

Expressing Necessity in Chinese: A Pilot Study

Shu-Yi Eagle

Abstract The purpose of the study is to examine how learners of Chinese as a foreign language use modals to express necessity, in hopes of providing current Chinese language educators with empirical results on necessity modals. There were two groups of participants in the study, 17 learners of Chinese as a foreign language (CFL) from a State University in the United States and 28 native Chinese speakers (NC) from a private university in Taiwan. Participants from both groups were required to complete a questionnaire of two sections that were designed to obtain participants' demographic information and knowledge of necessity modals. While the main examination lays on the responses of CFL learners, the NC group's response works as a reference list that provides valuable insight of necessity modal usage. The results showed that the CFL group generated more epistemic necessity than the NC group, specifically 應該 *yīnggāi* 'should or ought to', while the NC group produced more deontic necessity; travel experience to Chinese-speaking countries does not necessarily have influence on the acquisition of necessity modals; and the amount of time the CFL participants spent on learning Chinese does not show much influence on the usage of deontic necessities, but it does affect usage of 必須 *bìxū* 'have to' and 得 *děi* 'must.'

1 Introduction

Necessity modals are the narrow domain of modality. Modality is a semantic category that is an important component of human languages. There are a number of semantic criteria proposed for the definition of modality and the widely accepted definition is given by Lyons (1977), who refers to modality as speaker's "opinion or attitude towards the proposition that the sentence expresses or the situation that the proposition describes" (p. 452). He talks about the two domains of modality. Epistemic modality is concerned with the possibility or necessity of the truth of a proposition, thus related to the speaker's knowledge and belief, whereas deontic

S.-Y. Eagle (✉)

Department of Educational Theory and Practice, University at Albany, State University of New York, 1206 Tesla Dr., Colorado Springs, CO 80909, USA
e-mail: sliao@albany.edu

modality has to do with the possibility or necessity of acts performed by morally responsible agents, which is involved with obligation or permission.

Palmer (1986), on the other hand, draws attention to the subjective nature of modality and defines modality as “the grammaticalization of speakers’ (subjective) attitudes and opinions” (p. 16). In addition to epistemic and deontic modalities, he believes that evaluative modality belong to deontic modality because it expresses the speaker’s attitude rather than his/her commitment to the truth of a proposition.

In Mandarin Chinese, researchers have distributed modality into various groups (Hsieh 2003, 2005, 2006a, b; Li 2004; Li and Thompson 1983; Lin 2012; Tsee 1985; Wang 1982; Zhu 2005a) but there is no one unified category in the modality system, let alone necessity modals. Before diving into the realm of Chinese necessity modals, the categorization of Chinese modality has to be clarified. Hsieh (2005) divides Chinese modalities into four types: epistemic, deontic, dynamic and evaluative. When using epistemic expressions, it is the speaker who gives the opinion or attitude that is related the speaker’s judgmental system. The following examples show that the modals, 可能 *kěnéng* ‘may’ and 肯定 *kěndìng* ‘to be certain; to be sure’, do not only convey the type of opinion or attitude the speaker puts across, but also imply that such opinion or attitude is held by the speaker of the utterance (Hsieh 2005).

- (1) 他可能離開了。(Hsieh 2006a: 7)
Tā kěnéng líkāi le.
‘He may have left.’
- (2) 我肯定舞獅組是我最佳的選擇。(Hsieh 2006b: 55)
Wǒ kěndìng wǔ shī zǔ shì wǒ zuì jiā de xuǎnzé.
‘I am sure that the lion group is the best choice.’

Deontic modality, on the other hand, is the speaker’s source of opinion or attitude or the opinion or attitude related to permission, such as 應該 *yīnggāi* ‘should’, 務必 *wùbì* ‘must’ and 允許 *yǔnxǔ* ‘allow’.

- (3) 他應該離開。(Hsieh 2006a: 7)
Tā yīnggāi líkāi.
‘He should leave.’
- (4) 他務必離開。(Hsieh 2006a: 7)
Tā wùbì líkāi.
‘He must leave.’

Dynamic modality (e.g. 會 *huì* ‘can; know how to’, 想 *xiǎng* ‘would like’, 希望 *xīwàng* ‘hope’) is used to describe a kind of state (ability) or opinion or attitude (volition).

- (5) 他會跑步。
Tā huì pǎobù.
 ‘He can run.’ (ability)
- (6) 他想跑步。
Tā xiǎng pǎobù.
 ‘He would like to run.’ (volition)

Last, evaluative modal expression concerns the speaker’s evaluation towards a known fact, for example, 難怪 *nánguài* ‘no wonder’, 果然 *guǒrán* ‘just as expected’, and 幸虧 *xìngkuī* ‘fortunately’.

- (7) 難怪他離開了。
Nánguài tā líkāi le.
 ‘No wonder he left.’
- (8) 他果然離開了。
Tā guǒrán líkāi le.
 ‘He left just as expected.’

Necessity modals, or necessary modality as Eifring (1993) refers, are under the main types of modality and are usually treated as accessories without much attention and investigation. Directed by Palmer’s categorization of modality, Zhu (2005a) identifies 一定 *yídìng* ‘must’ as epistemic necessity and 必須 *bìxū* ‘have to’ as both deontic and dynamic necessity due to its sentence orientation. Wang (1982) categorizes modal auxiliaries into three types: possibility, necessity, and willingness, whereas necessity includes expressions that convey responsibility and speculation such as 應該 *yīnggāi*, 該 *gāi* ‘should, ought to’, 應 *yīng* ‘should, ought to’, 應當 *yīngdāng* ‘should, ought to’, 得 *děi* ‘must, have got to’, and 要 *yào* ‘must’.

On the other hand, Tiee (1985) explicitly labels necessity modals. Epistemic necessity, including 該 *gāi*, 應該 *yīnggāi*, and 應當 *yīngdāng* ‘should or ought to’, can be paraphrased as “it ought to be the case that...”; for example,

- (9) 他應該給你錢。(Tiee 1985: 91)
Tā yīnggāi gěi nǐ qián.
 ‘He ought to give you money.’

Deontic necessity modals refer to 要 *yào* ‘must’, 必須 *bìxū* ‘have to’, 必得 *bìděi* ‘have to’, 需要 *xūyào* ‘must, need, have to or need to’ and 得 *děi* ‘must, have got to’; while dynamic necessity modals include 必得 *bìděi* and 得 *děi* ‘must.’ According to Tiee (1985), both deontic and dynamic necessity modals can be translated into “It is necessary that...”

- (10) 父母要管教他們的孩子。 (Tiee 1985: 93)
Fùmǔ yào guǎnjiào tāmen de hái zi.
 ‘Parents must discipline their children.’
- (11) 你必須現在就回家。 (Tiee 1985: 93)
Nǐ bìxū xiànzài jiù huí jiā.
 ‘You have to go home right now.’

He further clarifies that the differences between 必得 *bìdēi* and 得 *dēi* ‘must’ in deontic necessity and dynamic necessity are that the former is usually discourse oriented and the latter is subject oriented.

2 Literature Review

There has been research on the Chinese linguistics (Hsieh 2005, 2006a, b; Li 2004; Li and Thompson 1983; Lin 2012; Tiee 1985; Wang 1982; Zhu 2005a) but very few particularly focus on the modality acquisition of learners of Chinese as a foreign language (CFL) not to mention the acquisition and application of necessity modals. Wang (1982) was the first to analyze the characteristics of Chinese modal auxiliaries on the basis of the errors of CFL learners. She found that the polysemous nature of Chinese modal auxiliaries, usage frequency, syntactic structure, and different word order in English and Chinese modality are the primary problems for learners. Xu (2008) later confirmed Wang’s (1982) findings and identified the most common mistakes in Chinese modal adverbs that CFL learners make: The multi-meaning and multi-usage of adverbs, learner avoidance, L1 influence, and the gap between teaching and research. He further proposed several solutions to improve Chinese language teaching and research such as the analyses of usage frequency, extensive research on adverb acquisition, contrasts between learners’ L1 and Chinese, and situational teaching. The issues introduced by the studies invaluablely provide the current study with the background knowledge when exploring CFL learners’ modal acquisition.

Empirical studies conducted by He (2011) and Xiong (2013) conclude that that language competence lies in the understanding of the interactional contingencies of language use; and that acquisition of modal auxiliaries takes time for language learners to gain the control of interlanguage. The studies suggest that the emphasis of modal acquisition be on CFL learners’ comprehension of the polysemous nature of Chinese modal auxiliaries, as well as their ability to use the modals in real-life situations.

Yang and Dong (2013) conducted a longitudinal case study investigating early acquisition of Chinese dynamic modality (能 *néng* ‘can’, 要 *yào* ‘want’, 會 *huì* ‘can; know how to’, 可以 *kěyǐ* ‘able to; may’, 肯 *kěn* ‘willing’, and 敢 *gǎn* ‘dare’) of a one-year-old child. They found that dynamic modals are acquired based on the

amount of input received: the first acquired modal was 會 *huì*, followed by 敢 *gǎn*, 能 *néng*, 要 *yào*, 可以 *kěyǐ*, and 肯 *kěn*.

These empirical findings are great contributions to the field of Chinese modal acquisition in various ways. They do not only illuminate the importance of Chinese modality but also point out the variables in Chinese modal acquisition that could affect the result of the current study. Though valuable, the studies are not enough for the field. Since modality is one of the major components in Chinese language learning and necessity modals play a very important role in the grammar of Chinese (Eifring 1993), more thorough and detailed research on modality acquisition are critically needed.

This study attempts to shed light on how CFL learners express necessity with Chinese modals. In a field with very limited research materials available, this study is looking to reveal usage of necessity modals from CFL learners and Native Chinese speakers (NC) in hopes of providing current Chinese language teachers with empirical results. The research questions are: How does the use of necessity from native Chinese speakers relate to the use of necessity from CFL learners? Where do CFL learners need improvement? How can the results of the study be applied to CFL learning?

3 Methodology

3.1 Participants

Two groups of participants were included in the study: learners of Chinese as foreign language (CFL) and native speakers of Chinese (NC). 17 CFL participants, from the advanced Chinese class with an average age of 21.7, were drawn from a State University with a population of approximately 17,000 students, 74% undergraduates and 26% graduates, in northeastern United States. Among the participants, ten reported their first language as English, two Cantonese, one Korean, one Vietnamese, and three heritage Chinese learners. The average time of learning the Chinese language is 3.4 years, and 2.7 years excluding heritage Chinese and Cantonese learners. The majority of participants had traveled to China from 1 to 11 months, while five of them have never been to China before. The Chinese class met twice a week, an hour each time. The instructor was a CFL user with a native-like language fluency who used the targeted language most of the time in class.

It goes without saying that this is a diverse group of participants. Although I am aware of the fact that the heterogeneous nature could affect the research results to some degree, I decided to retain the data for the reason that the class structure is very similar to the majority of CFL classrooms in the U.S. nowadays. I understand that the ideal study is to have learners with the same background in order for a valid and reliable result but it is almost impossible in this multicultural society. The reality is that there are always some non-native English learners and Chinese heritage

learners in the CFL classroom. Including learners with various backgrounds in the current study can truly reflect this real-world phenomenon as well as highlight the differences among CFL learners.

Finally, the NC group, with a mean age of 20, consisted of 28 native Chinese speakers who were recruited from a private university with a total of 11,000 students in the northwest Taiwan. Four were from China, one was from Malaysia, and the rest was from Taiwan.

3.2 Procedure

CFL and NC participants were required to complete a questionnaire that contained two sections: demographic information and knowledge of using modal expressions. The first section is for the participants to provide contextual information that is conducive to inform interpretations, whereas the linguistic section includes two segments: six topic sentences and a short essay. In the first part, the participants read the topic sentences and provided a relevant reaction. For example, in the statement 小明找不到他的皮夾 ‘*Xiaoming* couldn’t find his wallet’, participants were expected to give responses such as a solution, 他應該到處找找 ‘He should look around’ or a speculation, 皮夾一定被偷了 ‘His wallet must be stolen.’ In the second section, the participants were asked to write a short essay with approximately six to ten sentences describing their typical day. Questions such as “what do you need to do before you go to school” and “what do you do on the weekends” were given for response solicitation.

Before CFL participants completed the questionnaire, I had regularly joined the CFL class for approximately two months. During my visits, I focused on observing the class and building a rapport with the participants. I constantly interacted with participants by helping with their questions about Chinese and introducing Chinese songs to the class. In the end, CFL participants were more used to my presence in the classroom and were more comfortable to ask questions. Both CFL and NC participants received no specific instructions of using necessity modals in their responses and were particularly informed not to follow the sample answers.

4 Results

I examined questionnaire responses from both groups line by line based on Tiee’s (1985) categorization of necessity modals (see Table 1).

After the first examination, I added four additional necessity modals to the list due to the fact that the meanings of modality are determined by the speaker through context (Fan 2006). 應 *yīng* ‘should; ought to’ joins the epistemic necessity because of its similar meaning and usage to 應該 *yīnggāi* ‘should; ought to’ (Lü 1999). 一定會 *yídìng huì* ‘must will be’, 一定要 *yídìng yào* ‘must’, and 最好 *zuìhǎo* ‘had better’ are included in the deontic necessity. As one of the multiple readings of 一定 *yídìng*

Table 1 Tsee (1985) necessity modals

Epistemic necessity	Deontic necessity	Dynamic necessity
應該 <i>yīnggāi</i>	要 <i>yào</i>	得 <i>děi</i>
應當 <i>yīngdāng</i>	必須 <i>bìxū</i>	必得 <i>bìdēi</i>
該 <i>gāi</i>	需要 <i>xūyào</i>	
^a 應 <i>yīng</i>	得 <i>děi</i>	
	^a 一定會 <i>yídìng huì</i>	
	^a 一定要 <i>yídìng yào</i>	
	^a 最好 <i>zuìhǎo</i>	

Note:^aindicates add-on modals

‘must’ is obligation, 一定 *yídìng* shows determination of the speaker himself or the receiver (Li 2005). For example, the following sentence (12) produced by a CFL participant demonstrated that the speaker lays an obligation upon the subject.

- (12) 在週末一定會做些什麼。
Zài zhōumò yīdìng huì zuò xiē shénme.
 ‘Must will do something on the weekends.’

On the other hand, 最好 *zuìhǎo* ‘had better’ can be used as either laying an obligation or making a promise or threat as the sample sentence (13) shows.

- (13) 他最好別給他們打電話。
Tā zuìhǎo bié gěi tāmen dǎ diànhuà.
 ‘He had better not to call them.’

Finally, in order to secure the interrater reliability, the responses were carefully reviewed by another native Chinese speaker, who was a former middle school Chinese teacher for 5 years in Taiwan before pursuing her master’s degree in the U.S.

The final categorization of necessity modals used by each group was then calculated by a one-way analysis of variance with modality types as the dependent variable and language groups (CFL and NC) as the independent variable. Table 2 indicates that there was a significant difference between the CFL and NC groups using epistemic modality [F (1, 43) = 10.32, *p* < .05] and 應該 *yīnggāi* ‘should; ought to’ was used more by the CFL group [F (1, 43) = 8.07, *p* < .05]. The NC group produced more deontic necessity modals [F (1,43) = 3.76, *p* < .10] and used more 一定會 *yídìng huì* ‘must will be’ [F (1,43) = 2.88, *p* < .10].

Pearson’s correlation coefficient was computed to assess the relationships among the time spent on learning Chinese, travel experience to China and usage of modality (Table 3). Due to the small sample size, the majority results appeared to be non-statistically significant but they are still worth discussing. The time participants spent on learning Chinese is positively correlated with the usage of epistemic necessity (*r* = .22), specifically 應該 *yīnggāi* (*r* = .27), and a deontic necessity, 必須 *bìxū*

Table 2 Descriptive statistics

	CFL		NC	
	M	SD	M	SD
Epistemic necessities	0.88**	0.70	0.32	0.48
應該 <i>yīnggāi</i>	2.24**	2.28	0.71	1.33
應當 <i>yīngdāng</i>	–	–	–	–
該 <i>gāi</i>	–	–	–	–
應 <i>yīng</i>	0.06	0.24	–	–
Deontic necessities	1.00	1.87	2.61*	3.08
要 <i>yào</i>	0.47	0.72	0.43	0.57
必須 <i>bìxū</i>	0.06	0.24	–	–
需要 <i>xūyào</i>	–	–	0.07	0.26
得 <i>děi</i>	0.06	0.24	0.04	0.19
一定會 <i>yídìng huì</i>	0.06	0.24	0.39*	0.79
一定要 <i>yídìng yào</i>	–	–	0.14	0.45
最好 <i>zuìhǎo</i>	0.06	0.24	–	–

Note. * $p < .10$. ** $p < .05$

Table 3 Correlations between years of learning, travel experience, and use of modals

	Years of learning	Travel experience
Epistemic necessities	.22	.05
應該 <i>yīnggāi</i>	.27	-.15
應 <i>yīng</i>	.08	-.07
Deontic necessities	-.05	-.10
要 <i>yào</i>	.09	.09
必須 <i>bìxū</i>	.49*	.09
得 <i>děi</i>	-.32	.07
一定會 <i>yídìng huì</i>	.08	-.22
最好 <i>zuìhǎo</i>	.08	-.22

Note. * $p < .05$

($r = .49$). The travel experience to China negatively correlated with the usage of 應該 *yīnggāi* ($r = -.15$), 一定會 *yídìng huì* ($r = -.22$), and 最好 *zuìhǎo* ($r = -.22$). It is important to note that there is a negative correlation between the usage of epistemic and deontic necessities ($r = -.29$), implying that those who use more epistemic necessities use less deontic necessities and vice versa.

In the first questionnaire section where situations were provided for the participants to create relevant responses, a total of 45 necessity modals were generated by CFL participants including 38 epistemic necessity (應該 *yīnggāi* ‘should; ought to’ and 應 *yīng* ‘should; ought to’) and seven deontic necessity (要 *yào* ‘must’, 必須 *bìxū* ‘have to’, 得 *děi* ‘must; have got to’, and 最好 *zuìhǎo* ‘had better’). In the essay section, five necessity modal expressions were produced: one epistemic necessity (應該 *yīnggāi* ‘should; ought to’) and four deontic necessity (要 *yào* ‘must’ and 一定會 *yídìng huì* ‘must will be’).

Overall, 應該 *yīnggāi* is the primarily used epistemic necessity with a 97 percent of usage. For example, in the statement, 老李很窮 *Lǎo lǐ hěn qióng*. ‘Old Li is poor’, a majority of CFL participants use 應該 *yīnggāi* to show opinions or attitude, such as.

- (14) 他應該找工作。
Tā yīnggāi zhǎo gōngzuò.
 ‘He should look for a job.’
- (15) 我應該給他一個蘋果。
Wǒ yīnggāi gě tā yí gè píngguǒ.
 ‘I should give him an apple.’

As far as deontic necessity is concerned, 要 *yào* ‘must’ is the most popular among CFL participants.

- (16) 我要請他跟我吃午飯。
Wǒ yào qǐng tā gēn wǒ chī wǔfàn.
 ‘I must buy her lunch.’
- (17) 他要送給他太太。
Tā yào sòng gě tā tàitài.
 ‘He wants to give it to his wife. / He must give it to his wife.’

There are no dynamic necessity modal expressions being produced by the CFL learners. Table 4 presents the frequency of use of each necessity modals.

The NC group generated a total of 33 necessity modal expressions in the sentence structures, including 20 epistemic necessity (應該 *yīnggāi* ‘should; ought to’)

Table 4 Overall usage of necessity modal expressions by CFL and NC participants

	CFL	NC
Epistemic		
應該 <i>yīnggāi</i>	97%	100%
應當 <i>yīngdāng</i>	0	0
該 <i>gāi</i>	0	0
應 <i>yīng</i>	3%	0
Total	100%	100%
Deontic		
要 <i>yào</i>	63%	41%
必須 <i>bìxū</i>	9%	0
需要 <i>xūyào</i>	0	7%
得 <i>děi</i>	9%	3%
一定會 <i>yíding huì</i>	9%	34%
一定要 <i>yíding yào</i>	0	14%
最好 <i>zuìhǎo</i>	9%	0
Total	100%	100%

and 14 deontic necessity (要 *yào* ‘must’, 需要 *xūyào* ‘need; need to’, and 一定會 *yídìng huì* ‘must will be’). 16 deontic necessity modals (要 *yào* ‘must’, 得 *děi* ‘must; have got to’, 一定會 *yídìng huì* ‘must will be’, and 一定要 *yídìng yào* ‘must’) were generated in the essay. Similar to the CFL participants’ responses, 應該 *yīnggāi* ‘should; ought to’ and 要 *yào* ‘must’ were used more often than other necessity modals. Note that the NC participants did not use any epistemic necessity in the second section of the questionnaire.

5 Discussion

It is not surprising to see the different usage of necessity modals from the CFL and NC groups; however, both groups show a great similarity in the use of 應該 *yīnggāi* ‘should; ought to’ in the first section of the questionnaire when providing responses. This finding corresponds with Wang (1982) that 應該 *yīnggāi* is one of the most frequently used Chinese modals. Two conclusions can be made based on the extensive use of 應該 *yīnggāi*. First, the CFL participants’ strong preference for 應該 *yīnggāi* clearly indicates their familiarity of the expression. Second, the major production of 應該 *yīnggāi* from the NC group has proved its popularity among the native Chinese speakers. The CFL participants must have received a great amount of input of 應該 *yīnggāi* from teachers and textbooks, as well as any resources from outside of the classroom so that they are able to put 應該 *yīnggāi* into use. It is logical to conclude that the more CFL learners are exposed to the Chinese language, the higher possibility of receiving 應該 *yīnggāi*, the more familiar and comfortable they are with the usage; as a result, the more likely learners are able to apply the expression. However, another possible explanation is that the CFL participants merely copied 應該 *yīnggāi* from the sample sentence due to their limited language proficiency.

On the other hand, the NC participants produced more deontic necessity, especially 一定會 *yídìng huì*. In fact, the NC participants expectedly have demonstrated their capability of adjusting the use of necessity modals to different situations. In the first section of the questionnaire, they produced a similar number of epistemic and deontic necessities to either give the opinion or attitude that is related to their judgmental system (epistemic) or to permission, obligation, and threat (deontic). In the second section where participants received no sample sentences to describe their typical day, the NC participants tended to use deontic necessity, especially 要 *yào* ‘must’ and 一定會 *yídìng huì*, to show their determination or to lay an obligation upon the subject. In contrast with the NC participants, the CFL participants did not produce as many deontic necessity modals as their NC counterparts. The CFL participants’ scant use of deontic necessity in the second section could be an indication of their unfamiliarity of the usage and their limited language ability as well as a sign of their need of necessity modal instruction. The different usage of necessity modals between the CFL and NC groups clearly suggest the NC participants’ capability of manipulating the Chinese language instead of limiting to certain types of usage. That is to say, native Chinese speakers are able to express with different words in

various ways, while CFL learners' language abilities are confined to factors such as familiarity, proficiency, and experience with the language.

Despite the differences between the CFL and NC participants, there is an interesting connection between the NC participants and Chinese heritage learners. Similar to the NC participants, Chinese heritage learners only produced one type of epistemic necessity, 應該 *yīnggāi*, and used 一定會 *yídìng huì* in the essay section of the questionnaire when no other CFL learners used the expression. The identical usage must not be a pure coincidence. As a matter of fact, Chinese heritage learners' unique language and cultural backgrounds could have an important influence on the way they use the Chinese language, a way that is much closer to that of the NC speakers than CFL learners. However, no inferential conclusion can accurately be made due to the small sample size of Chinese heritage learners in this study. Future research is strongly needed to explore the field.

As far as the relationships among the time spent on learning Chinese, travel experience to China and usage of modality are concerned, the results indicate that participants' travel experience to Chinese-speaking countries does not necessarily have influence on the usage of epistemic ($r = .05$) and deontic necessity modals ($r = -.10$). Moreover, the amount of time the CFL participants spent on learning Chinese does not show much influence on the usage of deontic necessity ($r = -.05$), but it somehow affects the usage of 必須 *bìxū* 'have to' ($r = .49$) and 得 *děi* 'must; have got to' ($r = -.32$), positively and negatively. In other words, those who learn Chinese for a longer period of time use more 必須 *bìxū* than those who do not learn the language as long. According to Zhu (2005b), 必須 *bìxū* had been used for over a thousand years in the history of Chinese linguistics; therefore, its usage must have been reflected on the language textbooks which directly influence CFL learning/teaching. As a result, the longer CFL learners learn the language, the more familiar they are with the usage of 必須 *bìxū*, the more capable they are to put the expression into use.

The usage of 得 *děi* 'must; have got to', on the other hand, shows an opposite story. The more time learners spend on learning Chinese, the less of 得 *děi* ($r = -.32$) is being produced. Two interesting observations have arisen. First, CFL participants' little usage of 得 *děi* corresponds with that of the NC participants: Only 3% of native Chinese speakers used this deontic necessity compared with CFL participants' 9%. Both groups have demonstrated that the more fluent in the Chinese language, the less likely to use 得 *děi*. Next, although the finding appears to respond to Wang (1982) that 得 *děi* is usually used in oral conversations, such connection contradicts foreign language learners' tendency to apply words they are familiar with. That is, if learners are comfortable with 得 *děi* in conversations, they are more likely to apply it in the written response. The fact that 得 *děi* is not widely used by the CFL learners indicates their unfamiliarity and rare encounter with the expression.

6 Conclusion

The present study provided a preliminary understanding of how learners of Chinese as a foreign language use Chinese modality to express necessity. Findings show that native Chinese speakers are no doubt more capable of maneuvering the language to express with different words in various ways. CFL learners, on the other hand, are limited to language-related factors such as proficiency, familiarity, and experience with the language; all of which have a great impact on the language output. The study indicates that language learners are more able to use the target language if they receive adequate amount of language exposure. In other words, language learners rarely use the expressions they are not familiar with or seldom encounter with. This conclusion has an implication for CFL educators: providing great amount of language input could expedite language learning outcome. CFL educators could create an all-Chinese classroom to enable the input-output transformation.

The current study also suggests that CFL learners are more comfortable using epistemic necessity than deontic necessity. The differences imply that CFL learners need instructions emphasizing on the deontic necessity. Specific and thorough explanations and practices could strengthen to learners' understanding and usage of deontic necessity. Finally, there is an equivocal connection between the NC participants and Chinese heritage learners: The heritage learners tend to use the language in a way that is similar to that of NC speakers. The similarity highlights the uniqueness of Chinese heritage learners in terms of their language and culture backgrounds. More relevant studies are strongly required for better understanding on this subject.

In spite of the valuable data this study provides, there are a number of limitations to this study. Future research on necessity modals is emphatically needed in the field of teaching and learning Chinese as a foreign language. Emphases should be put on CFL participants' acquisition, the instrument for modal production, and the uniqueness of Chinese heritage learners. Having more CFL learners and the right instrument could truly reveal how necessity modals are acquired and used, which further increase the research validity and generalizability. Also more attention should be drawn on Chinese heritage learners for their unique language and culture backgrounds. What is more, learners' language background needs to be taken into consideration if possible, despite the current trend in the U.S. CFL classroom and the difficulty of recruiting CFL learners with similar language backgrounds. After all, it is ideal to have studies that exclusively focus on a single group of learners with the same language background because second/ foreign language learners' L1 play a crucial role in second/ foreign language learning in terms of language performance, grammar acquisition and usage, and pronunciation.

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