A Holistic Person-Centred Approach to Mobile Assisted Language Learning

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CHAPTER 1

Introduction

In the past two decades, mobile-assisted language learning (MALL), defined as "the use of smartphone and other mobile technologies in language learning, especially in situations where portability and situated learning offer specific advantages" (Kukulska-Hulme, 2020, p. 743), has received growing attention from second and foreign language (L2) researchers. This growing attention is largely ascribable to the advancement and sophistication of mobile technologies that have created new and innovative opportunities for L2 learning inside and outside the classroom. Specifically, the use of mobile technologies expands learners' exposure to rich, authentic, and motivating language content, and provides them with opportunities for language production, feedback, interaction and collaboration (Duman et al., 2014; Thornton & Houser, 2005). Mobile technologies can also boost learners' interest and motivation in language learning, leading to their deeper engagement with learning resources and in the end their increased language performance (Golonka et al., 2014).

In research, these experiential and developmental affordances of MALL have been approached from different perspectives, either as a site where learning as a socio-cognitive endeavour is collectively shaped through learners engaging in varied mobile-mediated activities, or as providing necessary exposure to and use of the target language that structures individuals' learning processes. Yet, most of the empirical results that current thinking in MALL is based on emanate from (quasi)experimental designs where learners' language use was studied independently of the spatial-temporal ecology (e.g., in highly structured settings), and hence lacked ecological validity (Burston, 2014; Godwin-Jones, 2019). While existing studies have enhanced our understanding of multiple facets of language learning with mobile technology, as a product or as

an in-situ learning process, it is time to broaden contexts for empirical investigations, studying mobile-assisted language learning in the full ecology of *the wild* (e.g., informal contexts). As Jones et al. (2018) noted, "it is vital to develop some understanding of learner-led activities and learners' practices in informal mobile language learning if we are to make the best use of MALL and to advise learners accordingly" (p. 8). Dressman (2020) further argued that it is in the informal sphere, so disregarded and under-researched, that most of the significant language learning gains we apply to our everyday lives are achieved. Informal mobile language learning should therefore be considered as an essential part of contemporary language learning and development, which is the focus of the current project.

1.1 Informal mobile language learning

Informal mobile language learning (IMLL) in the current project refers to learners' self-initiated language learning with mobile technology, including all learning activities that involve the use of mobile technologies and learners' language learning experiences occurring outside the classroom. The informal learning opportunities that mobile technologies facilitate are numerous and diversified (Reinhardt & Thorne, 2019). For example, learners can have access to authentic learning materials by listening to songs and watching TV series or films. They can use L2 in personally meaningful and purposeful ways, posting on social media, playing digital games, creating videos, or communicating with other learners on social networks.

These activities expose learners to a wide range of lexical and grammatical forms and enable them to engage with language content that is more centrally embedded in their lifeworlds than traditional, classroom-based learning materials (Roos & Nicholas, 2020). As such, informal mobile language learning can expand both the range of linguistic forms and the range of meanings that learners encounter. Additionally, the variety of learning opportunities learners have in informal, out-of-class contexts draws attention to the multiple and intertwined connections among the agentic learner, learner attributes, technological tools and resources, and spatial-temporal settings. That is, learners in the IMLL context can access diverse and myriad learning resources that articulate with their personal goals, learning interests and preferences, prior knowledge, language and digital competencies (Kukulska-Hulme, 2016; Thorne, 2008). They can also use, curate, share, and remix authentic online materials in the target language (videos, music, websites, etc.), giving new meaning to raw sources in entirely new forms of expression (Godwin-Jones, 2019; Zourou, 2020).

Informal language learning with technology as an emerging field has increasingly been examined from a complex dynamic systems (CDST) perspective (e.g., Godwin-Jones, 2018, 2019; Kusyk, 2017; Sockett & Kusyk, 2015; Sockett & Toffoli, 2020), which recognizes L2 learners' self-initiated learning outside the classroom as a dynamic process that results from an interplay of a wide range of learner-internal and -external variables as well as their simultaneous interaction with the learning environment As Godwin-Jones (2018) points out:

> … complex systems can be especially useful in exploring informal language learning in digital environments. C[omplexity] T[heory] helps illuminate the dynamic processes at play; it can untangle sets of nested systems, with language and learners themselves being complex systems within a dynamic framework of L2 development. (p. 8)

Three key features are suggested in Godwin-Jones's (2018) argument here. First, it is important to understand the dynamics (i.e., changes over long time periods) of informal (mobile) language learning than to observe a set of learning activities at a particular moment in time. Second, interactions between different (sub)systems, such as learner motivation and emotion, learning strategies and behaviours, and technological resources, are key to understanding informal (mobile) language learning, rather than focusing on one single (sub)system such as learning behaviours (e.g., listening to songs, watching TV series, engaging in gaming scenarios) (see also Lai & Zheng, 2018; Ma, 2017). The third feature is relatively implicit: Data concerning learners' informal language learning are often collected from tangled sets of (sub)systems (e.g., learner motivation, learning strategies, multifarious technological resources); as a result, the data collected are inherently messy and largely specific to the individual learner (see also Sockett & Toffoli, 2020). These features characterize informal (mobile) language learning as dynamic, interconnected, heterogeneous, or even idiosyncratic; assigning simplistic causal explanations for the complex relationships between different (sub)systems would be largely inadequate.

The main aim of the combined chapters that make up this dissertation is to shed light on the complexity, dynamism, heterogeneity, and commonality of informal language learning with mobile technology. To this end, we scrutinize the affordances of mobile technologies for L2 learning and development, examine how L2 learners configure the learning opportunities that mobile technologies afford in informal, out-of-class contexts and how they transform these opportunities into daily participatory infrastructures for L2 learning and development. While the primary focus of the dissertation will be on learner-initiated mobile language learning outside the classroom, it

also considers possible ways of optimally integrating these informal learning experiences into L2 classroom agenda.

Exploration of these issues can help advance our understanding of L2 learning, both as a product and as a process, in an increasingly technologized world. More specifically, awareness of, and familiarity with, learner-initiated mobile language learning opportunities in informal contexts helps to expand the scope of what L2 learners do by including the L2 learning experiences in their lifeworlds (Dubreil & Thorne, 2017; see also Firth & Wagner, 1997). It also helps to elucidate the relationship between the agentic learner and the learning context (diversified mobile technologies in our case), which two, according to Godwin-Jones (2019), are "in a *fluid interweaving relationship*" (p. 8, emphasis in original), emphasising the multifaceted and intertwined connections among language learners and technological tools, resources and materials.

Additionally, and maybe less obviously, investigation into IMLL expands the traditional view of language learning in the classroom, and encourages the integration and implementation of *social learning* (see a historical overview of technology-supported language learning in Lomicka & Lord, 2019). Nowadays, researchers increasingly focus on the social side of (mobile) technologies, integrating social media and networking, gaming, fandom, and sometimes even augmented and virtual reality technologies. Such technology integration is changing the way learners learn another language, in accordance with which the nature of language learning is also changing. This changing landscape of language learning is evident in language learners' meaning-making and -negotiation processes, which increasingly include post-typographic and multimodal expression, such as the use of images, sound, video, and intertextual linkage to other media (Reinhardt & Thorne, 2019). In other words, language learners in today's technologized world are able to engage with a multiplicity of semiotic resources for meaning-making, and to involve themselves in "not just reading and writing but *reprodusage*—a portmanteau of remix, produce, and use" (Reinhardt & Thorne, 2019, p. 211, emphasis in original). In doing so, they may "cultivate a taste for working with a certain degree of unpredictability and ambiguity, develop an ability to adapt, and, through exercising agency and authorship in and out of the classroom, develop their own voice in the L2" (Dubreil & Thorne, 2017, p. 3).

Despite the experiential and developmental affordances for L2 learning, researching the complex IMLL phenomenon is often confronted with methodological challenges (Sockett & Toffoli, 2020). First, informal mobile language learning is by definition "impromptu, unscheduled, and unofficial" (Toffoli & Sockett, 2010, p. 19), which means research into IMLL "offers no well-defined start and end times, no unity of curriculum, and no predetermined organizing

circumstances" (Sockett & Toffoli, 2020, p. 475). In other words, IMLL research may not be capable of legitimately studying the impact of a specific learning practice/activity on a given group of learners over a given period of time. The second challenge is related to learner variety and learning heterogeneity inherent in language learning with mobile technology. That is, language learners, in today's globalized and technologized world, have available a multiplicity of learning resources and materials through which to explore their own, often largely distinct, personal goals, learning interests, and preferences (Kukulska-Hulme, 2016). Put alternatively, in IMLL contexts, learners with different learning goals and interests tend to interact with a diverse set of devices, tools, and resources, leading to highly personalized learning experiences and divergent developmental processes. It is with these challenges in view that the current project proposes and adopts an innovative approach—the person-centred approach—to researching the complex and heterogeneous IMLL phenomenon, a bottom-up approach that first attends to IMLL experiences and developmental processes at the individual level, and then identifies patterned outcomes across individuals as they emerge from the data (see also Godwin-Jones, 2019).

1.2 Conceptual and analytical essentials

The current project takes a person-centred approach as its starting point (Benson, 2019; Bergman & Wångby, 2014; Larsen-Freeman, 2018), an approach largely in line with the complex dynamic systems (CDST) perspective on language learning and development mentioned in section 1.1 (de Bot et al., 2007; Larsen-Freeman & Cameron, 2008). Fundamental to the person-centred approach is a focus on the individual, with its operating components (e.g., intra- and extra-individual attributes and resources) interact in an adaptive manner to achieve an optimal functioning totality (Bergman & Lundh, 2015). Also inherent in the approach is a complex dynamic systems view that understands individual development as a dynamic process wherein the individual develops and functions as an intentional agent in interaction with the spatial-temporal contexts (Larsen-Freeman, 2018).

That is, from a person-centred point of view, individual development is idiographic (i.e., focusing on the individual rather than the group/aggregate), holistic (i.e., understanding the individual as an integrated system with intricately interacting components), and interactional (i.e., viewing the individual as an active agent in interaction with the learning environment). In light of this, Bergman and Lundh (2015) presented four basic tenets of the person-centred approach:

> (1) Development is a complex process including many levels that are partly individual specific.

(2) There exists coherence and structure in the developmental process and in the functioning of the systems at the different levels.

(3) Processes involve structures organized and functioning as *patterns* of operating factors.

(4) At a global level, typical patterns (i.e., most often observed patterns) tend to emerge. The assumption is made both intra individually (viewed over time for the same person) and inter individually (for different individuals at the same time or over time). (Bergman & Lundh, 2015, p. 3).

According to these tenets, the process of individual development is by necessity idiosyncratic and should be studied at the level of the individual. This, however, does not mean that we should abstain from searching for general regularities of developmental processes. Rather, the person-centred approach posits that the search for regularities of individual development may preferably start at the level of the individual (i.e., start with the understanding of the individually unique learning experience or developmental process with reliability and validity), aggregate similarly structured processes in a bottom-up manner, and then generalize these patterned outcomes across individuals to a larger group (Molenaar, 2016). The ultimate goal of the person-centred approach is nomothetic, uncovering the underlying mechanisms of individuals' processes of change and development (Molenaar, 2016).

Applying the person-centred approach to language learning and development means that findings about how learners learn and develop another language should first be produced for each individual and then be generalized to a group of similarly structured individuals (i.e., learners with shared learning and developmental patterns). In the current project, we adopt the person-centred approach to researching informal mobile language learning, with a view to finding lawful regularities about learners' learning and development with mobile technology, particularly in the informal, out-of-class context.

When a person-oriented approach is applied, the methodological tools used are often to study inter-individual variation—performing a classification analysis (e.g., cluster analysis) on a group/sample of individuals to identify (hidden) subgroups composed of similarly structured individuals. This may lead to a grey zone between the individual and the group/sample, which Lowie and Verspoor (2019) call ergodic ensemble (see also Molenaar & Campbell, 2009). The identification of "subsets of similar individuals" (i.e., ergodic ensembles) (Molenaar & Campbell, 2009, p. 116) from a larger group is insightful in two possible ways.

First, it may provide insights into the patterned outcomes of informal mobile language learning (IMLL) in terms of learning experiences and language development, which is the focus of the current project. To be more specific, the identification of subgroups of similar individuals can reveal patterns of intra- and extra-individual variables approximately shared by all individuals in the subgroups identified. These typically occurring IMLL patterns could lead to a more predictable manifestation of learners' IMLL, which is often characterized as contextualized, diversified, heterogeneous, and even idiosyncratic (i.e., specific to the individual). Of note here is that the variables included in the pattern identification should jointly provide a reasonable representation of a meaningful totality with good correspondence to the system under study. This means that variables must be carefully considered and their inclusion should be theoretically motivated (Bergman et al., 2003).

Second, the person-centred methodology may serve as an innovative way of arriving at findings about L2 learning and development that are interpretable beyond the level of single learners. L2 researchers, especially CDST researchers, have increasingly recognized that "[l]anguage development is an inherently individual and dynamic process and there can be no logical expectation that the pattern found in generalizations at the group level is the same as the actual development of the individual learner" (Lowie & Verspoor, 2015, p. 84). This view was further elaborated in Lowie and Verspoor's (2019) later discussion on the ergodicity problem in L2 learning and development. According to the ergodic principle, findings concerning L2 learning and development at the group/aggregate level cannot be directly translated to the individuals who compose the group and vice versa, unless two strict conditions are met: First, the developmental process remains *stable in time*, namely, having constant means and variability, no cycles and temporal dependencies. Second, the developmental processes are *homogeneous across individuals*. That is, each individual in the group follows exactly the same model and description (e.g., with same statistic parameters). Given that individuals in a randomized group precategorized by the researcher are often not homogeneous and that the process of their language development is variable, constantly changing in time, the two conditions are likely to be both violated. As an alternative, researchers (e.g., Molenaar & Campbell, 2009) suggested to identify subgroups of similar individuals as ergodic ensembles, so that the findings at the subgroup level and those of the individuals composing the subgroup are mutually inferable.

1.3 Outline of chapters

The current dissertation consists of three parts. Chapter 2 examines the effectiveness of mobile technologies in L2 learners' language learning in general. Chapters 3, 4, and 5 focus on learners' informal participation in mobile-assisted language learning activities. Specifically, a cross-sectional study and a longitudinal study are separately conducted, with a view to understanding the experiential and developmental affordances of mobile technologies for learners' informal language learning. Chapter 6 concerns the design and integration of learners' informal mobile learning in L2 classroom agenda. Ultimately, this dissertation aims to shed light on the inter-relationships between the agentic learner, mobile technologies, and language learning and development.

While evidence accumulated in the past two decades indicates that mobile technology may support, facilitate, or distract (or even inhibit) the learning and development of L2 competence, **Chapter 2** reports on an up-to-date meta-synthesis of mobile-assisted language learning (MALL). Specifically, a narrative review and a meta-analysis are conducted to synthesize the literature on mobile-assisted language learning, which provides a detailed picture of MALL research in terms of language aspects targeted, theoretical frameworks addressed, mobile technologies adopted, and multimedia components used, and reveals the effectiveness of mobile technologies in language learning as well as its moderators (e.g., type of activities, modality of delivery, and duration of treatment). The synthesis informs the *status quo* of the MALL field and confirms a large effect size for mobile technology applications on L2 learning in general. This work also reveals a lack of studies in the MALL field that document learner-initiated learning practice with mobile technology.

Reflecting a shift to learners' self-initiated language learning in informal, out-of-class contexts, **Chapter 3** offers an augmentative theoretical and methodological framework that emphasizes person-centredness. This is an outgrowth of the recognition in the L2 field that L2 use, learning and development are essentially specific to the individual (e.g., Benson, 2019; Larsen-Freeman, 2018; Lowie & Verspoor, 2019), which is especially the case in today's technologized world where L2 learners have access to diverse and myriad learning resources that articulate with their personal goals, learning interests and preferences, prior knowledge, language and digital competencies. Therefore, we propose a holistic person-centred account of mobile-assisted language learning. In this chapter, we begin with an overview of the nature of the person-centred approach, including provisional definitions at the theoretical and methodological level, and the situation in which this approach could be used as a complementary or alternative tool to the variable-centred approach commonly adopted in the L2 field. We then discuss methodological decisions essential for conducting person-centred research and present a brief analysis of questionnaire data (which are

collected for the empirical study to be introduced in Chapter 4) as illustration of how a person-centred methodology can be carried out and how the application of person-centred methods helps advance our understanding of complex L2 phenomena. The chapter concludes by highlighting issues we believe have important implications for future MALL research and L2 research in general.

By taking a person-centred approach, **Chapter 4** examines L2 learners' self-initiated engagement with mobile learning activities outside the classroom. Data are collected with a questionnaire and semi-structured interviews. We perform a cluster analysis (as a person-centred method) on the questionnaire data, which yields six types of learners with distinctly different mobile learning experiences, each type bringing along a distinct package of motivational, emotional, linguistic, and technological interaction. That is, with a person-centred methodology, *multivariate* profiles of learners can be established using a set of behavioural, motivational, emotional, and linguistic variables that concurrently shape learners' informal mobile language learning. This work demonstrates how intra- and extra-individual attributes and resources form an entangled system and jointly contribute to the process of informal language learning. The identification of different learner types (each type composed of learners with similar multivariate profiles) also informs language teachers to design and implement instruction tailored to each learner type so as to better integrates and complements learners' preferred informal learning experiences.

Chapter 5 continues a person-centred approach to researching informal mobile language learning (IMLL), and examines the process of L2 learners' language development through their IMLL participation over time. Intensive longitudinal writing samples from nine participants (i.e., Chinese EFL learners) are collected and analysed with a time-series clustering methodology (also as a person-centred method), which first depicts individual-level developmental trajectories of writing complexity that are idiographic and/or individual-specific and distils salient developmental patterns that transcend the individual variety and heterogeneity. The patterns identified reveal that, over ten months' IMLL participation, the syntactic and lexical features of learners' writing progress to a developmentally more complex level. That is, the person-centred methodology (i.e., time-series clustering technique) allows us to identify developmental patterns and to arrive at "findings that are interpretable with some degree of confidence within the [specific] setting" (Byrnes, 2020, p. 242).

Combined, Chapters 3, 4 and 5 provide theoretical, methodological, and pedagogical implications for how research framed with a person-centredness lens can potentially offer great benefit for a better understanding of informal mobile language learning and L2 learning in general.

Specifically, the person-centred approach can insightfully elucidate the complexity, dynamism, idiosyncrasy, and commonality of L2 learners' informal language learning with mobile technology.

In **Chapter 6**, we argue for the grounding in the design and integration of L2 learners' informal mobile learning experiences in L2 classroom agenda. Specifically, Chapter 6 takes up Dubreil and Thorne's (2017) view that learners' self-initiated IMLL experiences could be incorporated using "an adaptive pedagogy that would situate language and culture as lived practice" (p. 6), and recognizes digital storytelling (DS) as one such pedagogically structured design (Reinders, 2011; Sauro & Thorne, 2020). DS can "provide real-world contextualized examples that balance out more prescriptive and decontextualized grammar, vocabulary, and style typically found in foreign-language course textbooks" (Sauro & Sundmark, 2019, p. 4).

Drawing on multiple sources of data (i.e., DS products, learning journals, semi-structured interviews), this 10-month-long study explores two English learners' behavioural, cognitive, social, and affective engagement when they iteratively perform a DS task, together with ensuing changes in their writing over time. Results show that the two learners engage differently in the DS task, and that the same learner exhibits differentiated on-task engagement in iteratively performing the task. Additionally, the learners' writing also follows divergent developmental paths. Pedagogical suggestions accommodating this variation across learners and within the same learner over time are provided to better design and implement DS tasks. Findings of this study also have important implications for how L2 educators structure DS programs and how they organically create L2 learning environments that establish bridges between the classroom and learners' lifeworlds. It is hoped that in-class and out-of-class settings could be viewed by L2 educators not as compartmentalized but as contiguous, porous spaces for L2 learning (Godwin-Jones, 2020).

This dissertation ends with a general discussion (**Chapter 7**) of the main findings of the empirical studies conducted (meta-analytic, cross-sectional, longitudinal, and pedagogical), followed by theoretical and methodological implications for researching complex (informal mobile) language learning phenomena. Pedagogical suggestions for optimally integrating learner-initiated IMLL experiences in L2 classroom agenda are also offered. Finally, the limitations of the present research project are pointed out and avenues for further research are recommended.