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Chinese language learning motivation: a study of individual-contextual interactions

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ABSTRACT
This study investigated motivation in the context of L2 Chinese in the USA. A total of 120 college students took the survey and 27 of them participated in post-survey interviews. Through a mixed-methods design, the study captured interactions between motivation and the learning environment in the learning process. The results revealed six motivation factors, of which *the ideal L2 self* was the most powerful predictor for *intended effort*, and significantly correlated with after-class activity engagement in which students committed actual time to learning. In addition, the *anti-ought-to self* significantly correlated with all the motivation factors and was also a significant predictor for *intended effort*. It functions as an intrinsic motivation featuring the active agent role of the individual learner. Lastly, the learner's positive interactions with the learning context via self-regulatory strategies and accompanying procedural knowledge led to a positive experience, which sustained learning.

Dörnyei (2005, 2009) proposed the Second Language (L2) Motivational Self System that has broadened the theoretical framework in L2 motivation research. It not only addresses the multifaceted nature of L2 motivation, but also promotes more research to scrutinise motivation constructs and to validate the theory. Studies have applied the model in various geographic areas and supported its applicability across different contexts (e.g. Csizér and Kormos 2009; Ryan 2009; Lamb 2009; Papi 2010; Xie 2014; Yashima, Nishida, and Mizumoto 2017). Nevertheless, a number of related issues have been under-investigated, particularly in the L2 Chinese context.

The ought-to L2 self is related to the learner's conformity to other's expectations and to fulfilling societal obligations to avoid negative outcomes. There seems to exist another construct, the anti-ought-to self, a rebellious motive with psychological reactance to the expectations of learners' external contexts. As Thompson and her associates theorised (Liu and Thompson 2018; Thompson 2017a; Thompson and Vásquez 2015), the uniqueness and challenge of the task can become the aspiration for learning. They further argued that the anti-ought-to self is closely related, yet absent in the L2 Motivational Self System.

Instrumentality is viewed in two distinct types of motivation, the ideal L2 self and the ought-to L2 self (Dörnyei 2009). Research has shown that instrumentality is a prevailing motive in the L2 Chinese context (Campbell and Storch 2011; Comanaru and Noels 2009; Lu and Li 2008; Rueda and Chen 2005; Wen 1997, 2011, 2013; Wen and Piao 2020; Xie 2014; Yu and Downing 2012). Findings on the relationship between instrumentality and continuation of Chinese study, however, are

not consistent (e.g. Lu and Li 2008; Wen 2011, 2013). These studies rarely operationally distinguish instrumentality-promotion from instrumentality-prevention. The relationship of ideal and ought-to selves to instrumentality is a crucial area that deserves more investigation in the L2 Chinese context.

Research has examined the effects of the components of the L2 Motivational Self System on motivated learning behaviour. Learning engagement and effort, perceived as motivation power, are derived from interactions between the learner, context, and learning experience. Motivation power is usually operationalised as the self-reported intention to make an effort, although it is not clear whether intended effort actually accounts for motivated behaviour (Yashima, Nishida, and Mizumoto 2017). Papi (2010) called attention to the possibility that there may be differences between learners' intended and actual efforts. This study addresses the issue by analyzing the effort intended and actual time individuals committed to various activities outside of class, as well as the interactions between motivation and learning in a classroom setting.

Guided by the theoretical frameworks from Dörnyei (2005, 2009) and Thompson and Vásquez (2015), this study examines complex relationships among motivation, L2 learning, and sociocultural factors. L2 motivation research has primarily been conducted in EFL/ESL settings. Recent years have seen a new trend of research in multilingualism and learners as global citizens who choose their preferred languages to learn and communicate (Dörnyei and Al-Hoorie 2017). The present study, opting for a context of Chinese as learners' L2 and/or L3, explores contextual dynamics of the L2 self and interactions between motivation and motivated behaviour. Motivation and learning emerge in response to contextual processes, and in turn, contribute to reshaping the context.

Literature Review

The L2 Motivational Self System

Learning an additional language is a part of the identity that reflects how one envisions oneself. Dörnyei (2005, 2009) postulates that motivation and learner's self-identity develop through interaction and ongoing situated processes via imagery and visualisation of an ideal future self. The key notion consists of three motivational components. First, the Ideal L2 Self is the L2-specific facet of one's 'ideal self', encompassing aspirations one would desire to achieve (Dörnyei 2009, 29). It is powerful as it generates strong self-vision and imagery. Future images guide present actions, promoting learners to exert effort in the learning process. Second, the Ought-to L2 Self refers to the attributes one believes one ought to possess to meet the expectations of society and other people. This preventive tactic is related to safety and social obligations. The ideal L2 self is what a learner would desire to become in acquiring the language, whereas the ought-to L2 self is what the learner feels he/she is obliged to become based on external pressures. Third, L2 Learning Experience includes situated 'executive' motives related to the immediate learning environment and accumulated experience. Learning experience is often referred to as the attitude toward the learning situation, such as enjoyment derived from learning (Yashima, Nishida, and Mizumoto 2017). Positive learning attitude and experience directly affect the formation of future selves and vice versa (Csizér and Kormos 2009; Kormos and Csizér 2008; Taguchi, Magid, and Papi 2009; You and Dörnyei 2016; Wen 2013). Thompson (2017b) points out that the learning experience, derived from the context of the language learning process, is interactive by nature with a focus on 'language use in context' (483). In a recent examination, Dörnyei (2019, 19) defines learning experience as 'the perceived quality of the learners' engagement with various aspects of the language learning process'.

The theoretical framework of the L2 Motivational Self System draws upon the Self-Discrepancy and 'possible selves' theories from mainstream psychology (Higgins 1987; Markus and Nurius 1986), and integrates motivation theories from L2 acquisition including Gardner's (1985) L2 motivation model, Noels's (2003) framework based on Self-Determination Theory by Deci and Ryan

(1985), and Ushioda's sociocultural concepts of a 'person-in-context' and 'self-reflective intentional agent' (Ushioda 2009, 218). Markus and Nurius (1986) posit three types of possible selves: what people might become: the general possibility of a future self; what they would like to become: positive images of a possible future self; and what they are afraid of becoming: negative images of a possible future self. Along similar lines, Higgins (1987) conceptualises the 'self' in two distinctions: the ideal self and the ought-to self, known as self-guides. They have contrasting functions. An ideal self has a promotion-focus to a desired end-state whereas an ought-to self has a prevention-focus to a feared end-state. Motivation is triggered when people want to narrow the discrepancy between a current self and an ideal or ought-to self (Higgins 1987). The imagery of an ideal or ought-to self is critical in the process of motivational visualisation. It promotes a learner to attain his/her possible future self.

The anti-ought-to self

The self-discrepancy theory (Higgins 1987, 319) postulates that 'one domain of the self (actual; ideal; ought) and one standpoint on the self (own; significant other) constitute each type of self-state representation'. The distinction between individual 'self' and 'other' is one of the central notions. Thompson and Vásquez (2015) propose the concept of the 'anti-ought-to self', another psychological aspect of self, focusing on the dimension of 'I' versus 'other'. Drawing upon the self-discrepancy theory and psychological reactance (Brehm and Brehm 1981), Thompson and Vásquez posit that this motivation emphasises L2 learners' reactance to societal expectations and consensus. Thompson (2017a) distinguishes the influence of external forces in the ought-to from anti-ought-to selves as being individual-submissive/context-dominant in the former and individual-dominant/context-submissive in the latter. The anti-ought-to self represents the aspiration to do what is perceived by others as difficult or different; and likely be discouraged. Thompson and Liu (2018, 1) operationalised the anti-ought-to self as 'a language learner's desire to study a language because of the innate challenge or the desire to stand out'. In other words, motivation is internally originated. A learner's desire to be one future self in an agent role would initiate action to achieve his/her own goal despite public opinions.

Research on the Anti-ought-to self (Liu and Thompson 2018; Thompson 2017a; Thompson and Liu 2018; Thompson and Vásquez 2015) provides evidence that learners are motivated to react to external pressures. Thompson (2017a) and Thompson and Vásquez (2015) examined Chinese language learning narratives in a quantitative perspective with a limited sample size. It is the interest of this study to explore the role of the anti-ought-to self in L2 Chinese motivation in a mixed-methods approach and with a much larger sample size.

Instrumentality

Based on Higgins (1987, 1998) promotion/prevention distinction, instrumentality consists of two functions. Instrumentality-promotion connects the idealised self image with professional advancement such as learners' desire to develop language competence for the sake of more specific career plans and success (Campbell and Storch 2011; Wen and Piao 2020). Instrumentality-prevention is related to the ought-to self, with passive attributes such as avoiding unemployment or pleasing family members (Wen 2013). Taguchi, Magid, and Papi (2009) identified positive attitudes toward L2 culture and community as instrumentality-promotion to obtain personal goals, whereas the obligations and external influence were identified as instrumentality-prevention, closely related to the ought-to self, functioning as the regulation of duties.

Instrumentality is a significant variable in L2 Chinese motivation. Wen (2013) reported six factors in relation to learners' intention for future Chinese study across proficiency levels. Instrumentality-prevention was a significant predictor for the elementary and intermediate groups. When learners reached the advanced level, linguistic self-confidence became the significant predictor

for intended future Chinese study. Instrumentality-prevention played a utilitarian role with three groups: the lower proficiency learners, heritage learners, and those who took the course for language requirements (Wen 2011, 2013). Instrumentality-promotion, however, was observed with learners at more advanced levels (Campbell and Storch 2011; Wen and Piao 2020) who had more specific plans to become global members of a multilingual workforce, particularly for their concrete career development.

Interaction: the learner, learning context, and effort

Motivation is viewed as inner desires that interact with learning strategies, experience, and context (Thompson 2021). Higgins (1987) postulates that future self-guides initiate distinctive self-regulatory strategies, accounting for individual differences in terms of which self-guides motivate learners more forcefully and how relevant the strategies are in reducing the discrepancy between current and future self states. Personal and relevant future self-guides, as a powerful motivational tool, may vary between learners, generating a drive for action. Learners' interaction with learning tasks and environment influence learning engagement. In the process, self-regulated skills and relevant procedural strategies react to learning and further the development of the ideal and ought-to selves (McEown, Sawaki, and Harada 2017; Yashima, Nishida, and Mizumoto 2017). When a learner's future self-image is accompanied by procedural strategies, 'a repertoire of appropriate plans, scripts, and self-regulatory strategies' (Dörnyei 2009, 25), the learner is able to positively interact with the learning context and sustain learning. The present study analyzes the relationship between motivation constructs and motivated behaviour, the effort for learning engagement.

This study aimed to fill the gap in L2 motivation research in multiple ways. First, it broadens the research arena by incorporating the anti-ought-to self, an important motivation construct that has not been adequately investigated (Thompson and Vásquez 2015). Second, it adds to the general L2 research by conducting the study in an L2 Chinese context, an underpresented language in L2 motivation research. Third, the study adopts mixed-methods, using a quantitative approach to analyze and compare data to generalise findings to a wider population, and a qualitative approach to examine the interactive and emerging nature of L2 Chinese motivation. In-depth individual interviews in this study enable learners to reflect on their motivation and to articulate the subtle details that may likely be missed in a quantitative study.

Motivation in this study is conceived as a multidimensional system interacting with contextual variables, as specified by Ushioda and Dörnyei (2012, 403), 'in terms of how learners think about their learning and process relevant experience, and how their thinking affects their motivation and engagement in the learning'. The motivation components investigated in this study would not traditionally be on a list of research agenda. This study focuses on the interrelationship between the ideal, ought-to, anti-ought-to L2 selves and learning experience, as well as how motivation impacts motivated behaviour. The research questions that guided this study are:

1. What are the motivation components that drive L2 Chinese learners in the American university setting?
2. What are the relationships among the motivation components in learning L2 Chinese?
3. How do motivation factors and learning strategies interact to sustain learning?

Methods

Setting and participants

The study was conducted at a US university located in a multi-ethnic city with a fast-developing Chinatown. The university offers a BA degree and a minor in Chinese Studies. All the courses are credit-bearing. The participants were 120 students (age median: 21), taking Chinese language

courses at the elementary, intermediate, and advanced levels. Participants were from six ethnic backgrounds. Almost half ($n = 56$) were multilinguals. Appendix 1 presents the participants' demographic information.

Among 120 participants, 27 students (14 males and 13 females, age median: 21) volunteered for interviews. They all majored or minored in Chinese Studies at the three proficiency levels. Twenty (74%) had studied Chinese in Chinese speaking countries for a period of one to twenty-four months. Nineteen (70%) were multilingual in English, Spanish, and/or Asian languages while taking Mandarin Chinese courses.

Instrument

The survey instrument consisted of three sections. The first section had 15 items on participants' demographic information. The second section was the motivation scale, consisting of 29 Likert items to measure variables including ideal L2 self, instrumentality-promotion, ought-to L2 self, anti-ought-to self, attitudes and experience in learning L2 Chinese, and intended effort. Most of the items were adopted from previous studies (Liu and Thompson 2018; Papi 2010; Taguchi, Magid, and Papi 2009; Xie 2014; Yashima, Nishida, and Mizumoto 2017). A few newly designed items were added. It was hoped that by including items from the previous studies and a few new items pertinent to learning Chinese in the USA, a more accurate understanding of the motivation for the target population would result.

The third section consisted of 7 items measuring the amount of time spent weekly on learning activities after-class. Motivation studies usually examine intended effort. The intended effort, however, may differ from the actual effort exerted (Papi 2010). A pilot survey was conducted with 36 students at two proficiency levels. Students were requested to list the types of after-class Chinese learning activities they frequently engaged in on a weekly basis. The high-frequency activities were identified and were clustered into three components as presented in Table 1.

In addition, semi-structured interviews were conducted. Interview questions were developed based on the research goals of this study. Although the questions were pre-planned, new issues were discussed as they arose during interviews. The interviews were intended to capture the internal patterns of thinking underlying the participant's motivation, and the external factors that shaped their motivation. The interview questions included these aspects: the motivational factors that shaped the choice of Chinese language, stories of overcoming difficulties in the learning process, motivational attributions for success or lack thereof in class, and the interaction between future self-guides and the learners' engagement and effort. All the interviews were recorded and transcribed. An inductive approach for the data coding and analysis was adopted. Themes that appeared prominent in the transcripts were identified. These themes related to learners' motivation in general and the L2 Motivational Self System in particular.

Procedure

The survey was administered by instructors of eight Chinese language classes during a regular class session in a spring semester. Students were informed that a survey would be conducted and answering the survey took approximately 15 min. The instructors then collected the questionnaires and

Table 1. After-class activity engagement.

Interpersonal communication	Chinese course-related work	Intercultural contact: Learning via Media
Speak Chinese with your instructors and classmates after-class	Do Chinese course related work	Conversing, reading, and writing messages in Chinese via social media
Speak Chinese with your Chinese friends	Do extra/unrequired course related work for the course	Listen to radio, podcasts, and audio/visual streams in Chinese
		View movies, TV, videos in Chinese

returned them to the researcher. Among 135 questionnaires distributed, 120 (88.9%) were completed. Interviews were conducted individually in a conversational manner in the researcher's office or via online virtual meetings one week after the questionnaire had been administered. Each interview lasted about 45 min.

Data analysis

There were three focuses in this study. First, it investigated the motivation constructs, including potentially diverse concepts of self (e.g. the anti-ought-to self) under the theoretical framework of the L2 Motivational Self System. Exploratory Factor Analysis (EFA) procedures were used to identify the motivational factors relevant to the learning context, in addition to the interviews, which further identified deeply rooted motivational thoughts and reflections. Second, it examined the associations of the factors via correlation analyses. Besides Pearson correlation coefficient, regression procedures were conducted to explore predictors for intended effort and learning attitudes. Third, it analyzed the interactions between motivation and learning experience in context. Themes that emerged in the interview data were analyzed with a focus on the types of motivation and self-regulatory strategies that sustained learning and further consolidated future self images in the learning process.

Results

Factor analysis to explore motivation constructs for L2 Chinese

Maximum likelihood EFA was conducted to address the first research question. The motivation items were loaded onto the factors with a value of .40. All twenty-nine motivation items loaded and first went through direct oblimin, and then orthogonal, varimax, and rotation procedures. The Kaiser-Meyer-Olkin (KMO) value was 0.83, indicating an adequate sample size. Bartlett's Test of Sphericity was significant, $X^2 = 1675.622$, $p < .001$, indicating inter-item correlations were large enough to suit EFA. Appendix 2 presents the results of factor loadings.

Six factors were extracted accounting for 56.50% of the total variance. The factor loadings confirmed the validity of the survey instrument. The six factors identified aligned with the theoretical proposition in this study. Table 2 displays descriptive statistics, Cronbach's internal coefficients, and the amount of the total variance each factor explained.

Factor 1 Intended effort via positive experience consists of 8 items (37, 38, 39, 19, 18, 28, 24, 36), referring to intended effort from positive learning attitude (*cf.* Yashima, Nishida, and Mizumoto 2017). Items include the intended effort: 'I am prepared to expend a lot of effort in learning Chinese', 'I would like to spend lots of time studying Chinese', 'If I had the opportunity to speak Chinese outside of class, I would do it as much as I can', 'If my teacher would give the class an optional assignment, I would certainly volunteer to do it' as well as attitudes derived from positive learning experience: 'I appreciate opportunities to communicate in Chinese with my classmates in class' and 'I find learning Chinese really interesting'. This factor, focusing on learning effort, reveals that the intended effort and positive learning experience are interdependent.

Table 2. Descriptive statistics, internal consistency, and variance explained.

Factor #	Motivation factors	Mean	SD	Cronbach's α	Total variance explained
1	Intended effort via positive experience	5.79	1.06	0.90	30.48%
2	Ideal self	5.28	1.34	0.83	7.72%
3	Instrumentality- promotion	5.43	1.39	0.87	5.53%
4	Ought-to self	3.06	1.39	0.76	5.97%
5	Classroom-related attitude	6.07	1.14	0.82	3.59%
6	Anti-ought-to self	5.10	1.34	0.61	3.22%

Factor 2 Ideal self consists of 5 items (21, 31, 26, 11, 15). The factor highlights language use for daily communication and the ideal self that regards multilingual competence as part of one's self-identity. Items include 'I can imagine myself living in Chinese-speaking areas using Chinese effectively to communicate with locals', 'I can imagine myself as someone who is able to speak Chinese', 'I can imagine myself speaking Chinese with international friends or colleagues', and 'I can imagine myself reading and writing emails in Chinese fluently'. These clear visions promote learners to fulfil their language goals.

Factor 3 Instrumentality-promotion has 5 items (30, 25, 35, 16, 20), concerning the imagined future self for international career and academic advancement. The factor reveals the aspiration to use the language to achieve goals, e.g. 'studying Chinese is important to me because with Chinese I can work globally', 'to achieve my career goal', 'to achieve my academic goal', and 'I can image myself as someone use Chinese in my work in the future'. Such desires identify learners with their ideal selves and future vision.

Factor 4 Ought-to self has 5 items (32, 22, 17, 12, 27) referring to accommodating external pressure from family members, friends, and society to avoid negative consequences. Perceived obligations versus intrinsic desire for one's future image distinguishes this factor from the ideal self. Items include 'If I fail to learn Chinese, I'll be letting people around me down', 'learning Chinese is necessary because people surrounding me expect me to do so', and 'to gain the approval of my peers/teachers/family/boss'.

Factor 5 Classroom-related attitude has 3 items (29, 14, 34) and is specifically related to the classroom, the immediate learning context with complex and dynamic characteristics: 'I like the atmosphere of my Chinese classes', 'I like the teaching style of my Chinese language teacher', and 'I find the textbooks and learning materials to be useful'.

Factor 6 Anti-ought-to self has 3 items (33, 23, 13). Its items deal with the unique and challenging nature of the task as commonly perceived, and the personal desire to take on the task: 'I am studying Chinese because it is something different or unique' and 'Learning Chinese builds up my self-confidence because Chinese is considered difficult to learn'. The results show that the anti-ought-to self does exist in the motivation construct of L2 Chinese context. Future investigation is needed in terms of the items that further conceptualise the anti-ought-to self.

Correlation and regression analyses

To address the second research question, correlation and regression analyses were conducted. Table 3 displays the results of the Pearson correlation coefficient of the six factors. Factor 1 *Intended effort via positive experience*, significantly correlates with all factors ($p \leq .01$, 2-tailed) except for *the ought-to self*. Factor 2, *the ideal L2 self*, significantly correlates with all factors and robustly with factor 1 ($r = .669$, $p \leq .01$, 2-tailed), indicating that the more learners are inspired by *the ideal L2 self*, the more

Table 3. Pearson correlations of motivation factors and after-class activities (2-tailed).

	Factor	Intended effort via positive experience	Ideal self	Instrumentality Promotion	Ought-to self	Classroom-related attitude	Anti-ought-to self
1.	Intended effort via positive experience	1.00	.669**	.546**	.034	.449**	.515**
2.	Ideal self		1.00	.691**	.206*	.306**	.333**
3.	Instrumentality promotion			1.00	.276**	.351**	.279**
4.	Ought-to self				1.00	−.030	.182*
5.	Classroom-related attitude					1.00	.364**
6.	Anti-ought-to self						1.00

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

likely they intend to exert effort and derived positive experience from learning. Factor 3, *Instrumentality-promotion* has the highest correlation with *the ideal L2 self* ($r = .691$, $p \leq .01$, 2-tailed), suggesting that *Instrumentality-promotion* may indeed be a subcomponent of *the ideal L2 self*. It should be noted that *the Anti-ought-to self* significantly correlates with all the factors, particularly with *Intended effort via positive experience* ($r = .515$, $p \leq .01$, 2-tailed).

In addition, the results of the Pearson correlation coefficient of the six factors and the three variables of after-class activities (1. interpersonal communication, 2. course-related effort, and 3. intercultural contact: learning via media, see Table 1) show that factor 2, *the ideal L2 self,* and factor 3, *Instrumentality-promotion*, significantly correlate with the three motivated behaviours. *The ideal L2 self's* correlations with interpersonal communication and course-related effort are: $r = .289$ and $r = .318$ respectively ($p \leq .01$, 2-tailed), whereas *Instrumentality-promotion's* correlations with course-related effort and intercultural contact are: $r = .247$ and $r = .258$ respectively ($p \leq .01$, 2-tailed). The results demonstrate that although both factors 2 and 3 promote learners to commit effort to course-related work after-class, factor 2 inspires learners more to communicate in Chinese interpersonally and factor 3 promotes learners to use various media for learning.

Multiple regression was conducted to determine the predictors for intended effort via positive experience. Five factors (L2 ideal self, instrumentality-promotion, ought-to self, classroom-related attitude, and anti-ought-to self) entered the procedure as independent variables with Intended effort via positive experience as the criterion. The motivation factors significantly accounted for 59.70% of the variance in Intended effort via positive experience: $F(5,114) = 33.71$, $p = .000$, $R^2 = .597$. Among the motivation factors, the L2 ideal self was the overall strongest predictor, followed by the anti-ought-to self, classroom-related learning attitude, and the ought-to self (Table 4: the model summary of the multiple regression and Table 5: multiple regression of Intended effort via positive experience). The results suggest that learners with future self-guides, particularly the ideal L2 self, the anti-ought-to self, and positive classroom-related experience, are likely to exert effort to be engaged in learning.

It should be noted that *the ought-to self* has a significantly negative, whereas the other three factors have a positive, predicting power on *Intended effort via positive experience* (Table 5). In other words, the more a learner feels the need to please his/her friends and family members and/or comply with external requirements or obligations, the less likely he/she is to exert effort in learning. The final model of predicting *intended effort via positive experience* (Y) by the five motivation variables is:

$$Y = 1.628(B) + .367(\text{Ideal Self}) + .233(\text{Anti-ought-to Self}) + .137(\text{Classroom experience})$$
$$+ (-.112)(\text{Ought-to Self}).$$

Interview data

The interview data address all three research questions and particularly the third question: the interactions between motivation, learning strategies, and context. The interview analysis resulted in three major types of motivation: the ideal L2 self, the anti-ought-to self, and motivated learning behaviour derived from positive learning interactions. The first is the image of the future self, the vision for *the ideal L2 self*, including *instrumentality-promotion*. The future self image projects participants' strong aspirations for Chinese competence in multilingual function and for instrumentality in career advancement. The second is the anti-ought-to L2 self. This motivation

Table 4. 5-predictor model summary and ANOVA: Multiple regression of intended effort.

Model	R	R^2	F	P
1	.772	.597	33.713	.000

Table 5. Multiple regression of Intended effort via positive experience.

Predictors	Unstandardized coefficients B	Standardised coefficients Beta β	T	P
Ideal Self	.367	.465	5.535	.000
Anti-ought-to self	.233	.296	4.431	.000
Ought-to self	−.112	−.148	−2.328	.020
Classroom related learning Experience	.137	.148	2.186	.031

represents the learner's personal choice to study Chinese despite the common beliefs such as 'learning Chinese is difficult for English speakers'. The third is the interaction between future self-guides and motivated behaviour with the former functioning as the self-regulatory mechanism to promote learning engagement. Learners, with future self-guides and self-regulated study habits, are able to overcome obstacles and situational adversities in their learning process. The excerpts quoted below are identified by participants' pseudonyms, followed by their proficiency levels and heritage status: Chinese heritage learner (CHL) or nonheritage learner (NHL).

The L2 ideal self: future self images

Imagery is an important part of the process of visualisation of a future self. Dörnyei (2009) summarised the conditions for the motivating capacity of the L2 ideal and ought-to selves, among which are the availability and vividness of a future self image: 'The more elaborate the possible self in terms of imaginative, visual, and other content elements, the more motivational power it is expected to have'. (19). The future images created by participants at all proficiency levels were clear and concrete, functioning as self-guides for their learning.

Future self images of multilingual functioning

One of the most distinctive future image types is the desire to fluently use the language in various settings and across a wide scope of topics, particularly in daily conversation and when travelling to Chinese-speaking countries. The interview data show that learners have strong desires to be multilingual, functioning in a sociocultural context. Mindy (Elem, CHL), a heritage learner, desired for 'every day like a kind of conversation, communicating with coworkers'. She expected that she would persist in using Chinese in her community: 'But even if I find a job without speaking Chinese, I would still say "yes", because I would be more involved in my community, so I will speak Chinese'. Mindy's future image occurred in the USA setting whereas Ellen (Elem., NHL) imagined revisiting China to communicate with Native Speakers (NSs), not just greetings but in-depth conversations:

> Excerpt 1
>
> I'm a strong believer, when you go to another country, you should try to speak that language instead of going and hoping they speak in English. So I think even if I go on vacation to China, I will go out and try to meet people and try to speak in Chinese. … I like Chinese people; I like to talk to them about what the life is like.

With the development of globalisation and multilingualism, Ellen's perspective as a multi-language user was shared by many. Being able to mingle with local NSs and to contribute to conversations when travelling abroad are desired future images, as further exemplified by Brittany (Interm., NHL):

> Excerpt 2
>
> I want to be able to be confident in a group of people, out to dinner with Chinese people and just be able to contribute to a conversation. … . So like ordering food, but also as soon as they see like I'm *waiguoren* [foreigner], they would talk to me and ask me like, 'how would you learn Chinese, how long have you been here? Why are you here?' So we have those kinds of conversations. The conversation just kind of flows into other topics.

The future self images from the participants at the advanced level seemed to target higher-level language skills. Participants were determined to improve their language to function as competent multilingual communicators. Todd's (Adv., NHL) and Brian's (Adv., NHL) future self images were closely related to their majors in economics and physics respectively. Todd said 'I would like to communicate in economic theories, … I would hope to be that fluent [in in-depth discussion]'. Brian wanted to be 'more professional' such as 'public speaking in formal settings to talk about relations between America and China, things like that'. Similarly, several advanced participants imagined that they would be talking about different cultural topics, philosophy, history, and politics of the two countries in conferences (Table 6 for details).

It is interesting to observe that many learners' future self images were related to their personal hobbies, the hobbies deeply rooted in their lives (Table 6). Another future self image that emerged in the data is *instrumentality-promotion* closely relating to their language proficiency.

Future self images of career advancement: instrumentality

Another distinctive theme is the career-related aspiration to obtain Chinese proficiency for the purpose of future career success. Instrumentality concerns the perceived usefulness of learning an additional language. Although participants clearly linked Chinese proficiency to their career trajectory, there seemed to be differences between those at the lower versus more advanced proficiency levels in terms of the instrumentality-prevention/promotion focus. Instrumentality-prevention was identified with participants at the lower proficiency level, since the focus was more on the utility of the language including the possible benefit for securing a job. Instrumentality-promotion was identified more with higher-level participants who enthusiastically sought to enhance their career development.

Motivated by instrumentality, participants not only had concrete goals, but also relevant strategies to pursue their goals. Sheldon (Elem., NHL) imagined his job 'for business interactions' here in Houston: 'talk[ing] to workers, or engineers that come from China. That's what motivates me, that's why I do Chinese every single day'. Alice (Elem., NHL) presented a similar scenario: 'I imagine myself going on business trips. I can see myself having a discussion in Chinese, … I feel like, if I practice enough and get more exposure to it, I think I can see myself at that level'. The future self images expressed by advanced participants seemed to be more concrete and in specific contexts. Learners may vary in their academic disciplines but share the future imagery that motivated them to engage in learning. Derek (Adv., NHL), a physics major and Chinese minor, articulated his imagined future professional self and his determination to continuously improve his Chinese:

Excerpt 3

Especially, since I am hoping to develop that collaboration with Chinese and American universities, I can anticipate actually having to converse with foreign physicists, especially Chinese, and communicating either through email, using written Chinese or over the phone, or with a voice chat online, for example, the face-to-face kind of thing. … I really do hope to try to foster this and get myself conversationally fluent by the time I graduate college. From there, still maintain and develop that language, so that I can go to conferences in China, or sabbatical as a professor going to China as well, so really maintaining that foundation and keeping with it, I think. Because it's easy to lose it, but I think maintaining that progress the whole way through is something I'll definitely be really interested in.

In summary, future self images represent participants' compelling aspirations for developing their L2 Chinese proficiency and reflect learners' ideal L2 self, e.g. the strong desire to be multilingual to function in Chinese. These future self images are powerful motivation embodying future self-guides. Table 6 is a summary of major future self imagery types from the interview data, sample topics for their multilingual functioning, and personal hobbies that are rooted in their desires for learning Chinese.

Table 6. Sample future self imagery types and topics in language use.

	Be Multilingual, functioning in real life	Use Chinese for international business & collaboration	Sample topics for multilingual function	Sample Hobbies related to Chinese
Examples	1 Conversation w/friends for socialisation 2 Conversation w/family members grandparents, relatives 3 Live in China to meet & talk to friends there 4 Talk in grocery stores & restaurants with NSs 5 Involve and help in the Chinese community 6 6 Talk about personal stories w/NSs & friends on streets	1 Use Chinese in international companies 2 Work abroad in Chinese speaking countries 3 On business trips 4 Translation at business firms 5 Work as ESL or CSL teachers 6 Collaborate w/Chinese colleagues 7 Do research in China 8 Study for graduate degrees in China 9 9 Pass a higher level HSK test	1 Politics 2 Philosophy 3 Economy 4 Physics 5 Environ-ment 6 Culture comparisons 7 Law 8 History 9 9 Religion	1 Sports 2 Kongfu 3 Martial arts 4 Chinese Paintings 5 Chinese Arts 6 Travelling 7 Meet people & make friends

The anti-ought-to L2 self

Chinese is a typologically different language from English (Li and Thompson 1981). What makes Chinese difficult for English-speakers includes its orthographic writing system and tonalities. However, it is the challenge that attracts many learners. Participants conveyed their desire to learn multiple languages and Chinese was their first choice, as Kelly (Elem, NHL) stated:

> Excerpt 4
>
> There were so many different languages to choose from, and so I thought about it and I would like to learn several languages. So one of my reasons [for choosing Chinese] was to pick a really hard one, making all the other languages easier after that.

Although it is unknown if proficiency in Chinese would make additional languages easier to learn, the decision of learning 'a really hard one', however, suggests that embracing challenge and the anti-ought-to L2 self appear to be internally connected. Such a learning attitude is shared by several participants. Among various languages offered at the university, they chose Chinese. Jean (Interm., NHL) started learning Chinese because she wanted to show her family members that she could 'do it'. Her mother was concerned and encouraged her to study Spanish, their heritage language. She thought that 'Spanish is great, but Chinese is better to me'. In the learning process, she teamed up with her classmates, helping each other with homework and tests in addition to speaking Chinese 'whenever it is possible'. She had just claimed her major in Chinese Studies before the interview. John (Interm., NHL) commented that 'learning Chinese is different. … I know I really like how the Chinese language sounds to me'. As a tonal language, Chinese does sound different and difficult. Nevertheless, it is the vision for 'a different language', that draws learners' attention and provides them with genuine appreciation. The uniqueness of the language and the challenge of learning it translate into intrinsic motivation that arouses learner's curiosity (Comanaru and Noels 2009; Wen 2011, 2013; Wen and Piao 2020). It is not a surprise that this intrinsic feature fosters their anti-ought-to selves to start and continue to learn Chinese.

Community opinion or external obligations can prevail; however, learner's internal needs and desires are deeply rooted in one's own value perspectives, which enhance the anti-ought-to L2 self. Several participants had practiced martial arts or other Chinese culture-related hobbies (Table 6 for 'hobbies') before learning Chinese. Their experiences helped them develop the belief that learning Chinese is 'something worthwhile doing' (Brian, NHL) and served as future self-

guides in their vigorous training. When Brian (Adv., NHL) was young, his parents enrolled him in various extracurricular sports. But he chose Chinese martial arts and took Chinese courses when entering university. Don (Elem., NHL) and Ellen (Elem., NHL) both went to China with their school/community martial arts groups. Their experience in China had an extensive personal impact. They started to learn Chinese once entering college and imagined being able to communicate with Chinese people one day back in China.

In the USA, multiculturalism and diversity have been widely recognised. These concepts, however, may not be immediately accepted by individual families. Aspirations for competence in a different language to bring multicultural perspectives to the personal environment are a powerful motivator. Jean (Interm., NHL) considered her family to 'lack respect', whereas 'Chinese culture emphasises value for family harmony'. She took Chinese courses seeking to create mutual respect in her family and developed a hobby in traditional Chinese painting. After Todd (Adv., NHL) noticed the absence of different cultures in his family, he started eating Chinese food and seeing films from Asian theatres. He wanted to 'find the missing piece in life' as he commented:

> Excerpt 6
>
> When I was in high school, my mother was never quite fond of anything dealing with East Asia, … . Whatever you don't like the most, you'll find the most of in your house. haha … . I mean my major is economics, but I wanted to learn about the language itself, and so I just continue doing that [taking Chinese courses].

In summary, the anti-ought-to L2 self represents the individual desires of searching for what is missing and embracing what is challenging, as well as what is valuable and unique based on one's personal experience regardless of external opinions. These characteristics contribute to a type of future self imagery, leading to a sense of satisfaction and intrinsic enjoyment of learning.

Interactions between motivation and learning experience: motivated behaviour

When the possible self is plausible with future self-guides, a learner is likely to reduce the discrepancy between the current self and the possible self (Higgins 1987). Participants specified a wide range of strategies including self-regulated learning routines and self-assessments. Common features of their motivated behaviour encompass working hard, monitoring one's progress, and constantly readjusting one's focus for learning goals. Molly (Interm., NHL) described her basic study plan as 'working hard':

> Excerpt 7
>
> I can imagine myself like buying things in Chinese, or bargaining for prices and stuff like that, and also just talking with whoever I need to … I think, with continuing hard work, I will be able to meet my goals. … . I need to study hard because that's what I can do. I need to practice Chinese inside and outside of the class.

In addition to 'hours of hard work', many were aware of their learning needs by constantly self-assessing their learning to develop concrete strategies to overcome difficulties. Some laid their focus on vocabulary and language styles because, as Todd (Adv., NHL) stated, 'the very formalised and standardised Chinese [learned] within Chinese class' is important but 'I need to understand and speak slang'. Others detected that listening comprehension was their weakness and thus listened to various podcasts to improve their listening skills. Future self-guides not only promoted their interaction with the learning environment but also their reflection on their own learning styles. Jerry (Interm., NHL) was more an auditory learner who regularly recorded classes. He reviewed his schoolwork by listening to what he recorded when driving to school every day: 'to keep it going better, keep it in my head better'. Ellen (Elem., NHL) was visual. She commented her cognitively motivated process in learning characters as follows:

Excerpt 8

I think I'm visual, … because *Hanzi* [Chinese characters] is just like little pictures. I remember them. … Copy the first two [times] from looking at the *Hanzi*, and then I would look at the Pinyin and write in *Hanzi* to make sure I had memorized the characters. But now, the final time I copy, I look at the English, and I try to remember the translation and translate the dialogue. That seems to help, too, make you think rather than just copying the words.

Motivation, as discussed above, is not only an affective but also a cognitive factor in the learning process. With procedural strategies reinforced by positive experience, learners are able to play an agent role in learning, and positively interact with an array of learning variables within themselves in the context. The data demonstrate that positive interactions strengthen motivation and encourage participants to react to challenges and contextual adversities.

Discussion

This study has explored all three key aspects of the L2 Motivational Self System and a closely related factor, the anti-ought-to L2 self. Both quantitative and qualitative data yielded a wealth of information about multiple motivation components that participants perceived as important to their learning. The results demonstrate that the ideal L2 self significantly correlates with all factors ($p \leq .01$, 2-tailed) except for the ought-to L2 self. The ideal L2 self seems to be the anchor to which several components are connected. It manifests two major components (1) the aspiration for Chinese competence and appreciation of Chinese culture, and (2) instrumentality-promotion that enhances a future career in this fast-developing global market. Participants' imagined future selves are deeply rooted in their personal experience and socio-cultural background, and strengthened throughout the learning process. Learners' long-term cultural practices (e.g. martial arts, visual and performing arts, Chinese media) and the different cultural values which may be missing in their personal environment provoke their interest in Chinese language, a tool to accomplish self-identity and self-fulfillment. In terms of instrumentality-promotion, learners' knowledge and experience with China's rapid economic development and its political role arouse their future self-images of being fluent in the language for their career advancement. The findings of this study, once again, confirm that instrumentality-promotion is significant in the current context. Participants shared a desire for the openness of global citizenship and multilingualism, as well as personally perceived opportunities for international business.

The anti-ought-to self is a significant factor with its central notion, 'I' versus 'other', embraced by participants. Participants' active agent role, in choosing a difficult language and sustaining learning regardless of other's expectations, reflects the concept of the anti-ought-to self. Their passion for seeking the culture that is vital but absent embodies the anti-ought-to self. They are intrinsically motivated and clearly aware that Chinese language is unique and learning it is a daunting task. The interview data further show that their needs for acquiring the language and understanding the culture are generated in a multicultural context where they choose what is personally appealing and downplay what is obligated due to external opinions.

Learning experiences and learning context can positively or negatively impact learning attitudes and strategies, which in turn strengthen or weaken the vision and motivation. Inspired by future L2 self images and empowered with future self-guides, learners are able to construct their positive learning experience derived from interactions. The interview data demonstrate that many participants constantly conduct self-assessment, reflect on their learning progress, readjust short term goals, and reallocate their effort. Such an interactive process not only strengthens their sustained vision and other motivation including classroom-related attitude and intended effort via positive experience, but also encourages them to develop their procedural strategies, and consequently, sustain learning.

Although the positive interaction is ultimately constructed by learners, instruction can critically contribute to the process. As factor 5, *classroom-related attitude,* demonstrate, learners prefer a certain 'class learning atmosphere', 'teaching style', and 'textbooks and learning materials'. They appreciate 'opportunities to communicate in Chinese with [their] classmates in class' and 'find learning Chinese really interesting'. It is the instructor who develops learning materials, constructs an effective teaching style, and promotes a classroom atmosphere that encourages students to communicate. It is vital for L2 instructors to accommodate learning styles and needs, and effectively facilitate learners in developing a sense of accomplishment from learning.

Conclusion

This study investigated the role of learners: how they generated motivation and interacted with the environment to continue learning. Through a mixed-methods design, the study captured interactions between motivation, learning environment, and learning experience. The study revealed six motivation factors, of which the *ideal L2 self* was the most powerful predictor for *Intended effort via positive experience,* and significantly correlated with the three components of after-class activity engagement. *The ideal L2 self* was an anchor and significantly correlated to motivation factors, including *instrumentality-promotion, classroom-related attitude*, and *anti-ought-to self. Instrumentality-promotion,* identified as a subcomponent of the ideal self, is robust in the L2 Chinese context. It significantly correlated with all motivation factors including after-class activity engagements, similar to the *ideal L2 self.* This finding is important particularly because instrumentality has features of both the ideal and the ought-to selves in L2 Chinese motivation studies (e.g. Campbell and Storch 2011; for a recent review, Wen 2018). Using instrumentality-promotion/prevention as the tool has clarified the issue. Furthermore, the study not only validated the *anti-ought-to self* factor in the L2 Chinese context but also enlarged the scope of the L2 Motivational Self System. The *anti-ought-to self* played a significant role in predicting intended learning effort. It was intrinsic by nature, highlighting the learner's active agent role. Last but not least, interactions between motivation and learning context promoted learners to continuously construct their learning experience. Positive interaction and experience strengthened motivation and inspired participants to adopt self-regulatory strategies and accompanying procedural knowledge to react to challenges in their environment.

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Appendix

Appendix 1

Table A1. Participants' demographic information ($n = 120$).

Information	Specifications	Number			
Gender	Male	56			
	Female	61			
	Unspecified	3			
Proficiency levels	Elementary		59		
	Intermediate		31		
	Advanced		30		
Ethnic backgrounds	African American			11	
	Asian American & Asian			45	
	Caucasian			33	
	Latin American			29	
	Others			2	
Major and minor	Chinese studies major				22
	Chinese studies minor				31
Previous learning Chinese	High school					31
	Chinese school					17

Appendix 2

Table A2. Results of factor loading.

Items	Factor 1 loading	2	3	4	5	6
Factor 1: Intended effort via positive experience						
37	.809					
38	.732					
39	.624					
18	.609					
19	.606					
28	.550					
36	.542					
24	.482					
Factor 2: Ideal self						
21		.870				
31		.688				
26		.532				
11		.515				
15		.502				

(*Continued*)

Table A2. Continued.

Items	Factor 1 loading	2	3	4	5	6
Factor 3: Instrumentality- promotion						
30			.778			
25			.704			
35			.692			
16			.537			
20			.471			
Factor 4: Ought-to self						
32				.754		
22				.655		
17				.644		
12				.580		
27				.569		
Factor 5: Classroom-related attitude						
29					.872	
14					.779	
34					.441	
Factor 6: Anti-ought-to self						
23						.837
33						.443
13						.440