a course is often biased and negatively correlated with success in subsequent, more advanced courses. In other words, students who report enjoying the learning situation more tend to be those who, ironically, are likely to have learned less from it. Because effective learning sometimes requires an active struggle and sustained persistence to achieve success, if anything, the relationship between attitudes to a learning situation and student learning can in some cases be negative (MacNell, Driscoll, & Hunt, 2015).

In short, the field's inattention to conceptual and theoretical clarity – perhaps due to greater interest to-date in other self-constructs – has resulted in a slightly ambiguous state of affairs regarding what the L2 learning experience construct captures empirically or should represent substantively, and whether or how it might shape students' motivation and through motivation their achievement in second language learning. Despite being presumed to be a central motivational factor since the inception of the field, important questions about the L2 learning experience construct, as it is currently postulated, remain. We turn now to exploring several promising advances in our field that may assist in clarifying this situation and contribute new insight into the L2 learning experience.

2.2. A complex dynamic systems reframing of the L2 learning experience

Nearly a decade ago, Dörnyei (2008, 2009a) proposed the need to rethink individual difference variables in a situated, dynamic manner, and this has led to more comprehensive work on individual differences that reflects the way they interact with the environment through a complex interplay of synchronic and diachronic variation (Dörnyei & Ryan, 2015). Scholars championing this new way of thinking have called for an integrative framework "to explain the dynamic development of real people in actual contexts" (Dörnyei, 2017, p. 87). One immediately relevant implication of this would be to no longer conceive of the L2 learning experience exclusively as a conventional, modular independent variable. In this new L2 motivation research landscape, complexity theory (CDST) has begun to establish its relevance and explanatory potential (Dörnyei, 2017; Dörnyei, Mac-Intyre, & Henry, 2015). However, this "ontological shift" (Dörnyei & Ryan, 2015, p. 11) also suggests a need to appropriately revise existing understanding of constructs in the field in ways that are compatible with this new way of thinking. Borrowing from a recent practical blueprint that informs the planning and design of CDST research (Hiver & Al-Hoorie, 2016), here we outline and articulate the conceptual considerations which guided us in the design of this study.

A major contribution of CDST to theorizing and researching L2 motivation is its utility for reconceptualizing the objects and phenomena of interest in our field to more closely reflect the way they actually work (Larsen-Freeman, 2013, 2015a). CDST encourages thinking about how parts of the whole relate to each other in L2 motivation research, and because the world is dynamic, the unit(s) of analysis should be equally dynamic – phenomenologically real complex systems situated in context (Hiver & Al-Hoorie, 2016). Thus, adopting a CDST perspective suggests the need to conceptualize and operationalize the L2 learning experience more organically as a relational and soft-assembled complex system (i.e., shaped by initial conditions, contextual affordances, and dynamic change) – one in which the agent in the system, capable of exercising intentional action that contributes to the system's outcomes and processes of change, is the L2 learner himself or herself.

As these developments indicate, language learning motivation is now recognized as a dynamic, situated factor characterized by temporal and contextual variation (Dörnyei, MacIntyre, & Henry, 2015). One advantage of refocusing attention more explicitly on motivational processes than on outcomes and variables, is that it necessitates a more developmental perspective in L2 motivation research (Nolen, Horn, & Ward, 2015). Thus, a particular added value of adopting a CDST perspective for examining the L2 learning experience is an emphasis on processes of change and development that are capable of producing a rich repertoire of L2 motivation behaviors. Initial conditions and histories play a critical role

in systems' processes of becoming (Verspoor, 2015), something the L2 learning experience reflects well. Complex systems grow and change as they adapt dynamically to the problems posed by their surroundings and are characterized by non-finality as they progress iteratively through time (Rose, Rouhani, & Fischer, 2013).

Investigating the L2 learning experience as a complex and dynamic system is also compatible with the idea that context shapes system behavior and its outcomes (Ushioda, 2009). Through their experience in context, complex systems come to anticipate the consequences of certain interactions and seek to adapt to changing circumstances. This notion of interdependence between a context, the individuals studied within that context, and the phenomena of interest has recently come to be discussed more explicitly in relation to L2 motivation (Ushioda, 2015). In the L2 learning experience, context can be seen as an intrinsic, core part of resulting motivated thought and action, and the main implication is that L2 motivation is always situated and thus contextually constrained (e.g., Joe, Hiver, & Al-Hoorie, 2017). Complex systems' openness to the environment gives rise to context-dependent behaviors and this means that contextual factors should be seen as actual dimensions of the L2 learning experience itself. We see the CDST perspective as having unique power to push our thinking in new directions as we attempt to reframe the L2 learning experience in a more dynamic and situated way.

2.3. An integrative life narrative dimension of the L2 learning experience

Psychologists calling attention to the limitations of a more conventional mode of individual differences research to both represent meaningful aspects of individuality and to account for variation (i.e., differences), have proposed a narrative model of psychology and individual differences (e.g., McAdams, 2006, 2012; McLean & Pasupathi, 2011). Drawing on their intellectual mentor Jerome Bruner's work (e.g., 1986, 1987), McAdams and Pals (2006) introduced a radical new way of seeing the subject of interest (i.e., human individuals) in psychology research – a model they termed The New Big Five. This conceptualization of the core of individual differences as narrative in their essence now has over a decade of empirical support from cognitive, developmental, personality, and social psychology research, and complements both the dispositional trait-like and characteristic adaptation (i.e., state) aspects and levels of personality (McAdams, 2018; McAdams et al., 2004; McAdams & McLean, 2013). It has also more recently been adapted as an innovative approach to thinking about and doing individual differences research in the psychology of language learning (Dörnyei & Ryan, 2015).

Narrative approaches to personality suggest that people create meaning and purpose in their lives through the construction of life stories that entail the development of an explicit narrative identity (Singer, 2004). People explain who they are, how they came to be, and where they believe their lives may be going by formulating, telling, and revising stories to consciously legitimize their personal past and their imagined futures (Bruner, 1990). One's narrative identity, in this tradition, is a deliberate, internalized, and analytical life-story of the self that selectively reconstructs the past and anticipates the future, providing an overall sense of coherence and purpose (McAdams et al., 2004). Although it does not discount the performative and discursive functions of narratives that more socially-oriented scholars attend to, this narrative approach to personality differs from a more generic narrative mode of inquiry because it maintains that individuals' accounts of significant life-story episodes (i.e., their narrative identity) express core themes and reveal underlying dynamics of personality (McAdams, 2018; McAdams et al., 2006).

In their work taking stock of progress in the field and reimagining future avenues for exploration in the psychology of language learning, Dörnyei and Ryan (2015) propose that the narrative mode of thought lends itself to "explain[ing] the dynamic ways in which people attempt to understand events, the meanings they ascribe to various experiences, and the ways by which they organize and structure them through storied arcs" (p. 199). They outline a potential framework for a new narrative-based representation of the psychology of the language learner that places the L2 learner's narrative identity – "the specific aspect of an individual's ongoing internal narrative that relates to learning and using a second/foreign language" (p. 202) - at the core of this model and "connects to all parts of the learner's psychology, and both drives and regulates change" (p. 203). This narrative-based representation of the psychology of the language learner is both informed by and premised on a CDST perspective of individual differences that insists on the importance of context, accentuates change, and respects variability. By adopting this integrative framework "to explain the dynamic development of real people in actual contexts" (Dörnyei, 2017, p. 87), this new representation of language learner psychology is able to broaden our understanding of the dynamics of individuality in multilevel nested systems – for instance, by uncovering how language learners' narratives interact with characteristic adaptations to form a broader system, and how these relate to other tiers, constituents, and substrates (e.g., dispositional traits, the learning situation) within the broader framework.

However, while L2 motivation has come to be conceptualized in ways that emphasize its situated, adaptive and dynamic nature, the utility of a narrative model of language learner psychology and individual differences requires more detailed empirical support. With some exceptions, little work has been done to identify and describe typical autobiographical narratives and narrative trajectories, develop a working knowledge of the types of L2 narrative identities learners develop and patterns of change within such a typology. In order to contribute to current understanding in the field, we have adopted a design in this study that

is both aligned with a situated and dynamic perspective (i.e., CDST), and draws on this integrative life-narrative dimension as "the main organizational mechanism – or cohesive device" (Dörnyei & Ryan, 2015, p. 202) – for the L2 learning experience. We set out to explore the following questions:

- RQ1: How do language learners construct overarching narratives of the L2 learning experience?
- RQ2: What are the characteristic features and components that make up these narratives?
- RQ3: What role do these dimensions of the L2 learning experience play in motivating L2 learning behavior?

3. Method

Following established principles of life-narrative research in psychology (see e.g., McAdams, 2012), our design explored the L2 learning experience construct inductively by beginning with concrete observations and qualitative characterizations of the phenomenon itself which we used, subsequently, to develop a more abstract description and understanding of the phenomenon. We did this using a newly-purposed instrument called the *Language Learning Story Interview* (LLSI) – adapted from McAdams' life story interview (2007). The design of this study, thus, fell into the "context of discovery" (McAdams, 2012, p. 17) since we adopted a data-driven approach to exploring the L2 learning experience in order to generate new theoretical insight about this phenomenon of interest.

The analytical strategy we adopted in this study was qualitative comparative analysis (QCA), a method that originates in case-based approaches to researching complex dynamic phenomena (Rihoux & Ragin, 2009). It assumes two very important things about research rarely entertained by other qualitative methods: first, the aim of all research is to provide generalizable findings; secondly, causality can be systematically investigated through qualitative data if the right type and number of cases are analyzed. QCA begins by defining the outcome of interest and casing the outcome (i.e., recruiting a typical sample that will guarantee relevant data about that phenomenon). In order to develop a complex causal explanation of an outcome, data about the conditions thought to influence the outcome are needed. This is called selecting the causal conditions. Conditions are roughly equivalent to how variables are used conventionally, and QCA uses the ones and zeros of Boolean algebra to code these conditions. In the most conventional analysis using discrete variables all the cases are assigned one of two possible crisp membership values for each condition or set included in a study: 1, membership in the set; 0, non-membership in the set.

The results are then summarized in truth table rows to determine which causal conditions, or combinations of conditions, are necessary or sufficient for the outcome being investigated. By solving contradictions and minimizing the causal conditions in order to keep the fewest possible causes that still result in the outcome, the researcher will obtain the parsimonious minimal formula. If the formula holds for all of the cases being compared, the consistency (i.e., the number of cases that share this combination of conditions and also display the outcome of interest) is 1.0. Consistency scores, in general, should be as close to 1.0 as possible.

3.1. Participants

Using critical case sampling, we collected data from college-level (N=8) L2 learners. These eight cases (female = 4; male = 4) were selected from within a larger cohort of language learner respondents enrolled in credit-bearing modern foreign languages at a large public university in the Southeastern USA. All were non-language majors aged between 18 and 24, in their first or second year of college, and were L1 English users. Of the 10 modern foreign languages on offer these participants were all enrolled in either Arabic, Mandarin Chinese, or Spanish, taking up to two years of the language as part of their undergraduate degree requirements. We deliberately sampled these learners from instructed L2 settings – participants reported between two and twelve years of formal L2 learning experience in various languages – to yield more particular information than might be possible from a sample of learners in a non-tutored environment.

3.2. Materials

We developed a novel data elicitation instrument for this study – the LLSI – based on McAdams' life story interview (2007). This protocol (see Appendix A) asked individuals to describe the overall trajectory of their L2 learning experience by classifying this language learning story into chapters, and then to focus on particular scenes that stood out from their story (e.g., high points, low points, turning points, challenging points). Extending this narrative into the future, we also asked respondents to imagine the next chapter in their language learning story in a similar format. Finally, we asked each participant to consider their typical language learning behavior and the value of language learning for them, and then to reflect on any connections or relationships between these and their language learning story. This LLSI instrument was refined through focus groups and piloting with L2 learners unrelated to this study. As researchers, because we represent nearly 15 separate languages learned, we then undertook to further pilot these intermediate versions of the structured interview protocol among ourselves. Minor adjustments were made

and follow-up questions included in the final version to ensure the instrument was clear and would elicit relevant data.

3.3. Data collection

Following ethical approval, our call for participants went out through respective course instructors, and all prospective participants provided their email addresses to the research team. Participation was voluntary and compensated: respondents received a small gift card on completing the interview. Participants were contacted in advance and briefly informed about the interview protocol. This was done under the pretext of gaining greater knowledge of their language learning background (e.g., languages learned, length of L2 learning experience) but in fact served to provide participants with details regarding the unconventional interview structure and allow them thinking time prior to the interview session. All interviews were conducted face-to-face in English and recorded with the signed consent of participants. Each session lasted between 50 and 90 minutes (resulting in roughly 11 hours of recorded narrative data) and took place in a low-key setting to reduce any power distance between researcher and participant. Every effort was made to grant participants the freedom to control the pace and content of the interviews.

3.4. Data analysis

Initial data analysis proceeded collaboratively by reviewing data recordings and transcripts (i.e., totaling roughly 75,000 words) repeatedly. Using a scheme of inductive and descriptive codes, we categorized the data based on episodes elicited from the structured interview (e.g., Was there an instance of a *turning point* in this participant's data? What was the *turning point* for this participant versus another?). From these descriptive codes, we created conceptual maps (Kane & Trochim, 2007) to represent temporal patterns and connections between themes in the narrative data (e.g., an *initial lack of interest* in early *casual exposure to languages* linked to a later *sticky object that sparked interest* in classroom L2 learning). Once done with these preliminary steps, we used qualitative comparative analysis (QCA; Rihoux & Ragin, 2009), the analytical technique we have briefly outlined above.

Our first step here was to define the outcome of interest as a generalized motivation to continue to pursue language learning (i.e., code = "mtl"), because we assumed that the data elicited from each individual through the LLSI would be associated with a meaningful level of this generalized motivation for those individuals to continue to pursue language learning. Next, a truth table algorithm for fuzzy-set QCA (fs/QCA) was set up to summarize the data synthetically. The independent

variables chosen as predictive input conditions in computing the truth tables (see Appendix B) were the descriptive codes we had developed in the conceptual maps. Using the fsQCA 3.0 data analysis software (Ragin & Davey, 2016), each case being compared was assigned membership values ranging from 0 (i.e., non-membership) for each causal condition or "set" to 1 (i.e., full membership) (Ragin, 2009) - scores between these two values indicate partial membership (i.e., relative scores indicate strength), thus the "fuzzy" set (i.e., non-dichotomous) logic. All causal conditions were selected for the analytic moment proper, given the exploratory design. Results tabulated in the truth table rows helped us determine which causal conditions, or combinations of conditions, were necessary or sufficient for the outcome being investigated. Two central indices of fit (i.e., the extent to which causal conditions are necessary and sufficient) in truth table data exploration are consistency (i.e., the degree to which cases that share conditions or combinations of conditions display the outcome of interest) and coverage (i.e., the extent that a causal combination accounts for instances of an outcome) (Ragin, 2009). By omitting several logical remainders, and minimizing prime implicants (i.e., unique or isolated functions and conditions) we obtained a summary of the outcome of interest's central dimensions in the dataset – final model: mtl = f(qq*pl*pq*so*te*ri*rl*nc*my*li*lf*eh*df*ce). Final model fit was analyzed using the Quine-McKluskey algorithm and by running a subset/superset analysis. Solution coverage of the model's configuration was excellent (.99) while the solution consistency also showed excellent definition (i.e., .98). These steps allowed us to adhere to best practice in QCA.

4. Results and discussion

In this section, we present our results as an attempt to capture core parameters of *how* learners construct overarching narratives of the L2 learning experience and *what* those stories look like. We do this first by highlighting prototypical, self-defining, nuclear scenes – highly significant stand-alone scenes actively retrieved by the learners, that revolve around the most important concerns and conflicts in one's life, and which provide the individual with a better understanding of both themselves and others or the world (McAdams et al., 2004) – and then examining their themes revealed through our analysis of the dataset.

4.1. Prototypical, self-defining, nuclear scenes

4.1.1. The initiating scene: Getting into language learning

In comparison to the more intense and specific scenes we elicited from our participants' language learning experience (e.g., a high point, a low point), we expected

that protagonists' beginning encounters with language learning might only be vaguely remembered or thought of mostly as undramatic and banal. However, in our respondents' narrative accounts of "getting into" L2 learning we found the opposite to be the case. This highlights the significance of initial conditions we alluded to in our previous review of the literature. The fact that the opening chapters of all our respondents' language learning stories contained elaborate, varied, and intriguing "ways in" to their first L2 learning experiences (see Table 1) suggests that these initiating scenes can be seen as clearly demarcated initial conditions for subsequent iterative change in learners' L2 learning experience. For some individuals, this exposition was set through discovering their success at first-try with tongue twisters in the language, or their genuine surprise as a child at being dropped into a foreign language classroom while accompanying a parent who had relocated abroad; for others, it was prefaced by exposure to the language through bilingual friends playfully talking trash to each other in it, or by a default placement in the only language offered in the school; yet another stumbled onto the alphabet of the language as a young teenager while browsing YouTube channels and decided to try their hand at learning. These initial encounters with language learning, for all respondents, were rich in specific detail and imagery and conveyed strong enduring affect (e.g., confidence, embarrassment, fear). This is important because the specificity criterion could be thought of as one measure of a scene's subsequent influence on later episodes in the narrative.

Table 1 Representative initiating scenes

Representative scenes	Participant
A learner discovered that she was dropped into a foreign language classroom almost	Jennifer
immediately after relocating abroad with her parents and was genuinely surprised at	
the situation.	
A learner had his first encounters with the L2 through bilingual friends who would play-	Chandler
fully talk trash to each other in it and invite him to mimic them.	
On his first try, a learner discovered his success and facility with complicated tongue	Jonathan
twisters in the new L2.	
One first-time learner stumbled onto the alphabet of the language while browsing his	Jim
favorite YouTube channels as a teenager.	
On her first day of secondary school, a learner was enrolled in L2 classes by her parents	Laura
and felt a sense of anticipation at the newness of it all.	

Cognitively, the retrieval of early self-defining autobiographical scenes is thought to occur first through abstract general categories (i.e., school, friends, travel) and then through an affective response (i.e., how a scene makes them feel at the time of recall) but is also thought to require greater effort to access specific episodic detail (McLean & Fournier, 2008). While none of these initiating scenes were accompanied by introspective analysis and evaluative reflection, a

characteristic of later scenes, we were struck by the ease with which all respondents were able to call up these nuclear episodes of getting into L2 learning in the first place. And, because we found no instances in which these initiating scenes lacked specificity, our data suggest that a broadly applicable structural characteristic of an informative narrative of the L2 learning experience is an initiating scene which underpins all later temporal and causal coherence of that narrative. Thus, in iterative processes of change such as those which are part of individuals' language learning stories, a system's initial conditions can be seen as complex causal factors which produce the subsequent outcome, which then produces the next, which itself produces the one after that, a pattern which repeats successively through time (van Geert, 1994; Verspoor, 2015).

4.1.2. The sticky object scene: Sparking interest in language learning

We were intrigued to discover that, despite their elaborate initiating scenes, none of our protagonists expressed an initial interest in L2 learning. What we did find, however, were accounts in all participants' data of a prototypical scene (see Table 2) in which "a sticky object" – a thing, idea, or even person which attracts emotions and to which emotions are attached, depending on the history of contact with it (Ahmed, 2004, 2010) – sparked interest in the L2 learning process at various intermediate points in time. This could be seen as parallel to Lorenz's notion of a butterfly effect in which seemingly small events have an unforeseen influence on a system's functioning. For one respondent, the desire to join the navy after high school (a notion/desire) was the sticky object that sparked this interest after an early chapter of disinterest and not caring that lasted several years. For others, the sticky object was a PC game (a thing) in the foreign language routinely played at home or picking up a book (a thing) that sparked a new outlook. For another, it was the loss of a mentor and then of a significant other (people) in short succession – the first of whom passed away and the other who moved away for good – that triggered a new-found interest in the process of language learning.

Table 2 Representative sticky object scenes

Representative scenes	Participant
A learner stumbled on the book Fluent Forever which kindled an interest in learning mul-	Jim
tiple languages simultaneously.	
A learner dreamed of joining the navy after school and realized that language learning	Alex
might help him do so. This sparked an interest in L2 learning he had never experienced	
due to negative prior L2 learning experiences.	
A learner became inspired to enroll in L2 classes to learn the language used as part of a	Kayla
PC game they routinely played at home.	

A learner's mentor passed away, shortly after which his partner left him. The attachment he felt to both individuals (one a L2 teacher, the other an L2 user) spurred him to learn an L2 in order to recreate the previous bond he felt with them.

Chandler

Jonathan

A learner falls in love with the traditional L2 writing system, which allows him to de-stress from his other L2 learning which causes him anxiety.

When thinking about these prototypical scenes in which sticky objects stimulated interest, they were triggered in the moment by contextual affordances and were closely associated with excitement, aspirations, and the stimulation of curiosity. As such, even though the potential for interest is in the individual learner, through these sticky objects the environment defined the direction of interest and contributed to its development. This type of interest more closely corresponds with situational-affective interest (Hidi & Renninger, 2006). Once this situationalaffective interest was triggered and focused the individuals' attention on language learning, subsequent chapters and episodes showed that participants came to value the subject matter or the learning process more and desired to explore that learning more fully. In episodes following the sticky object scenes, respondents reported finding a sense of what was "in it" for them, spending more time on L2 learning activities and persisting in the face of learning challenges, feeling more rewarded by this effort, and progressing to deeper forms of engagement (e.g., for self-actualizing purposes). This type of interest that developed can be thought of as individual-cognitive interest - the type of interest maintained through expressions of task meaningfulness, personal involvement, and social support (Hidi, 2006). Our data suggest that it was this individual-cognitive interest that sustained respondents' investment and engagement in their L2 learning experience as they reported beginning to value opportunities for learning and starting to better regulate their own involvement in these activities.

4.1.3. An overcoming difficulties scene

Like any good story that presents complications or problems requiring resolution as a way of preserving narrative coherence, we found that all our protagonists' narrative accounts of their L2 learning experience contained at least one, but often multiple, self-defining scenes of being confronted by a significant obstacle in language learning and working to overcoming the challenge presented by it. This nuclear scene (see Table 3) involved prototypical episodes such as coming to terms with how their explicit knowledge of language did not afford the communicative capacity for its use, and repeatedly discovering one's inability to accomplish seemingly basic tasks (asking for directions; ordering food) in the language outside the classroom. It ranged from having to confront the realities of one's low proficiency while on a study abroad program in a public and

embarrassing way, to failing every question on a language exam by misinterpreting instructions and subsequently having to meet the instructor personally to explain their performance. For some, it extended also to events such as having to take a year off language learning due to being put on academic probation or offending a foreign language acquaintance due to a lack of awareness of expectations accompanying L2 use in that context. Thus, such scenes of overcoming language learning obstacles appear to be a central part of an informative narrative of the L2 learning experience.

Table 3 Representative overcoming difficulties scenes

Representative scenes	Participant
A learner is put on academic probation and forced to take time off language learning	Alex
but stages a triumphant comeback the next semester and achieves widespread recog-	
nition for his performance and progress in the L2.	
A learner was pushed to learn an L2 she had no interest in and hated it. She became	Tiana
angry at the school system and decided to redouble her pursuit of languages that inter-	
ested her.	
A learner repeatedly discovered her inability to accomplish everyday tasks (e.g., asking	Kayla
for directions; ordering food) in the language outside the classroom and became deter-	
mined to only do them in the L2 until she overcame her embarrassment and frustration.	
A learner confronted the realities of his low proficiency while on a study abroad pro-	Jim
gram in a public and humiliating way which helped him realize he had not taken it seri-	
ously. He became determined to change his outlook and not give up.	
A learner misinterpreted instructions and did so poorly in his L2 exam that he was not	Jonathan
sure he would pass the class. After realizing his mistake, he decided to put the failure	
behind him and do his best regardless of whether he would pass the class.	01 11
A learner offended a new acquaintance (an L2 speaker) by promising to do something	Chandler
but not following through due to ignorance of expectations in that context of L2 use. He	
decided to "own" his mistake and never make the same mistake twice.	

From a narrative perspective, negative and conflicting events are closely associated with meaning making largely because they require more cognitive effort to resolve than positive events (McAdams, 2012). This was true in our dataset both in the sense of individuals' responses to this type of incident as learners, as well as for how they incorporated the scenes into their language learning narratives and assigned causal and thematic coherence to them – a process termed *autobiographical reasoning* (McLean & Fournier, 2008). Participants drew on autobiographical reasoning as a way to establish personal growth connections to challenging situations and language learning events fraught with obstacles. These novel solutions included dimensions such as learning from failure and mistakes, pacing oneself, deliberately not quitting, learning to cope productively, aspiring to something greater, taking initiative in learning, and paying attention to detail. These scenes of overcoming difficulties were used by our

participants as a way of making connections between past experiences and their current self in a way that developed and maintained their overall narrative of the L2 learning experience. For all participants, this scene was self-enhancing because the sense of explanatory coherence it added allowed learners both to learn something new about themselves and generalize to those guidelines from their self-development to other L2 learning events more broadly.

4.1.4. A making human connections scene

The final prototypical nuclear episode which all our respondents' narrative accounts had in common was what we termed a making human connections scene. While there were many variations on this prototypical scene, ranging from friendship to intimacy and unity, all of our participants' narratives of their L2 learning experience contained clear episodes of making connections with other significant individuals and through the relationship developing prosocial goals along the lines of unity and dialog with other people (see Table 4). For some, these events revolved around extremely brief points of contact with others lasting only hours or days that established ideas of belonging and being affiliated with a community of other L2 learners or L2 speakers – even one that was only imagined. The fact that such fleeting encounters with other learners, teachers, or L2 users could have such an anchoring effect speaks to the power of people and to human connections in the L2 learning experience.

Table 4 Representative making human connection scenes

Representative scenes	Participant
A learner was shocked at the end of a semester by his grade, and when he emailed the	Jim
teacher, who had simply made a mistake, the teacher apologized, commended him for	
his effort and recognized his contribution to the class.	
Learners decided to setup a group chat in the L2 outside the classroom and it became	Tiana
their primary means of communication for that semester.	
On the way home from school, a learner met a cashier at a gas station who spoke the	Kayla
L2 being learned and was subsequently introduced to a community of L2 speakers.	
A learner and his assigned partner working on a five-minute oral presentation spent	Jonathan
hours perfecting their assignment together and emerged good buddies.	
A learner sat in a bus behind two L2 speakers and eavesdropped on their conversation	Jennifer
the whole ride, then introduced herself to them before getting off.	
A learner met a wrestler at a bar and was invited to a gym that no tourist or English-	Alex
speaker had visited before.	

While for some, these nuclear episodes of making human connections through and with the L2 were specific to particular encounters, relationships, or between the protagonist and one or only a few other people, there were some

scenes here which captured the idea of being part of a larger community. In these, the respondents' narrative accounts of the events showed their commitment to prosocial goals such as a sense of togetherness, allegiance, or solidarity with other L2 learners and users, and illustrated the unique effect the episode had on their overall L2 learning: that of developing an orientation of belongingness and synchrony with other people through language learning. This is not remarkable given the social purpose of language and the distributed (i.e., between people) nature of group learning experiences, but it is curious in the sense that few respondents in our sample reported extended study abroad experiences and suggests that these human connection scenes are not rare or extraordinary, nor are they contingent only on outside contact with target language speakers and their culture.

Having described how learners construct overarching narratives of the L2 learning experience and what prototypical, self-defining scenes in those stories look like (i.e., through the four prototypical nuclear episodes present in all narrative accounts of the L2 experience), we now scope out to a broader consideration of the core thematic parameters of learners' overarching L2 learning experience narratives, borrowing from McAdams and colleagues' (2006) emotional, motivational, and cognitive categories for narrative accounts.

4.2. Core parameters of learners' narratives

4.2.1. Emotional loading/tone

The first core thematic parameter that is salient in our dataset is that respondents' narrative accounts of key scenes from their L2 learning experience had a characteristic emotional loading or emotional tone, ranging from extreme positivity to extreme negativity. These themes are represented by the fs/QCA "EmoLo/To" designation in Table A1 (see Appendix A). Previous studies have shown that extended narrative accounts of key autobiographical scenes tend to exhibit a particular positive or negative tone and that this affectivity forms the emotional core of one's narrative identity (e.g., Barrett, 2006; McAdams et al., 2004). We found strong support for this in our own data, even apart from the nuclear scenes that were designed to elicit particular emotional values (e.g., a high point, a low point, a failure or regret). In our dataset, scenes and episodes with a positive emotional loading featured the general expression of positive affect such as enjoyment, enthusiasm, and excitement, scenes in which bad things turn to good (e.g., the overcoming difficulties scene), the resolution of events characterized by happy endings, and particular experiences of inspiration, confidence, pride, and triumph which sparked a personal investment that was previously

absent. Scenes and episodes with a negative emotional loading, however, showed unhappy outcomes and events in which good things turned bad, negative affect such as frustration, fear, embarrassment, and discouragement, and the feeling of being intimidated by and exhausted with ongoing L2 learning. The more of these characteristics were present in the scene or episode, the more extreme the emotional loading.

Virtually all the narrative accounts of the L2 learning experience contained a mixture of positive and negative emotional loading, and this is perhaps to be expected in learning situations (Pekrun & Linnenbrink-Garcia, 2012). Such emotional complexity may even be desirable as it is associated with adaptability and with easier, more efficient access to conceptual knowledge (Lindquist & Barrett, 2008). However, on balance, the narrative accounts of these learners who reported being motivated to continue to pursue language learning were more intensely positive than negative in their emotional loading. This suggests that emotional quality and intensity are key metrics connected to the differential role that the L2 learning experience might play in motivating L2 learning. One additional aspect that distinguished the narrative accounts of these protagonists was the sequencing of affective scenes. Scenes with negative emotional loading tended to set up a transition of some sort to scenes with positive emotional loading (e.g., the overcoming difficulties scene). In this way, good scenes emerged from and were accentuated by the narrative contrast with a preceding bad scene. Thus, the quality (i.e., positive/negative), intensity (i.e., high/low), and sequencing (i.e., neg. →pos./pos. →neg.) of the emotional loading/tone in learners' narrative accounts of the L2 learning experience appears to play a central role in how the L2 learning experience motivates L2 learning behavior, and that it is only under the right conditions that the emotional loading of the L2 learning experience has both a positive and causal association with language learning.

4.2.2. Motivational themes

The second core parameter of protagonists' narrative accounts of key scenes from their L2 learning experience was the motivational themes that were connected to the kinds of intentions our participants displayed (i.e., what they wanted and how they went about getting it) in their language learning. Motivational themes in life-narrative accounts have previously been examined from various standpoints, some of which (e.g., McAdams et al., 2006) emphasize their positive association with achievement and responsibility. We also found support for this in our dataset, and these themes are represented by the "MoThem" designation in Table A1 (see Appendix B). One superordinate dimension apparent in our respondents' narrative accounts of the L2 learning experience was the theme of

agency which suggests the volition to assert, expand, and control the self, gain greater personal autonomy and mastery, and empower the individual self. One relatively common expression of agency was a person explicitly saying that an experience provided him or her with a feeling of power. Another involved the participant experiencing an enhanced sense of control over his or her language learning trajectory and destination. The focus on the self in narrative accounts of autobiographical experiences means that these are necessarily agentic, but it is through more deliberate and effective action, thought, or experience, that protagonists are able to strengthen the self and become more powerful agents.

Another superordinate motivational theme which stood out in our data was a theme of personal growth evident in events that served to promote the positive development of the self. For example, the respondent might report that he or she overcame language learning obstacles, learned through failure, effort and mistakes, learned a new lesson about life, came to a deeper self-understanding, reached a higher level of language development, or discovered something new and important about him or herself or learning in general. This theme of personal growth and maturity illustrates how narrative accounts of the L2 learning experience are grounded in the past, relevant to the present, and oriented to the future. When protagonists gain insight and self-awareness, or are strengthened by significant challenges, this can lead to empowerment and a sense of pride and accomplishment that will result in setting new learning goals and plans, as well as taking on new roles and responsibilities in future episodes of their L2 learning experience. Thus, the motivational themes of agency and personal growth are mutually reinforcing, as greater agency feeds into personal growth which in turn engenders personal empowerment. In this way, motivational themes are one particular snapshot of how iterative and adaptive change may take place within the L2 learning experience, and in doing so establish a sustained and dynamic influence on language learning.

4.2.3. Narrative complexity

The third and final core parameter of participants' narrative accounts of key scenes from their L2 learning experience is what others (e.g., McAdams et al., 2004; McAdams et al., 2006) have called narrative complexity. Simple stories of L2 learning experience are likely to contain few characters, straightforward plots, and clear resolutions. Complex stories of L2 learning experience, on the other hand, may have many characters and interwoven plots and may suggest multiple meanings and ambiguous resolutions. Our analysis suggests that high narrative complexity was the rule rather than the exception in learners' autobiographical accounts. Most scenes or episodes showed evidence of mixed emotions, multiple

perspectives or motivations, or a differentiated presentation of the self. These themes are represented by the "NarrComp" designation in Table A1 (see Appendix B). Narrative complexity can be seen as a way of accounting for the elaborateness of the content and structure of key autobiographical scenes, and because more complex (multiple, conflicting) narrative accounts of the L2 learning experience result in more explicit attempts to understand events and ascribe meaning to these various experiences, what we have previously referred to as autobiographical reasoning, this offers one way of establishing a developmentally-oriented index (i.e., one that informs future learning and ongoing development) of learners' narrative accounts of the L2 learning experience.

Narrative complexity was exhibited in our data through respondents incorporating multiple points of view (e.g., role taking), expressing mixed motivations (e.g., doing a single thing for many conflicting reasons) and complex emotional experiences (e.g., mixing opposite emotions in the same scene), or representing contradictory aspects of the self (e.g., as victim and victor) in ways that did not violate the temporal and causal coherence of their narratives. How does this narrative complexity in learners' stories of the L2 learning experience impact their language learning? Our data suggests that narratives of the L2 learning experience with multiple and conflicting thoughts, motivations, and self-images were those that relied more on autobiographical reasoning and metacognition. In this way, we see narrative complexity as a key aspect of learners' narrative accounts of the L2 learning experience associated with learners deriving greater meaning, more coherent interpretations, sharper insights, and more valuable lessons from their narratives that feed back into their ongoing development and language learning.

5. Conclusion

In this study we set out to re-theorize the language learning experience, using insights from McAdams' (2007) integrative life narrative dimension, with a particular focus on its situated and dynamic nature. Borrowing from established research designs of life-narrative research in psychology, we demonstrated how language learners construct overarching narratives of the L2 learning experience and what the characteristic features and components that make up these narratives are. Our results showed that learners' narrative accounts of the L2 learning experience contained four temporally linked prototypical nuclear scenes.

The prototypical *initiating scene* set the exposition for learners' narrative accounts of "getting into" L2 learning, which suggests that specific detail and imagery conveyed in these scenes represents the initial conditions in learners' L2 learning experience which introduced subsequent iterative change in the narrative. The prototypical *sticky object scene* was one in which a thing, idea, or person that attracted

emotions sparked interest in the L2 learning process, which suggests that this is one way learners come to spend more time on L2 learning activities, persist in the face of learning challenges and feel more rewarded by this effort, and progress to deeper forms of engagement. The prototypical *overcoming difficulties scene* revolved around learners encountering a significant obstacle in language learning and working to overcoming the challenge presented by it. This nuclear scene was used by our participants as a way of making connections between past experiences and their current self in a way that developed and maintained their overall narrative of the L2 learning experience. In addition, the prototypical *making human connections scene* showed learners' commitment to prosocial goals such as a sense of togetherness, allegiance, or solidarity with other L2 learners and users, and illustrated the effect this episode had on their orientation of belongingness and synchrony with other people through language learning.

Our results also highlighted core emotional, motivational, and cognitive specifications and parameters of learners' narrative accounts of their L2 learning experience. Analysis of the data indicated that respondents' narrative accounts of key scenes from their L2 learning experience had a characteristic emotional loading or emotional tone, and that in addition to the emotional quality and intensity of these, it was the sequencing of the emotional loading/tone in learners' narrative accounts of the L2 learning experience which held a key place in their L2 learning behavior. With regard to superordinate motivational themes, we found that separate but mutually reinforcing dimensions of volition/agency and personal growth were connected to the kinds of intentions our participants displayed in their language learning. This suggests that the waxing and waning of motivational themes through time is one particular mechanism by which iterative and adaptive change may take place within the L2 learning experience, and in doing so establish a sustained and dynamic influence on language learning. Finally, narrative complexity within the L2 learning experience was associated with learners understanding themselves better, interpreting events more coherently, and learning more valuable lessons from their ongoing narratives. Narrative complexity, thus, appeared to be fundamental to the ways in which the L2 learning experience fed back into participants' ongoing development and language learning.

While our chosen case-based methods allowed us to look at the L2 learning experience in a new light, several limitations remain. First retrospective reports of the kind which made up our dataset are imperfect representations of the reality of language learning encounters. Narrative psychologists agree that elicited narrative accounts are imaginative reconstructions of past events and anticipations of future ones. Our larger dataset did include language learning narratives from many more learners, but due to the exploratory nature of the study we limited ourselves to a modest sample of only eight critical cases. This

was necessary given the exploratory nature of the present study and the fine-grained analyses we conducted. Future investigations will need to examine the transferability of the current findings by building on the lessons learned from these learners' narrative accounts of the L2 learning experience with more representative samples from various socio-geographic language learning contexts and using more robust confirmatory methods as appropriate. Seen this way, the present study can be thought of as a first exploratory step to reframe the L2 learning experience in a situated and dynamic way using insight from Dörnyei and Ryan's (2015) framework for a new narrative-based representation of the psychology of the language learner. We welcome further work to establish the contribution of this framework for current understanding in the field.

References

- Ahmed, S. (2004). Affective economies. Social Text, 79, 117-139.
- Ahmed, S. (2010). The promise of happiness. Durham, NC: Duke University Press.
- Al-Hoorie, A. H. (2016). Unconscious motivation: Part I: Implicit attitudes toward L2 speakers. *Studies in Second Language Learning and Teaching*, *6*, 423-454.
- Arbuckle, J., & Williams, B. D. (2003). Students' perceptions of expressiveness: Age and gender effects on teacher evaluations. *Sex Roles*, *49*, 507-516.
- Barrett, L. F. (2006). Solving the emotion paradox: Categorization and the experience of emotion. *Personality and Social Psychology Review*, 10, 20-46.
- Beleche, T., Fairris, D., & Marks, M. (2012). Do course evaluations truly reflect student learning? Evidence from an objectively graded post-test. *Economics of Education Review, 31*, 709-719.
- Braga, M., Paccagnella, M., & Pellizzari, M. (2014). Evaluating students' evaluations of professors. *Economics of Education Review*, 41, 71-88.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1987). Life as narrative. Social Research, 54, 11-32.
- Bruner, J. (1990). Acts of meaning. Cambridge, MA: Harvard University Press.
- Carrell, S. E., & West, J. E. (2010). Does professor quality matter? Evidence from random assignment of students to professors. *Journal of Political Economy*, *118*, 409-432.
- Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition.* London, England: Lawrence Erlbaum.
- Dörnyei, Z. (2008, March). Are individual differences really individual? Plenary given at the meeting of the American Association for Applied Linguistics, Washington, DC.
- Dörnyei, Z. (2009a). Individual differences: Interplay of learner characteristics and learning environment. *Language Learning*, *59*, 230-248.
- Dörnyei, Z. (2009b). The L2 motivational self system. In Z. Dörnyei & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 9-42). Bristol, England: Multilingual Matters.
- Dörnyei, Z. (2017). Conceptualizing learner characteristics in a complex, dynamic world. In L. Ortega & Z. Han (Eds.), *Complexity theory and language development: In celebration of Diane Larsen-Freeman* (pp. 79-96). Philadelphia/Amsterdam: John Benjamins.
- Dörnyei, Z., & Chan, L. (2013). Motivation and vision: An analysis of future L2 self images, sensory styles, and imagery capacity across two target languages. *Language Learning*, *63*, 437-462.

- Dörnyei, Z., MacIntyre, P. D., & Henry, A. (Eds.). (2015). *Motivational dynamics in language learning*. Bristol, England: Multilingual Matters.
- Dörnyei, Z., & Ryan, S. (2015). *The psychology of the language learner revisited*. New York: Routledge.
- Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London, England: Edward Arnold.
- Gardner, R. C. (2007). Motivation and second language acquisition. *Porta Linguarum*, *8*, 9-20.
- Gardner, R. C. (2010). *Motivation and second language acquisition: The socio-educational model.* New York: Peter Lang.
- Hidi, S. (2006). Interest: A unique motivational variable. *Educational Research Review*, 1, 69-82.
- Hidi, S., & Renninger, A. (2006). The four-phase model of interest development. *Educational Psychologist*, *41*, 111-127.
- Hiver, P., & Al-Hoorie, A. H. (2016). A dynamic ensemble for second language research: Putting complexity theory into practice. *Modern Language Journal*, 100, 741-756.
- Joe, H.-K., Hiver, P., & Al-Hoorie, A. H. (2017). Classroom social climate, self-determined motivation, willingness to communicate, and achievement: A study of structural relationships in instructed second language settings. *Learning and Individual Differences*, *53*, 133-144.
- Kane, M., & Trochim, W. (2007). *Concept mapping for planning and evaluation*. Thousand Oaks, CA: SAGE.
- Kim, Y.-K., & Kim, T.-Y. (2011). The effect of Korean secondary school students' perceptual learning styles and ideal L2 self on motivated L2 behavior and English proficiency. *Korean Journal of English Language and Linguistics*, 11, 21-42.
- Kramsch, C. (2008). Ecological perspectives on foreign language education. *Language Teaching*, *41*, 389-408.
- Lamb, M. (2012). A self system perspective on young adolescents' motivation to learn English in urban and rural settings. *Language Learning*, *62*, 997-1023.
- Larsen-Freeman, D. (2013). Complexity theory: A new way to think. *Revista Brasileira de Linguistica Aplicada*, *13*, 369-373.
- Larsen-Freeman, D. (2015a). Ten 'lessons' from complex dynamic systems theory: What is on offer. In Z. Dörnyei, P. D. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 11-19). Bristol, England: Multilingual Matters.
- Larsen-Freeman, D. (2015b). Saying what we mean: Making a case for 'language acquisition' to become 'language development'. *Language Teaching*, 48, 491-505.
- Lindquist, K., & Barrett, L. F. (2008). Emotional complexity. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 513-530). New York: Guilford.

- MacIntyre, P. D., & Serroul, A. (2015). Motivation on a per-second timescale: Examining approach-avoidance motivation during L2 task performance. In Z. Dörnyei, P. D. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 109-138). Bristol, England: Multilingual Matters.
- MacNell, L., Driscoll, A., & Hunt, A. N. (2015). What's in a name: Exposing gender bias in student ratings of teaching. *Innovative Higher Education*, 40, 291-303.
- Masgoret, A.-M., & Gardner, R. C. (2003). Attitudes, motivation, and second language learning: A meta-analysis of studies conducted by Gardner and associates. *Language Learning*, *53*, 123-163.
- McAdams, D. P. (2006). The role of narrative in personality psychology today. *Narrative Inquiry*, *16*, 11-18.
- McAdams, D. P. (2007). *The life story interview* [Measurement instrument]. Retrieved from https://www.sesp.northwestern.edu/docs/LifeStoryInterview.pdf
- McAdams, D. P. (2012). Exploring psychological themes through life narrative accounts. In J. A. Holstein & J. F. Gubrium (Eds.), *Varieties of narrative analysis* (pp. 15-32). London: SAGE.
- McAdams, D. P. (2018). Narrative identity: What is it? What does it do? How do you measure it? *Imagination, Cognition and Personality*, *37*, 359-372.
- McAdams, D. P., Anyidoho, N., Brown, C., Huang, Y., Kaplan, B., & Machado, M. (2004). Traits and stories: Links between dispositional and narrative features of personality. *Journal of Personality*, *72*, 761-784.
- McAdams, D. P., Bauer, J., Sakaeda, A., Anyidoho, N., Machado, M., Magrino-Failla, K., White, K., & Pals, J. L. (2006). Continuity and change in the life story: A longitudinal study of autobiographical memories in emerging adulthood. *Journal of Personality*, 74, 1371-1400.
- McAdams, D. P., & McLean, K. (2013). Narrative identity. *Current Directions in Psychological Science*, *22*, 233-238.
- McAdams, D. P., & Pals, J. (2006). A new big five: Fundamental principles for an integrative science of personality. *American Psychologist*, *61*, 204-217.
- McLean, K., & Fournier, M. (2008). The content and processes of autobiographical reasoning in narrative identity. *Journal of Research in Personality*, *42*, 527-545.
- McLean, K., & Pasupathi, M. (2011). Old, new, borrowed, blue? The emergence and retention of personal meaning in autobiographical storytelling. *Journal of Personality*, 79, 135-164.
- Moskovsky, C., Assulaimani, T., Racheva, S., & Harkins, J. (2016). The L2 Motivational Self System and L2 achievement: A study of Saudi EFL learners. *Modern Language Journal*, 100, 641-654.
- Noels, K. (2001). Learning Spanish as a second language: Learners' orientations and perceptions of their teachers' communication style. *Language Learning*, *51*, 107-144.

- Nolen, S., Horn, I., & Ward, J. (2015). Situating motivation. *Educational Psychologist*, *50*, 234-247.
- Ottoboni, K., Boring, A., & Stark, P. (2016). Student evaluations of teaching (mostly) do not measure teaching effectiveness. *ScienceOpen Research*. http://doi.org/10.14293/S2199-1006.1.SOR-EDU.AETBZC.v1
- Pekrun, R., & Linnenbrink-Garcia, L. (2012). Academic emotions and student engagement. In S. L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 259-282). New York: Springer.
- Ragin, C. C. (2009). Reflections on casing and case-oriented research. In D. Byrne & C. C. Ragin (Eds.), *The SAGE handbook of case-based methods* (pp. 523-534). London, England: SAGE.
- Ragin, C. C., & Davey, S. (2016). *Fuzzy-set/Qualitative Comparative Analysis* (Version 3.0). Irvine, California: Department of Sociology, University of California.
- Rose, L., Rouhani, P., & Fischer, K. (2013). The science of the individual. *Mind, Brain, and Education*, 7, 152-158.
- Rihoux, B., & Ragin, C. (Eds.). (2009). *Configurational comparative methods*. Thousand Oaks, CA: SAGE.
- Singer, J. (2004). Narrative identity and meaning making across the adult lifespan: An introduction. *Journal of Personality*, 72, 437-460.
- Stark, P., & Freishtat, R. (2014). An evaluation of course evaluations. *ScienceOpen Research*. http://doi.org/10.14293/S2199-1006.1.SOR-EDU.AOFRQA.v1
- Ushioda, E. (2001). Language learning at university: Exploring the role of motivational thinking. In Z. Dörnyei & R. Schmidt (Eds.), *Motivation and second language acquisition* (pp. 93-125). Honolulu, HI: University of Hawai'i at Mánoa.
- Ushioda, E. (2009). A person-in-context relational view of emergent motivation, self and identity. In Z. Dörnyei & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 215-228). Bristol, England: Multilingual Matters.
- Ushioda, E. (2011). Language learning motivation, self and identity: Current theoretical perspectives. *Computer Assisted Language Learning*, *24*, 199-210.
- Ushioda, E. (2015). Context and complex dynamic systems theory. In Z. Dörnyei, P. D. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 47-54). Bristol, England: Multilingual Matters.
- van Geert, P. (1994). *Dynamic systems of development: Change between complexity and chaos.* New York: Harvester.
- van Lier, L. (2004). The ecology and semiotics of language learning: A Sociocultural perspective. Boston, MA: Kluwer.
- Verspoor, M. (2015). Initial conditions. In Z. Dörnyei, P. D. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 38-46). Bristol, England: Multilingual Matters.

APPENDIX A

The Language Learning Story Interview (adapted from McAdams, 2007)

Introduction

This is an interview about *the story of your life as a language learner*. As a researcher, I am interested in hearing your story, including parts of the past as you remember them and the future as you imagine it. I'm going to ask you to think of your experience as a language learner in a new way—as a language learning story with chapters, with key scenes, characters, and themes. First we will start big, and talk about the chapters. Then we'll go into more detail and focus on the details of these chapters later on. I will guide you through the interview so that we finish it all in just over an hour.

This interview is for research purposes only, and its main goal is simply to hear *your language learning story*. As researchers, my colleagues and I collect people's stories of language learning in order to understand the different ways in which people experience language learning. There are no right or wrong answers to these questions. Instead, I would like you simply to tell me about some of the most important things that have happened in your *language learning story* and how you imagine your language learning story developing in the future. Everything you say is voluntary, anonymous, and confidential.

I think you will enjoy the interview. Do you have any questions?

Ok, so let's start by thinking about Language Learning Life Chapters.

A. Language Learning Life Chapters

Please begin by thinking about *your life as a language learner* as if it is a book or novel. Imagine that this book has a table of contents containing the titles of the main chapters in your language learning story. To begin with, can you describe briefly what the main chapters in the book might be? You can have as many chapters as you want, and please give each chapter a title. As the storyteller here, go chapter by chapter and give me an overall plot summary of your story. We want to spend approximately 15 to 20 minutes on this first section of the interview, and there will be time later to go into more detail about each chapter.

Follow up Q: Can you tell me a little bit more about what each chapter is about, and tell me how you get from one chapter to the next?

[Note to interviewer: The interviewer should feel free to ask questions of clarification and elaboration throughout the interview (e.g., *Can you tell me a bit more about why...?*; *Can you think of an example of...?*; *Do you mean that...?*), and especially in this first part.]

Now let's move on to Key Scenes in your Language Learning Story

B. Key Scenes in your Language Learning Story

Now that you have described the overall plot outline for *your language learning story*, I would like you to focus on a few key scenes, events, or specific incidents that stand out in your story. Think of key scenes as moments in your language learning story that stand out—maybe because they were especially good or bad, vivid, important, or memorable. For each of the key events we will think of, I would like you to describe in detail what happened, when and where it happened, and who was involved, and what you were thinking and feeling in the event. Then, I'll also ask you tell me why you think this particular scene is important or significant in *your language learning story*?

The first key event I would like you to focus on is a High Point.

1. A high point

Thinking back to the chapters you have told me about, can you describe a scene, episode, or moment from your language learning story that stands out as an especially positive experience? This might be the high point scene of your entire language learning experience, or else an especially happy, joyous, exciting, or wonderful moment in the story. Can you describe this high point in detail? What happened in the event, when and where was it, who was involved, and what were you thinking and feeling?

Follow up Q: Can you tell me briefly why you think this particular moment was so good and why the scene is so significant to you as a language learner?

2. A low point

The second scene is the opposite of the first—a low point. Thinking back over your entire language learning story, can you describe a scene, episode, or moment that stands out as a low point or an especially negative experience? Even though this event might be unpleasant, I would appreciate if you can tell me about it in detail. What happened in the event, when and where was it, who was involved, and what were you thinking and feeling?

Follow up Q: Can you tell me briefly why you think this particular moment was so bad and why the scene is so significant to you as a language learner?

[Note to interviewer: If the participant is clearly uncomfortable doing this, tell him or her that the event does not really have to be the lowest point in the language learning story but merely a negative event or experience of some kind.]

3. A turning point

Now I want to ask you about a turning point. Looking back over the chapters of your language learning story, it may be possible to identify certain key moments that stand out as turning points—events that marked an important change in you or in your language learning story. Can you think of particular episodes in your language learning story that you now see

as a turning point in your story? For this event, can you again describe what happened, where and when it was, who was involved, and what you were thinking and feeling?

Follow-up Q: Also, can you tell me in a few words why this scene is so significant to you as a language learner?

[If no: If there is no key turning point that stands out clearly, please describe a key event in your language learning experience in which you went through an important change of some kind.]

4. A positive early memory

Now, let's go back to the early chapters of your language learning story. I'd like you to think of an early memory of language learning—from the early chapters of your language learning story—that stands out as especially positive in some way. This should be a very positive, happy memory from the early chapters as a language learner. Can you describe this good memory in detail? What happened in the event, when and where was it, who was involved, and what were you thinking and feeling?

Follow up Q: Can you briefly tell me why this memory is so significant to you as a language learner?

5. A negative early memory

Now I'd like you to think of an early memory of language learning—still from the early chapters of your language learning story—that stands out as especially negative in some way. This could be a very negative, unhappy memory, maybe one of sadness, fear, or some other very negative emotional experience. Can you describe this bad memory in detail? What happened in the event, when and where was it, who was involved, and what were you thinking and feeling?

Follow up Q: Can you briefly tell me why this memory is so significant to you as a language learner?

Thank you. Now, we're going to talk about the future.

C. The Future Plot of your Language Learning Story

1. The next chapter

So far I've asked you to think about your language learning experience as a book with chapters and scenes from the past and present. Now I'd like you to extend your book chapters into the future by telling me how you see or imagine your future. Can you describe what will be the next chapter or chapters in your language learning story. What is going to come next in your language learning story? Describe these chapters in detail if you can.

2. Dreams, hopes, and plans for the future

Now let's talk about your plans for the future. Many language learners have an idea about what they want for themselves in the future. Can you describe your plans, dreams, or hopes

for the future as a language learner. What do you hope to accomplish in the future in your language learning story?

3. Long-term project

Do you have a long-term learning project in your language learning story? A long-term learning project is something that you have been working on and plan to work on in the future chapters of your language learning story. Can you describe any long-term project that you are currently working on? Tell me what the project is and how you involve yourself in this learning project.

Follow up Q: Why do you think this project is important for you and your language learning story.

D. Challenges

In this next section I'll ask you about the various challenges, struggles, and problems you have faced in your language learning. I will begin with general things, and then I will focus on some specific areas where many language learners experience challenges or a crisis.

1. Language learning challenge

Looking back over your language learning experience, please describe what you think is the greatest challenge or problem you have faced as a language learner. What is or what was the challenge or problem? How did this challenge or problem develop? How did you deal with the challenge or problem?

Follow up Q: Can you briefly tell me what the importance of this challenge or problem is in your language learning story?

2. A failure, regret

Many people experience failures and regrets in learning, even the strongest and most enthusiastic learners. Looking back over your language learning experience, what is the greatest failure or regret you have experienced? This failure or regret can be in any area of your language learning—using the language, the language classroom, language exams, or any other area. Can you describe the failure or regret and the way in which it happened to you?

Follow up Qs: How have you coped with this failure or regret? What effect has this failure or regret had on you and your language learning story?

3. Giving up

Looking back over your language learning experience, can you think of a scene or period in your language learning story when you met a problem or had challenges that made you want to give up and stop your language learning? Please describe in detail what the problem

was and how it developed. What was it about the problem or challenges that made you want to give up as a language learner.

Follow up Qs: How did you cope with the problem or challenge? What impact did this scene or period have on your overall language learning story?

E. Personal Language Ideology

Now, I would like to ask a few questions about your beliefs and values as a language learner and about questions of meaning in your language learning story. Please think carefully about each of these questions.

First I want you to think about the value you see in your language learning experience.

1. Value of language learning

Can you describe briefly what you see as the most valuable part of language learning for you? Is there anything important that you get from language learning, that you could not get otherwise? Please explain and give me details if you can.

2. Approach to language learning

What else can you tell me that would help me understand how you approach language learning and what you do as a language learner? What can you tell me to help me understand who you are as a language learner?

3. Change, development of views

Now let's think about changing views. Can you tell me how your beliefs and views of language learning have developed over time? Have they changed in any important ways? Please explain and give me details if you can.

F. Life Theme Reflection

Thank you for being a part of this language learning interview. I have just one more question for you. Many of the stories you have told me are about experiences that are special because they stand out from the day-to-day. I'm wondering if you can reflect for one last moment. Looking back over your entire language learning story with all its chapters, scenes, and challenges, extending back into the past and ahead into the future, do you see a central theme, message, or idea that runs throughout the story? What is the major theme in your language learning story?

Thank you.

APPENDIX B

Truth tables compiled on the basis of the data used in the study

Table A1 Independent variables used as input conditions in computing truth tables

QCA code	Data theme	
ac	learning for self-actualizing purposes	MoThem
ad	desire to add additional languages	NarrComp
am	ambitious language learning	MoThem
as	aspiring to something greater	MoThem
bh	broadening horizons	MoThem
bl	balancing all languages	NarrComp
ca	coping productively/adaptively	NarrComp
ce	casual exposure to languages	NarrComp .
cl	desire for consistency in learning	NarrComp
cm	coping unproductively/maladaptively	NarrComp
СО	confidence	EmoLo/To
cr	caring and interest	MoThem
cu	curiosity	MoThem
CZ	getting out of a comfort zone	MoThem
de	paying attention to detail	MoThem
df	difficulty	MoThem
dg	discouragement	EmoLo/To
di	deliberate initiative in learning	MoThem
ds	disappointment	EmoLo/To
dt	distractions	NarrComp
ef	effort paid off	NarrComp
eh	exhaustion	EmoLo/To
ej	enjoying the process of learning	EmoLo/To
em	embarrassment	EmoLo/To
ер	constant effort and perseverance	MoThem
et	enthusiasm	EmoLo/To
ex	excitement	EmoLo/To
fa	failure	MoThem
fe	fear	EmoLo/To
fu	frustration	EmoLo/To
gl	efficient language learning	NarrComp
-	daily grind	NarrComp
gr id	intimidated	EmoLo/To
ii		EmoLo/To
	inspired by something	
İV IF	investing time and energy	MoThem
lf li	learning from major failures	MoThem
	initial lack of interest in language learning	EmoLo/To
lm	learning from minor mistakes	MoThem
mc	miscommunications	NarrComp
mg	metacognition	NarrComp
ml	learning multiple languages	NarrComp
my	mastery goals	MoThem
nc	negative class experience	EmoLo/To
no	negative change in outlook	NarrComp

nsa negative study abroad experience EmoLo/To nt negative teacher experience EmoLo/To ob overcoming obstacles MoThem ov overthinking things NarrComp pa pacing oneself NarrComp pc positive class experience EmoLo/To pd pride EmoLo/To pf perfectionism NarrComp pg progress MoThem pl realizing one's potential MoThem po positive change in outlook NarrComp psa positive study abroad experience EmoLo/To pt positive teacher experience EmoLo/To qg not giving up or quitting MoThem rg receiving recognition NarrComp ri risk-taking NarrComp rl making personal connections or relationships MoThem sd serendipity EmoLo/To	
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ad carandinity Emala/Ta	
sd serendipity EmoLo/To	
so sticky object sparking interest EmoLo/To	
sr self-regulated learning NarrComp	
te trial and error NarrComp	
tl learning technical aspects of language NarrComp	
tr triumph EmoLo/To	
ul using language throughout whole life MoThem	
uq unique experiences through language MoThem	
vi valuable interactions through language MoThem	

Table A2 Causal condition membership values for fs/QCA

QCA code						Respondent		
QCA Code	Ale00	Cha00	Jen00	Jim00	Jon00	Kay00	Lau00	Tia00
ac	.5	0	.5	.5	.5	.75	.5	0
ad	.75	.5	1	.5	1	1	1	.5
am	0	.5	1	.5	1	.75	1	.5
as	.25	.5	1	.5	1	.75	1	.5
bh	1	1	1	1	1	.5	1	1
bl	1	1	.5	.75	1	.5	.5	1
ca	.5	1	1	.5	.75	.5	1	1
ce	1	1	1	.75	.75	.75	1	1
cl	0	0	.5	1	.25	.5	.5	0
cm	.5	0	0	.25	.25	.25	0	0
CO	.75	.5	.5	.5	.75	.5	.5	.5
cr	1	1	.5	.5	1	.75	.5	1
cu	.5	.5	1	.75	1	.5	1	.5
CZ	1	1	.75	.5	1	.5	.75	1
de	0	1	1	1	.5	.75	.5	1
df	1	1	1	1	1	1	1	1
dg	1	1	.5	.5	1	.75	1	1
di	.75	.5	1	.5	1	.75	1	.5
ds	.25	.5	.5	.5	1	.5	1	.5
dt	0	.5	.5	.5	.5	.5	.5	.5
ef	1	1	1	1	1	.75	1	1

Phil Hiver, Gabriel Obando, Yuan Sang, Somayeh Tahmouresi, Ashlee Zhou, Yang Zhou

		o, raarroc	ing, Johna	yen ranni	oui csi, As	THE ZHO	a, rang zin	Ju
eh	.5	.5	0	.5	1	.25	1	.5
ej	1	.5	1	.5	.5	.25	.5	.5
em	1	1	.75	0	0	.5	0	1
ер	1	1	1	1	.5	.75	.5	1
et	.5	.5	1	.5	.5	.5	.5	.5
ex	.75	0	1	.25	1	.5	1	0
fa	0	.5	.5	.5	.75	.5	.75	0
fe	1	0	0	.5	0	0	1	.5
fu	.5	1	.5	.3	.5	.75	1	.5
gl	.3	.25	.5 1	1	.75	.75	.25	1
	0	.23	.75	1	.73	.75	.23	1
gr	1	1	.75	1	.5		1	1
id ::				.5		.5		
ii	.75	1	1		.5	.75	1	.5
iv	1	1	1	1	1	.75	1	1
lf 	1	1	1	1	1	.75	1	1
li	1	1	.25	.5	.5	.75	.5	.5
lm	1	1	1	0	1	.75	0	0
mc	.75	.5	.5	.5	1	1	.5	.5
mg	1	.75	1	.5	.75	.75	.5	.5
ml	1	1	1	1	1	1	1	1
my	1	1	1	.75	1	1	.75	.75
nc	0	.5	1	.5	.5	.25	.5	1
no	1	0	.25	.25	.25	0	.25	.5
nsa	0	0	1	0	.25	.25	0	0
nt	1	1	1	.5	1	1	1	1
ob	.25	.5	0	.25	1	.25	.5	.25
OV	.5	1	1	.5	1	.5	1	.5
pa	.5	.75	.5	.25	1	.5	.75	.5
рс	1	.5	1	.5	1	.75	.5	1
pd	1	1	1	.25	1	.5	1	1
pf	1	1	1	1	1	.75	1	1
pg	1	1	1	.75	1	.75	1	1
pl	1	.25	.75	.5	1	.75	.25	1
po	1	0	1	1	1	.5	0	1
psa	0	0	0	.25	.25	.25	0	0
pt	1	1	1	.23	.23	.23	1	1
	0	.5	1	.25	.5	.5	.5	0
qg	1	.5	1	.75	.5	.5 .75	.5 1	1
rg	1	.75	1	.75	1	.75 .75	.75	1
ri el	1	.75		1	.75	.75	.75	1
rl			1				.s 1	
sd	1	1	1	.75	1	.75		1
SO Sr	.5	.75	1	.75	1	.75	.75	.5
sr	1	1	1	1	1	.75	1	1
te	0	0	.5	.5	.75	.75	0	0
tl	1	1	.5	.5	.75	.5	1	1
tr	.5	.75	1	.75	.5	.5	.75	.5
ul	.5	1	1	.75	1	.75	1	.5
uq	1	.5	1	1	1	.75	.5	1
vi	.5	0	.5	.5	.5	.75	.5	0

Note. Scores of 1 and 0 indicate full membership and non-membership in the causal condition "set," respectively. Scores greater than 0 but less than 1 indicate levels of partial membership in the set. QCA relies on absolute cut-off scores for membership and non-membership, but in order to simplify our fs/QCA analyses these conventional cut-off scores did not feature in our coding.