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Exploring complexity in L2 and L3 motivational systems: a dynamic systems theory perspective

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**ABSTRACT**
Drawing on qualitative research, this study explores (1) how Hong Kong university students’ existing L1 and L2 affect their learning motivation for an L3 and (2) how an individual’s L2 motivation changes because of learning an L3, from a dynamic systems theory perspective. Eight undergraduate students from Hong Kong participated in this study. They were all native Cantonese speakers with English as their second language (L2) and Japanese as their third language (L3) at different proficiency levels. The students attended two rounds of extensive semi-structured interviews that focused on their sources and changes of motivation, their own perceptions of their L2 and L3 selves, their individualised methods and experiences in learning the two languages and their understanding of their cultural identities. The findings reveal the complexity of multilingual learners’ motivational dynamics in learning L1, L2 and L3. Furthermore, the influence of an L3 on the existing L2 motivation is shown to be an intriguing but under-investigated research area. Our results lend support to the newly proposed dual-motivation system theory and should contribute to a more nuanced understanding of multilingual learning.

**KEYWORDS**
L2 motivation; L3 motivation; dynamic systems; dual-motivation system; multilingualism

**Introduction**
Motivation is an area of sustained research interest in second language learning (Ushioda 2016). Pioneered by Gardner and Lambert (1972), studies have explored the role of motivation in many ways, from considering it static in nature to focusing on motive rather than ongoing motivation and considering a more dynamic system that accounts for environmental factors in maintaining motivation (Lantolf and Genung 2002; Ushioda 2001). More recent research has emphasised how motivation is formed temporally and contextually, and how different components of self (i.e. ideal self, ought-to self) underlie how motivation triggers learners’ behaviours (Dörnyei 2005; Teng and Bui 2018). A more recent insight in the field was Dörnyei, Henry and Muir (2016). They set out to investigate language learners’ ‘directed motivational currents’ that differ from general motivation because of their intensity at a specific period (such as before an examination). However, prior research has been criticised for overlooking the complexity of motivational behaviours in a context; that is, how motivation is related both to a learner’s cognitive systems and their social and cultural environment. For example, the integrativeness and instrumentality dichotomy in Gardner’s socio-psychological motivation model was rooted in Canada’s bilingual social situations and could not be necessarily generalised to EFL contexts. Therefore, learners’ social and cultural environment and past experiences in accomplishing a learning task may affect their cognitive processes and beliefs about their motivation.
In addition, the self-related motivation that arises from learners’ present learning processes, taking into account the diversity of cultures in a globalised context and ongoing contextual affordances that impact language learning motivations (Ushioda 2011), makes L2 learning motivation an even more dynamic and multifaceted notion. There is thus a need to explore complexity in L2 and L3 motivational systems because language learning takes place not only within a classroom but also in a broader social context.

Recent years have seen another development of our understanding of language learning motivation; As a result of globalisation and multilingualism, motivation is no longer a mere consideration of the ‘self’ and a set of achievements through language learning; language learning itself is diverse, and an individual may learn a range of languages in different contexts over their lifetime. While the distinction is generally well-established between a ‘first’ or native language and a ‘second’ language, learned or acquired after the ‘first’ language has reached a functional level of development (Hammarberg 2014), it is also important to differentiate between an L2 or L2s and a subsequent ‘L3’. Hammarberg (2010, 97) defines an L3 as ‘a non-native language which is currently being used or acquired in a situation where the person already has the knowledge of one or more L2s in addition to one or more L1s’. Thus an L3 learner has prior knowledge of at least one L1 and one L2, and an L3 is being newly added to the learner’s linguistic repertoire.

It has been argued that an existing L2 system can influence the learning motivation for an L3 (Man, Bui and Teng 2018). Herdina and Jessner’s (2002) dynamic model of multilingualism (DMM) brought this perspective into academic discussion and investigation. However, the literature has thus far focused almost exclusively on cross-linguistic influence and other cognitive effects as a result of knowing two or more languages (Witney and Dewaele 2018). The issue of how existing dual language systems influence motivations for additional language learning has had little research attention. Henry (2012) offers an in-depth look at L3 motivation, suggesting that language learning motivation may change due to the increased cross-linguistic awareness of L3 learners. However, the scant available empirical research is almost exclusively quantitative in nature (e.g. Sánchez 2011).

The research reported here thus sets out to use a qualitative approach to investigate the nature and interaction of cross-linguistic motivation(s) among L3 learners, based on Larsen-Freeman’s (2015) dynamic systems theory (DST). Specifically, we explore motivations of a number of young L1 Cantonese students in Hong Kong for learning an L2 (English) and an L3 (Japanese) in the presence of each other. In addition, the issue of L1 is thrown into the mix so as to achieve a more comprehensive understanding of multilingual learning motivation. Our discussion will be based on the premise of DMM and how it can be used to enhance Dörnyei’s (2005) L2 motivational self system. While this latter motivation system may be useful for describing the developmental stages of L2 motivation, it does not advance our understanding of the complexity of motivation, particularly in relation to multiple language learning.

**Literature review**

Although L2 motivation has been extensively studied, L3 motivation is a relatively new concept and has attracted increasing attention in recent years. The following subsections will review the relevant L2 and L3 literature to provide a conceptual background for the current research.

**L2 motivation**

Current research on L2 motivation tends to conceptualise motivation as dynamic and situated rather than binary and static in nature (Dörnyei 2005, 2009). Gardner and Lambert’s (1972) early research and Gardner’s (1985) subsequent socio-psychological model of motivation, for example, differentiated between integrative and instrumental motivation, suggesting that integrative orientation comes from learners’ eagerness to understand the target language group and their culture, while instrumental orientation focuses on the utilitarian and pragmatic value of learning a second language
Gardner’s notion of integrativeness has however been challenged because ‘it is not quite clear what the target of the integration is’ (Dörnyei 2009, 23), particularly as World Englishes become the norm of lingua franca (Ushioda 2017). Furthermore, recent research has highlighted the constantly changing nature of L2 motivation (Ushioda 2001) rather than its links to a static set of attitudes and aspirations. One of the most influential models attempting to capture the dynamic nature of L2 motivation is Dörnyei’s (2005) L2 motivational self system. Following his critiques of Gardner’s model, especially the concept of integrativeness, Dörnyei (2005, 2009) proposed three main concepts making up his L2 motivational self system: the ideal L2 self, the ought-to L2 self and the L2 learning experience. The ideal L2 self represents an ideal future self-representation of the individual as an L2 user, and the aspirations to close the gap between the current self and the ideal self with respect to achieving a desired future outcome. Meanwhile, the ought-to L2 self reflects the external expectation that drives L2 learners to achieve a certain level of proficiency without which there may be negative social consequences (Kim 2006, 2007; Taguchi et al. 2009). The notion of L2 learning experience refers to ‘situated, executive motives related to the immediate learning environment and experience’ (Dörnyei 2009, 29). While the ideal and ought-to L2 selves offer initial motives to learn the target language, the L2 learning experience serves to either sustain or undermine this motivation (Khany and Amiri 2018).

Models of L2 motivation have been criticised as being only applicable to a second language but not necessarily to a foreign language learning context (Dörnyei 2005). Although the dynamic nature of L2 motivation has been acknowledged, the sole focus on L2 motivation may still obscure diversity of motivation for different target languages. In particular, the unique status of English as a global language may affect learners’ motivation in learning other languages (Henry 2011). For example, the instrumentality of the L3 may not be as strong as that of L2 English, and learners’ L3 motivation may thus change easily as a result of their immediate language learning environment (Gabrys-Barker 2011).

Dynamic systems theory and L2–L3 motivations

The interactions of multiple motivational forces during multilingual learning may be difficult to capture using a theoretical framework based on a single L2 motivational system. In reconceptualising L3 motivation, DST may be able to provide a new perspective on the complexity of multiple interactions at play in multilingual learning (Dörnyei 2009). DST basically suggests that a dynamic system with two or more interlinked elements, which change over time, might result in a highly complex system, which is applicable to motivational currents in L2 and L3 learning (Dörnyei 2009; Larsen-Freeman 2015). It avoids a simplistic and reductionist view and tends to adopt a holistic approach to research. Instead of simply seeing complex matters such as language and its acquisition as consisting of individual components, DST emphasises the influence that any element in the system has on other elements and how such interactions between elements bring about new changes to the system as a whole.

DST improves on the L2 motivational self system in three respects. First, the concept of ideal and ought-to selves is context-constituted and experientially construed, meaning that it alters with the experience and contexts faced by the learners. Second, the three elements in Dörnyei’s model interact with each other to create new and more intricate motivational forces. Third, possible selves encompass motivational, cognitive and emotional elements, and again they might generate motivational forces that have never been taken into account (Dörnyei 2009). From the perspective of DST, it is plausible to presuppose that the learning of a third language will influence the motivation for an existing L2. Researchers of multilingualism (e.g. Herdina and Jessner 2000, 2002; Jessner 2008), have adopted DST as a theoretical framework to understand the complex psycholinguistic effects in learners who are/have been engaged in the learning of more than two language systems.

One of the more prominent proposals to explain multilingual interactions is Herdina and Jessner’s (2002) DMM. This model holds that cross-linguistic interaction does not simply include the traditional
understanding of linguistic transfer and interference (e.g. Lado 1957; Odlin 1989) but also includes borrowing, code-switching and more cognitive effects as a result of the presence of two or more languages in the learners’ linguistic repertoire. Although this notion has been adopted extensively in the literature in recent years (e.g. De Angelis and Dewaele 2011; Jessner 2006, 2008), these studies are almost exclusively concerned with the psycholinguistic interactive influence of languages on each other, rather than the investigation of affective factors and how these factors contribute to the concept of selves, which underlie motivation to learn an additional language. Nevertheless, a few studies (e.g. Cenoz 2003; Jessner 2008; Sánchez 2011) have explored the notion of cross-linguistic awareness and in particular, have discussed the role of ‘psychotypology’, that is, the learner’s perception of the typological closeness or distance between two languages (Kellerman 1983). The traditional view of psychotypology considers that similarity between L1 and an additional language facilitates (and thus potentially motivates) learning of the latter. Although psychotypology is a relative concept (Sánchez 2011), a perceived closer link between one’s mother tongue and a new language to learn could help reduce the psychological barrier and anxiety prior to learning this new language. However, such a hypothesis can be challenged as to whether the potentially easier learning of an additional language due to closer psychotypological effects would necessary generate greater motivation.

Herdina and Jessner (2002) have suggested that learners, when faced with an L3, need to prioritise their limited learning resources to address particular features of this language. Motivation is one of these resources. For example, learners might thus find it difficult to stay motivated in learning two languages at the same time or in learning an additional language while still maintaining proficiency in a learned language. Given this, it is legitimate to question whether a general ‘L2 learning motivation’ will be transferred to learning a particular L3 and whether the outcomes of earlier L2 learning will affect – positively or negatively – the motivation for learning a further L3. Two recent studies provide some clues. First, Wang and Liu (2017) investigated five Chinese learners’ L3 (German) learning over a two-year span and found that, like L2 motivation, L3 motivation would fluctuate during the learning process. For example, these learners’ ideal L3 selves displayed a clear upward trajectory at the initial stage but later showed an observable decline. However, their ought-to L3 selves became weaker over the two years. Second, Man, Bui and Teng (2018) discovered a dual-motivation system among multilinguals in Hong Kong, which presented interesting interactions between L2 and L3 learning motivations and highlighted a DST effect through quantitative methods. As Henry (2012, 48) concluded, ‘This [the interaction and competition of cognitive processes in acquiring language systems] would appear to be an important area for future research and one that could potentially be addressed from a possible selves perspective’.

This review has shown that some attention has been given to differences in L2 and L3 motivations, and in particular to how such differences evolve dynamically during the learning process. However, such potential differences are often obscured in the dominant research focus on generic ‘L2 motivation’. Further, multilingual motivation studies (e.g. Henry 2011, 2012) which do distinguish between motivation for learning an L2, L3, L4, etc. have typically not considered the role of the learner’s L1. From a DST perspective, any linguistic system in one’s multilingual repertoire inevitably makes an impact on, and receives influence from, other linguistic systems. This study aims to address this gap by exploring the effects of L1, L2 and L3 on additional language learning motivations from a DST perspective, highlighting the complexity of relevant motivational forces.

**Research questions**

Given the potential mutual influence between L2 and L3 in multilingual learning, this study explores the complexity of L2 and L3 motivational systems. The four research questions guiding the study are:

1. How does a learner’s L1 system affect their L2 and L3 motivations?
2. How does L2 learning motivation affect L3 motivation?
(3) How does a newly learned L3 make reciprocal influences on a learner’s L2 learning motivation?
(4) How do the interactions between L1, L2 and L3 and their motivations shed light on a dual-motivational system?

Methods

Participants

Eight learners of Japanese at a major university in Hong Kong participated in this study. They were all undergraduate students of different majors. All had Cantonese as their first language. They had been learning Japanese for at least one semester and at the time of the research, they were attending a non-credit bearing Japanese summer course offered by the university. English was a compulsory second language for them in their current programme study. They thus all had (some) knowledge of Cantonese, Putonghua (standard spoken Chinese), English and Japanese. There was a balanced distribution of gender among the participants. Table 1 details the profile of each participant.

Data collection

Each participant was interviewed about their language learning experiences and their perception of various aspects of language learning. There were two rounds of interviews for each participant. The first interview covered the major issues outlined in the Interview Guides (see Appendix) prepared by the researchers. The second interview explored any follow-up questions to clarify the first interview and elicit more relevant responses. The questions in the Interview Guides covered: (1) each language that participants had learned or were learning, including their existing L2s (English and Putonghua for all participants) and their current L3 (Japanese); (2) their initial motivation for learning Japanese and all previous L2s; (3) their own perception of their progress in these languages; (4) their current proficiency in all L2s and the L3; and (5) the respective cultures that influenced their learning and any possible cross-linguistic factors contributing to their motivation for learning their L2s and their current L3. The interviews were mostly conducted in Cantonese, the language that the participants felt comfortable using for self-expression. However, some of the interviews were also conducted in English where participants felt comfortable using this language. The Cantonese interviews were recorded, transcribed and translated into English by the researchers. The transcriptions captured every detail of the content mentioned by the interviewees, including any hedges, fillers and even noticeable pauses.

Data analysis

The interview data were read, re-read and coded by the researchers. A conventional three-step coding process was carried out following Corbin and Strauss (2008). During the first stage (i.e. open coding), the researchers read and re-read the transcription to compare the data and continually asked questions about what was and was not understood. Next, different categories, properties and dimensions emerging from the data were identified in a systematic manner. During the second stage, axial coding took place, where the data were pieced together in alternative ways to allow connections to be made between the previously established categories. During the last phase of coding (i.e. selective coding), a final picture interpreting the data was established, which will be described later on.

Results

The influence of existing L1 and L2 on L3 motivation

The interviewees typically viewed their L1 (Chinese) and their L3 (Japanese) as similar linguistic systems, expressing their ease in learning Japanese. For example, Apple mentioned:
<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Sophia</th>
<th>Cathy</th>
<th>Eason</th>
<th>Apple</th>
<th>Reen</th>
<th>Sam</th>
<th>Matthew</th>
<th>Timi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
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<td>Education</td>
<td>Biology</td>
<td>Social work</td>
<td>English</td>
<td>Business</td>
<td>Social work</td>
<td>Social work</td>
</tr>
<tr>
<td>Sex</td>
<td>F</td>
<td>F</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Place of Birth</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>Mother Tongue</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
<td>Cantonese</td>
</tr>
<tr>
<td>Languages Learned</td>
<td>Cantonese (L1), Putonghua (L2), English (L3), Japanese (L4)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
<td>Cantonese (L1), Putonghua (L2), English (L2), Japanese (L3)</td>
</tr>
<tr>
<td>Desired English Level</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Native</td>
<td>Advanced</td>
<td>Advanced</td>
<td>Advanced</td>
<td>Advanced</td>
</tr>
<tr>
<td>Desired Japanese Level</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
<td>Professional</td>
</tr>
<tr>
<td>Travel Experience</td>
<td>China Philippines Singapore, Japan</td>
<td>Thailand, Japan</td>
<td>Thailand, Japan</td>
<td>Japan, Korea, Taiwan, Singapore</td>
<td>Japan</td>
<td>Japan, Korea, Taiwan, Singapore, Japan</td>
<td>Japan, Korea, Taiwan, Singapore, Japan</td>
<td>Japan, Korea, Taiwan, Singapore, Japan</td>
</tr>
</tbody>
</table>

Table 1. Profiles of the eight participants.
Japanese and Chinese are two different but to some extent similar languages. Some of the language points look similar. I'll feel it's quite easy. (Interview 2)

Eason also mentioned the proximity of Japanese culture to Hong Kong's culture. This she indicated helped her enjoy learning Japanese. Learning this language allowed her to develop a more nuanced understanding of Japanese culture:

I like watching anime and reading manga. But I don't like translated anime and manga. They are not really translated well, especially manga. So, I want to learn Japanese to better understand its culture, which is closely related to Hong Kong culture. I want to be a member of the Japanese-learning community. (Interview 1)

Sam provided a more concrete example of how the Chinese language encouraged him to look deeper into the Japanese language, stating that he felt he could gain access to more input in the Japanese language because of perceived similarity with Chinese. More specifically, he noted that the Chinese language aided his understanding of Japanese song lyrics and gave him a sense of achievement, a feeling that he considered to be important, increasing his likelihood of succeeding in future language learning. He also recognised that his L1 positively influenced his L3 motivation because the Japanese Kanji writing system adopted Chinese logographic symbols:

I can understand the lyrics of Japanese songs because there are many Chinese characters. I'll download the song and listen to how the words are pronounced. Listening to Japanese song is a relaxing thing for me. (Interview 2)

However, neither Apple nor Sam felt that knowing Japanese helped in any way with their personal academic development or was accorded any particular value in Hong Kong society. The low instrumentality of Japanese, contrasting with the high instrumentality of their L2 English, was a potential negative pressure on these learners' L3 motivation. For example, Apple reported:

Learning Japanese does not help me gain better performance in my school tests. Learning English is a must in terms of academic performance or future development in the Hong Kong society. I can't stop learning English. Basically, it's not Japanese that helps me succeed in this society. In Hong Kong, you have to use English if you want to excel. (Interview 1)

However, both Reen and Matthew maintained a reasonable level of motivation for Japanese learning through the construction of an ideal L3 self. It seems that an L3 self can be positive when connected to a variety of domains of one’s future life. In Reen’s case, his passion for Japanese culture and society (integrativeness) and ensuing imagined participation in the culture and society plays an important part in L3 motivation:

My motivation for learning Japanese is mainly related to my own imagination that I would be using Japanese to travel around Japan, finding a future job related to translating Japanese games into English and reading Japanese manga on my holidays. (Interview 2)

Therefore, it does not seem to matter whether the L1 is typologically similar to an L3 for L3 motivation to take place. As long as two languages and even two cultures are perceived by the learner as being similar or close, then some sort of motivation for L3 learning can be generated.

As for the influence of an existing L2 on L3 learning, some participants pointed out clear connections between their L2 English and the other languages that were being learning. The facilitative effects of the L2 gave them more confidence in both learning a new language and in the belief that the learning experience would require less effort than if they had had no prior language learning background. Cathy made the following points:

The learning of English has helped me to better prepare for learning other foreign languages, for example, Japanese, which has a massive pre-existing vocabulary to draw on because of the thousands and thousands of English words borrowed into the Japanese language to date. (Interview 1)

To Sophia, the proximity between Japanese and her own Chinese culture was a source of motivation for Japanese learning. In contrast, the distance between English culture and Chinese culture was seen as a hurdle in learning English:
I like the Japanese culture, I like manga, I like animations and Japanese is similar to Chinese. It is easier to learn Japanese, so why not? [...] As a Hong Konger, although I am quite used to eating Western food and I have learned English for many years, I am still not good at understanding the Western culture. The culture is too abstract. Sometimes I think it is difficult to improve my English. (Interview 1)

Some other interviewees held quite an opposite attitude towards the influences of their L1 and L2 on their L3, as Apple pointed out:

Learning Japanese is not actually influenced by my good English foundation. I don’t think English learning helps me improve my Japanese. Actually, except for the loanwords, I had a very difficult time in learning Japanese. I don’t think the Chinese words help me learn Japanese. The pronunciation is totally different. (Interview 1)

These latter three excerpts indicate how the learners compared the new L3 language system against their existing language knowledge leading to estimates of the relative difficulty of the L3. Such metacognitive judgements are important in enabling learners to feel confident about managing their new language learning and have been argued to be a key component of motivation. The participants generally reported that being previously exposed to at least one similar linguistic system was facilitative for their current language learning, thus highlighting the importance of learners’ psychotypology in motivation.

A surprising and yet intriguing finding was that perceived dissimilarity between their L1 and their existing L2 (English) motivated some participants in learning their L3 (Japanese) essentially because they experienced the L3 as ‘easier’ than the L2. Although the interviewees did not explicitly attribute demotivation directly to their current perceptions of the English language, they made frequent comparisons between the two foreign languages both in terms of their inherent complexity and the instructional methods associated with learning them. Typically, English was described as ‘complicated’ (Sophia, Interview 1) while Japanese was considered ‘easy’ (Apple, Interview 1). Significantly, Apple, Sophia and Cathy all reported a strong instrumental need for L2 English, regardless of their respective proficiency. However, they also indicated that they had never been interested in mastering English at a native-like level, whereas they all felt strongly acculturated with Japanese culture and expected to reach a level of competence above the merely conversational. They expressed a sense that their three languages served different purposes. For example, Cathy said:

Speaking Cantonese was for communicating with my parents. It was natural and motivating to learn Cantonese when I realised that I could use it. And the learning of Cantonese has an impact on who I am. English was a school subject and a must for career development in Hong Kong. I was motivated to learn Japanese due to an interest. I was quite encouraged when I watched movies or anime and suddenly understand the meanings of some Japanese sentences. (Interview 2)

The comparison and contrast between L2 and L3 learning experiences seemed to play an important role in promoting L3 motivation in the case of these participants. They were clearly aware of the different ways that the two languages were learned (and taught), which in turn fed into their preference for learning Japanese instead of English. For instance, when asked about the areas in which Japanese courses were ‘better’ than English ones, Apple responded:

The Japanese teachers are very willing to answer your questions, but the English teachers [...] always criticise you, and take it for granted if you do it well. (Interview 1)

Sophia and Cathy respectively also noted similar differences between the learning environments for Japanese and English:

Japanese courses are very interactive and informal. The teachers’ pronunciation is really good. The learning environment is different. I am learning it due to interest. Everybody is the same. It is not like English, for which we were required to learn, either we have interest or not. (Sophia, Interview 1)

The English course was not helpful because it only gave us some homework and asked us to finish it, and the learning atmosphere in the Japanese course is quite good because the classmates really have interest in the language. (Cathy, Interview 1)
These opinions also reflect the status of these two languages at the university. L2 English is a compulsory subject, which makes it a high-stakes course. In contrast, the Japanese class is a summer course of the students’ own choice where the enrolment is voluntary and the study outcome is not particularly consequential. Cathy summed this up as follows:

I think the learning of Japanese and English are totally different. One is because of interest, for example, Japanese. One is because of a must from parents, school and society, such as English. It is not competing, but actually it can be compromised, depending on how you perceive and how you take actions for different language learning. (Interview 2)

Thus, the participants experienced a stark contrast between the strategies or approaches associated with their respective L2 and L3 learning experiences. L2 English classes seemed to be characterised by traditional methods, such as formulaic teaching with rote memorisation together with drill-like assignments, which the participants found onerous. They preferred the livelier learning environment they experienced when learning Japanese where they could learn about the culture and daily language, and this became a source of motivation.

Obviously, such classroom-related perceptions can arise in relation to any language learning experience and are not necessarily triggered by comparisons engendered by multiple language learning. However, it seems clear from our data that learners build their metacognition based on existing language learning experience, both in terms of expectations about learning and expectations of the ease or difficulty of the target language (referred to under the term ‘psychotypology’) and thus perceptions of L3 learning are strongly influenced by L2 learning, which impacts on L3 motivation. For example, it seems plausible that the demotivation that Sophia expresses below in relation to learning L3 (Japanese) grammar may stem from her experience of L2 English, whose grammar was no doubt perceived as distant from her L1 (Cantonese). The grammar of the psychotypologically distant language (English) was experienced as requiring long, and potentially demotivating, effort. When faced with ‘grammar’ in L3 Japanese, this sense of demotivation seems to be carried over. We suggest that had Sophia started with the psychotypologically closer Japanese as her L2, rather than English, with similar instructions she was receiving in her current L3 course, she might not have developed this demotivation associated with grammar instruction.

I don’t like Japanese when it was all about grammar. It is a bit formulaic. If it is like the way we learned English, then I don’t think I can learn it well even after 15 years. (Interview 2)

Apple also mentioned grammar drills as part of conventional English-language learning but she expected a different approach to her Japanese learning. She stated:

We are accustomed to the teaching method of learning English through drilling exercises of tenses and grammar rules. But these should not be a part of Japanese learning. (Interview 1)

When clarification was sought about her different expectation on Japanese instruction above, Apple expressed her preference for a fun learning environment in the L3 and her objective for learning this language as a functional one. Therefore, grammatical well-formedness became lower in the priority. She claimed:

Of course it should be different! I take this summer course out of my interest. I don’t want to go through the rote drilling and teacher criticism for ‘wrong use’ again. I want to have fun and learn useful Japanese for daily use only! [Interviewer: Such as?] Hmm … Japanese songs and TV shows.

It seems that previous L2 learning experiences play an important part in L3 motivation. If rote L2 grammar learning is demotivating, a similar sentiment is likely to arise when L3 learning involves grammar drills. Therefore, it is not surprising that Sophia compared the learning approaches for English and Japanese before generating her motivation to keep learning the L3 as she found her L3 class to be somehow different.
The impact of L3 learning on existing L2 motivation

In the previous section we explored the intuitively familiar notion that a learner’s L1 and L2, and learning experiences linked to these languages, influence motivation for learning an L3, and we argued that this was due to the learner’s perceived similarities/differences between the languages themselves and the respective learning contexts, as well as the perceived values and statuses of these additional languages. In this section we explore the other – perhaps counter-intuitive – side of the complex multilingual motivation system: that is, the reciprocal impact of L3 learning on learning motivation for an L2.

The reports from the interviewees typically point to their perception that, after beginning L3 Japanese, their L2 (English) learning stagnated. Aside from the obvious reason that learners conceivably had less time to spend on their L2 English when their focus shifted to another language, participant responses suggested that their motivation for progressing in English declined. This may have been because of an experience of positive motivation for the new L3 – motivation is typically high at the start of learning a new language – which then triggered a less positive evaluation of their L2 learning. For example, Cathy below contrasts her sense of progress in Japanese with her sense of stagnation in L2 English:

I think I made progress in Japanese learning every time I learn it. But for English, I have learned it for many years. I cannot feel any progress for English. This language has been stagnant for a long time. (Interview 1)

Other students reported specific effects of L3 learning on their L2. For example, Timi mentioned the influence of her newly learned Japanese on her English pronunciation. Her recognition of English loanwords in Japanese turned out to be a curse rather than a blessing:

The more I learn Japanese, the more bizarre my pronunciation of some English words will become. Sometimes when I pronounce English words, those words were naturally pronounced in a Japanese way. There are so many loanwords, but the pronunciation is so different. Maybe I can now understand why some Japanese people do not speak good English. (Interview 2)

Meanwhile, Sam found that after his Japanese summer course, he was motivated to code-mix Cantonese and Japanese rather than, as previously, Cantonese and English:

I used many English words in my daily [Cantonese] speaking. That’s Hong Kong you know [laugh]. But now I insert more Japanese words when I speak, especially to friends and classmates in this course. That’s cool. (Interview 1)

Interestingly, Eason reported that a perception that learning the L3 could undermine L2 learning. His effort in L3 learning was so obvious that some others close to him became worried about his L2 English:

My initial motive of learning Japanese was that it was very practical and useful, and my younger brother laughed at me by saying students who learn too much Japanese will have poor English. (Interview 1)

Some of the participants began to make predictions of their final attainments in their two additional languages soon after they started learning L3 Japanese. For example, Sophia commented as follows, mentioning again her sense that she could achieve more in Japanese because of the complexity of English, as well as her greater interest:

I think my Japanese will be better than my English because I have a greater interest in it. If I learn English and Japanese at the same time, I think English is more difficult. (Interview 2)

Thus, Sophia’s L3 learning seems to have made her perceive her L2 learning as more ‘difficult’, with a corresponding impact on her motivation. A similar phenomenon was reported by Cathy. She revealed that she had predicated her motivation for L2 English on her ideal L2 self vision of mastering an international language and her ought-to L2 self need to avoid being looked down upon socially. However, Cathy’s interest in Japanese caused her to reformulate her ideal L2 self expectations, moving from the goal of native-like proficiency in English to (advanced) functional abilities. She said:
I’d like to study Japanese more now, I think. I don’t think, hmm, I mean I won’t focus on English like I did in the past. As long as I can communicate in English fluently, I think that will be good enough.

Two of the interviewees showed the clear influence of growing cross-linguistic awareness in their interviews. Their insights supported motivation both for L2 and L3 learning, almost in the absence of any instrumental or integrative goal. For example, Timi commented that the difficulties she encountered in learning more advanced Japanese lowered her motivation for this L3. At the same time she had higher preference for English learning:

I thought Japanese and Chinese are quite similar. But when I learned more, I found the two languages are totally different. I found it more and more challenging to learn Japanese. I wanted to join this Japanese-learning community [the summer course – annotation by the authors]. But I found that the more I learn Japanese, the more I want to speak in English. (Researcher: you mean English is easier than Japanese for you?) Yes. Difficult for me to learn Japanese well. (Interview 1)

It seems that Timi had developed a crosslinguistic awareness, triggered by learning L3 Japanese, to explore ‘languages’ in depth. This intrinsic motivation seemed to encourage her to explore how languages differ, adopting diverse ways of expressing the same concept. A similar motivation was expressed by Cathy:

The more I learn English, Japanese and Chinese, the more I want to dig more into the differences and similarities between those languages. I formed an awareness of trying to find out more. It is quite fascinating to know the language systems. It may be because I am studying in an education programme. I have a nature of being a teacher, and a curiosity to know more about the language system. (Interview 1)

Overall, although the L2 motivational self system considers the dynamic nature of motivation, like most language motivational theories, it places emphasis (almost exclusively) on the function of language as a communicational tool while disregarding a language’s appeal as an object of interest to learners. While motivation of this kind may not exist among many language learners, it should not be neglected in the attempt to unify theories of L2/3 motivation. In line with the DMM, some of our interviewees (Apple and Cathy above) exhibited a clear analytic awareness of their linguistic repertoire and this enabled them to explore similarities and differences between their L2 and L3. In the process of doing so, they simultaneously raised their motivation for learning both languages.

Discussion and conclusion

Our research reveals complex interactions between learners’ L1, L2 and L3 linguistic knowledge and their foreign language learning motivations.

RQ1 concerned the effects of the L1 system on learning non-native languages, which has rarely been investigated from a dynamic system perspective. That the interviewees mentioned the positive influence of the Chinese language in learning the Japanese language suggests that they were becoming highly aware of their multilingual repertoire, developing what Jessner (2008) calls a ‘multilingual monitor’. They were able to attribute some of their motivation in learning L3 Japanese to its perceived proximity to their L1. This attribution made a slight contrast to Dörnyei’s (2005) theory of self systems in which an L1 is not a major concern. Dörnyei (2005) proposed that ideal L2 self and ought-to L2 self are two initial motives for learning an L2 but these two motives must be sustained by positive L2 learning experience for the motivation to fuel learning. However, the reports from two of our participants, Apple and Sam, do not appear to reflect either of these two motives; that is, they did not consider that knowing Japanese would in any way help their personal development or avoid any undesirable social consequences. Instead, they were more concerned with the psychotypological similarities between the L1 and the L3 and how this familiarity could benefit their subsequent learning and chance of success. The interviewees appeared to be projecting their learning outcomes based on typological similarity, and this then became a source of motivation. This is in line with
Kellerman’s (1983) concept of psychotypology. The findings suggest that psychotypology can feed into the L2 self-system creating the initial motive for learning an L3.

RQ2 explores the influence of an L2 on L3 motivation. Henry’s (2011) study explored the impact of L2 English learning on L3 (Spanish, French or Russian) self and found, paradoxically, that a strong L2 self may prove detrimental to the formation of sustained L3 self because the more established L2 self system would be constantly contrasted with an unstable L3 self system. Difficulties in starting learning a completely new L3 would be amplified when the participants recalled their more successful L2 learning experiences. Our study shows a slightly different perspective in that we have seen how a learner’s psychotypology contributes significantly to their motivation by allowing attention to be given to language learning comparisons, language differences, level of difficulty and anticipated learning effort. According to DST, the learner’s motivation might be influenced by a wide range of linguistic factors (e.g. first language and the target language) and non-linguistic factors (e.g. self-confidence, the prestige of the target language and one’s impression of the language community culture). These influences can be seen in Apple and Sam’s interviews. Their responses suggest, again somewhat counter-intuitively, that the low instrumentality of their L3 learning and high instrumentality of their L2 English was a major factor influencing their L3 motivation. Cathy and Sophia, meanwhile, saw their L3 as English, due to its significant difference from Chinese, is a particularly difficult language to learn. It appears that the different status of each language (their pragmatic and symbolic values) and the learners’ perceived difficulties of these foreign languages affect their motivation to learn each language (Teng and Bui 2018; Bui, Teng, & Man, in press). Therefore, it comes as no surprise that motivational influences are interactive as an L2 exerts impact on L3 motivation and at the same time this current L3 has reciprocal motivational effects on L2 learning. The perceived ease of an L3 can cause learners to lose motivation for a more challenging L2. On the other hand, the perceived lower status of L3 Japanese compared with L2 English can suppress motivation for the L3.

The present study has also shown how ideal L3 selves can be established that are distinct from any selves created in relation to the L2, even if that L2 is English, a powerful global language likely to be linked to all the domains of one’s present and future selves. Sophia and Cathy formed multiple ideal selves. In particular, Cathy reported that multiple selves in learning L2 and L3 can coexist as long as the roles of the selves are different. Apple also expressed that Japanese did not help her succeed in the Hong Kong society, and her lack of good English foundation affected her Japanese learning. It appears that the coexistence of multiple selves in learning L2 and L3 happened also because of different learning experiences in addition to the aforementioned cross-linguistic factors. For example, Apple, Sophia, Cathy all commented on the English and Japanese courses. They valued the importance of learning Japanese in a natural way. They reported that learning Japanese should not be the same as English, which was mainly taught through drilling exercises of grammar rules. This may also affect their perceived relevance to future goals. On the whole, learning situations and learner experiences contributed to the establishment of multiple self systems in L2 and L3 learning.

To address RQ3, the present study, while partially replicating Henry’s (2011, 2012) research of L2 influence on L3 motivation, further explores the reciprocal effect of L3 learning on L2 self, which has rarely been investigated. As Reen’s case indicates, when a learner clearly identifies an L3 with particular domains in their current and future life, it is easier to construct a viable self-image of the L3. However, the development of an L3 self may also have a dampening impact on the development of previous L2 selves. The power relationship among multiple selves in L2 and L3 learning appears to constitute a complex system (Larsen-Freeman 2015). This multi-dimensional relationship may change depending on one’s identification with possible L2 selves in particular domains of use. Hence, a subsequently developed L3 self might undermine one’s established L2 learning. As Timi’s case suggests, learning the L3 – and having positive motivation for it – affected the pronunciation of her L2. As proposed in Csizér and Dörnyei (2005), the major cause of conflicts among different
selves in learning L2 and L3 may come from the dominant L2 (i.e. English) itself or from multilingual learners’ limited language learning capacity.

As Herdina and Jessner (2002) suggested, learners often need to prioritise their limited cognitive resources, motivation included, in learning a new (third) language. It follows that a previously learned language (i.e. an L2) could be negatively affected when a learner’s current motivational focus is on the L3 being learnt. While L2 motivation may decline due to the newly generated motivation for the L3, Cathy’s case suggested that her L3 motivation brought about a re-direction of focus in her L2 learning. Rather than aiming to become a native-like L2 speaker in English, she opted for a more functional approach to English and aimed to become a fluent (enough) English learner. Such a change does not necessarily entail a decline in L2 motivational force per se.

RQ4 pertains to the dual-motivation system theory that was proposed in Man, Bui and Teng (2018). The findings from this research have lent support to this conceptualisation of multilingual learning motivation, which exhibits features of a complex dynamic system. First, the interview data showed different and quite often conflicting motivational systems for learning an L2 and a subsequent L3. Second, there are a series of complex relations and interactions between these two motivational sub-systems in an individual’s language learning motivation. On the one hand, an individual’s existing language or languages (L1 and L2), especially those with closer psychotypology to the L3, may have a positive influence on L3 learning motivation. The L2 learning experience also helps to shape and sustain L3 motivation. Then, the addition of an L3 has a reciprocal and quite often negative impact on L2 learning motivation. From a DST perspective, these findings reveal the change brought on by a new element (L3) into an existing system (L2 motivation), which leads to the rise of a new system – the dual-motivation system. Finally, it was discovered that factors such as psychotypology, past L2 learning experience, self-confidence, perceptions of the L2 and L3 communities and even the learners’ backgrounds (e.g. Apple as a translation major had distinctive views on L2 and L3 from other participants), all contribute towards shaping and evolving the complex and dynamic relations between L2 and L3 learning drives in the dual-motivation system.

This study had several limitations. First, more sources of data collection, (e.g. asking students to write diaries) were needed for more thorough exploration of L2 and L3 motivation, and triangulation of our interpretations based on a single data source. Second, although we do not attempt to generalise our findings to learners in similar contexts to our participants, the limited number of participants clearly restricts our insights into the L2/L3 motivational selves. Finally, longitudinal studies are needed to enable us to observe how the students’ motivation changes in learning L2 and L3 over time. We suspect, for example, that the positive motivation felt for L3 Japanese in contrast to the lack of motivation felt for L2 English, mentioned by some participants, may reflect the typical high motivation generated at the start of studying a language, contrasted with the typical fall-off in motivation experienced after many years of study.

Despite these limitations, this study showed a latent but identifiable dual-motivation system among L3 learners that may provide a more complex and comprehensive account of multilingual motivations than previous L2 motivation models. The influence of L1 on L2/L3 motivations and the reciprocal effects of L3 on the maintenance or attrition of L2 motivation that are revealed by the findings of this research further highlight this complex motivational system in multilingual learning.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix. Indicative questions from the Interview Guide (full version available upon request)

**Part I General information on linguistic repertoire**

1. What is your mother tongue? What language(s) do you use at home?
2. Besides Japanese, English, and your mother tongue, do you know any other language(s) or dialect(s)?
3. Of all the languages you know, could you rate each in terms of: (1) your personal preferences; (2) frequencies of use; (3) degrees of proficiency in terms of ‘listening’, ‘speaking’, ‘reading’, and ‘writing’ (1 = lowest 10 = highest)

**Part II L2 English Learning**

1. When did you start learning English?
2. If it is not a compulsory subject, do you think you will learn English? Why?
3. What factors do you think have contributed to your English learning achievement or failure so far?
4. What proficiency level in English would you like to achieve? Why?
5. Do you have any plans about how to achieve your goal? How long will it take?
6. Could you comment on the similarities and differences between Chinese and English?

**Part III L3 Japanese Learning**

1. When did you start learning Japanese?
2. Why have you decided to learn Japanese? Do these factors, if any, continue to influence you during your learning process?
3. Will you continue to take Japanese courses in future? Why?
4. What factors do you think have contributed to your Japanese learning achievement or failure so far?
5. Do you have any plans about how to achieve your Japanese learning goal? How long will it take?
6. Could you comment on the similarities and differences between Chinese and Japanese? And English and Japanese?
Part IV Global Orientation

(1) (1.1) Could you tell me to what extent you think you belong to:
   (1) Hong Kong; (2) China; (3) the World (1 = lowest 10 = highest).
   (1.2) Why?

(2) Could you tell me what Chinese cultural values you identify yourself with, and what Chinese cultural values you do NOT identify yourself with?

(3) How do you view the political relationship between (a) China and Japan; (b) China and USA, Britain, Canada, New Zealand, or Australia? (you may comment on each country separately)

(4) Do you think the situations in Q (3.2) has influenced your attitude towards Japanese and English?

(5) To what extent would you like/not like to study or work in another country for a period of time:
   (5.1) If you have the chance, which country do you want to go? For how long? For study or work or both?
   (5.2) Have you been to other countries for study or internship?