

## Modality in Mandarin Chinese and Tagalog

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### I. Introduction

In English, the word *can* covers a lot of different modalities, such as permission, ability, and knowledge. However, in languages such as Mandarin Chinese, modality can be expressed through lexical differences, especially in auxiliary verbs. Similarly to Mandarin Chinese, modality in Tagalog can be expressed through lexical differences as well as morphological differences directly on the action verb. Since Mandarin Chinese and Tagalog overlap in the way modality can be expressed through lexical differences in auxiliary verbs, we will be targeting modal auxiliary verbs in our study.

The baseline for our study are two research papers which show the modal groupings of verbs for Mandarin Chinese and Tagalog. In Mandarin Chinese, there are three distinct semantic categories: volition, probability, and necessity (Zhang 2015). In Tagalog, there are eight distinct semantic categories: necessity, obligation, permission, possibility, request, wish, ability, desire, certainty (Javier 2018). Other papers have established the semantic categories of *epistemic*, *deontic*, and *circumstantial* to be the baseline for modality in natural language (von Stechow 2006). Although many of the semantic categories in Mandarin Chinese and Tagalog can be grouped under one of the three semantic categories established by von Stechow, we will refer to the distinct semantic categories of the respective languages to maintain consistency.

To determine whether these lexical differences exist, we used a storyboard named “Party Food” from *Totem Field Storyboards*, which tests different types of modality such as desire and ability. We presented the story with a Google Form that prompted the participants to translate the story based off of the images and the captions from the storyboard. The English words in the storyboard that indicate modals are the target words/phrases *want*, *going to have* (will have), *can*, *can't*, *love*, *probably won't*, *would have*. The materials for this phase are given in Appendix A. After their initial translations, consultants participated in the grammaticality judgment phase in which we went through every sentence that has a modal auxiliary verb and asked them if other modal auxiliaries could be used in its place. The materials for this phase are given in Appendix B.

Based on previous literature on Mandarin and Tagalog modality, we predicted that only lexical items with the same flavor of modality could be used in place of the original auxiliary provided in the translation task. However, upon completion of the grammaticality judgment phase of the elicitation, we found that both of our participants found that replacing some modals from differing semantic categories was grammatical and did not change the meaning of the original phrase.

## II. Roadmap

We will first report the results for Mandarin (Section III) and Tagalog (Section IV) separately. We will then synthesize the results in Section V, drawing out generalizations and discussing similarities and differences among the languages. Section VI discusses possible improvements on our methodology and further questions that could be researched in the future. Section VII then gives a summary of the significant results we found. After a list of references cited, the details of our elicitation method are given in two appendices, one for each phase of elicitation.

## III. Results for Mandarin Chinese

We applied our elicitation materials to a native Mandarin Chinese speaker recruited through personal connections. This speaker participated in both the production and the grammaticality judgment stages.

### Phase 1: Translation Task

During the translation task (phase 1), the participant only used four modals to describe a variety of different phrases. These four modal auxiliaries are 能 (*néng*), 可以 (*kěyǐ*), 会 (*huì*), and 应该 (*yīnggāi*). Notably, all of these modals come from the probability category, except 应该 (*yīnggāi*), which appears in both the probability and necessity flavors. Below are some examples for each of the modals. Next to the free translation for each gloss, we wrote in parentheses which scene in the storyboard the word or phrase came from.

- (1) 我 不能 吃 蛤蜊  
wǒ bùnéng chī gélí  
1SG NEG-AUX.ABIL eat clams

“I **can't** eat clams.” (Scene 5)

- (2) 鸡肉 我 可以 吃, 而且 非常 喜欢 吃!  
jīròu wǒ kěyǐ chī, érqiě fēicháng xǐhuān chī!  
chicken 1sg AUX.PERM eat moreover like eat

“I **can** eat chicken. I love chicken!” (Scene 4)

- (3) 我 可以 吃 蛋糕, 但 我 应该 也  
wǒ kěyǐ chī dàngāo, dàn wǒ yīnggāi yě  
1SG AUX.PERM eat cake but 1SG AUX.SHOULD also

不会  
bùhuì  
NEG-AUX.PROB

“I **can** eat cake, but I **probably won't**.” (Scene 9)

- (4) 我们            会            有            莓果。  
wǒmen            huì            yǒu            méiguǒ  
1SG-PL            AUX.FUT            have            berries  
“We’re **going to** have berries.”

In the Chinese translations, 能 (*néng*) was only used in conjunction with a negation particle, which indicated that one of the characters was unable to do something. This aligns with the semantic meaning 能 (*néng*) carries, which is the ability to do something. Although 可以 (*kěyǐ*) means ‘can,’ the modal is typically used to talk about permission. However, in Phase 1, our participant used 可以 (*kěyǐ*) for permission, desire, and the ability to eat certain foods. The modal 会 (*huì*) was used with its expected semantic meaning, which relates to probability. This is evident in the translations for the source phrases “probably won’t” and “going to have.” Finally, 应该 (*yīnggāi*) was mostly found when used in conjunction with 会 (*huì*) and was only associated with the English phrase “probably won’t.”

### Phase 2: Grammaticality Judgment

In the grammaticality judgment phase (Phase 2), we compared the other possible modal auxiliaries to the speaker’s original choices on the Google Form used in Phase 1. For each modal used in the Mandarin Chinese responses, I went through each auxiliary listed in Zhang’s (2015) table and asked the participant if it was possible to replace the auxiliary, if replacing the auxiliary would make the sentence ungrammatical or nonsensical, and if replacing the auxiliary would change the meaning of the sentence. Since this phase requires asking if each of the twenty-three other modals from the table in Appendix B is viable, the volume of results is immense. Therefore, we have included just one example to summarize our significant results and findings from this task.

For example, in Scene 3, the participant was asked to translate the sentence, “What food are you going to have?” He initially wrote:

- (5) 你的            宴会    到时候            会            有            什么    样的            食物  
nǐde            yànhuì dào shíhòu            huì            yǒu            shénme yàng de            shíwù  
2SG-POSS            party    at that time            AUX.FUT            have            what    type of            food  
  
呢  
ne  
Q

“What food are you **going to** have [at the party]?” (Scene 3)

In this sentence, the participant used the modal auxiliary 会 (*huì*), which is part of the probability category and is referring to a possible event in the future (the party). Our initial

hypothesis would suggest that all of the probability modals would be grammatical and acceptable in this position and that the volition and necessity modals would be nonsensical. However, during the interview, our speaker said that 打算 (*dǎsuàn*) and 准备 (*zhǔnbèi*) are acceptable replacements for 会 (*hui*), even though they are from the volition category and translate to ‘intend’ and ‘prepare’ respectively. Moreover, not all of the probability modals were satisfactory replacements: 得 (*de*) was deemed ungrammatical, and 应该 (*yīnggāi*) was grammatical but changed the meaning from the original statement.

Overall, our participant responded that using some of the volition modals in place of the original probability auxiliary would be acceptable both grammatically and semantically. On the other hand, most necessity modals would be grammatical replacements, but they would completely change the meaning of the sentence.

#### IV. Results for Tagalog

We now turn to Tagalog. We applied our elicitation materials to a native Tagalog speaker recruited through personal connections. This speaker participated in both the production and the grammaticality judgment stages.

##### Phase 1: Translation Task

In the translation phase (Phase 1), the speaker used a variety of words/phrases for the target words. Next to the free translation for each gloss, we wrote in parentheses which scene in the storyboard the word or phrase came from. Here are the relevant glosses from the storyboard:

(6) *Mary, gusto mo bang dumalo sa party ko sa*  
 Mary want 2sg ENCL attend-INF LOC party POSS.1 LOC

*Sabado?*  
 Saturday

“Mary, do you **want** to come to my party on Saturday?” (Scene 2)

(7) *Anong mga pagkain ang ipapakain mo? Meron akong*  
 What ART.PL food ART.PL eat-FUT 2sg things 1sg

*mga hindi kinakain.*  
 ART.PL NEG eat-PRS

“What food are you **going to have**? I **can’t** eat certain things.” (Scene 3)

(8) *Magkakaroon kami ng cake. Hmm pwede kong kumain*  
 Have-FUT 1pl ART.SG.DIR cake EXPR can.MOD 1sg eat-INF

*ng* *cake, subalit hindi na lang siguro.*  
 ART.SG.DIR cake CONJ NEG ENCL ENCL maybe.POSB

*Masyadong matamis!*  
 too sweet

“We’re going to have cake. Hmm... I can eat cake, but I **probably won’t**. Too sweet!”  
 (Scene 9)

(9) *Hoy! Kinain mo ang lahat ng dapat*  
 EXPR eat-PST 2sg ART.PL everything ART.SG.DIR should.MOD

*aya kakainin ko! Oo, at gutom pa rin ako!*  
 agree eat-FUT POSS.1 yes CONJ hungry still also.ENCL 1sg

“Hey! You ate everything I **would have** eaten! Yeah, and I’m still hungry!” (Scene 17)

The number within the brackets serves as the target modal number and reference for the grammaticality judgment portion of the results. Again, the number within the parentheses indicates which scene in the storyboard it came from. These are the relevant table results of all target modals:

English target modal	Tagalog translation	Morphological?	Lexical?
[1] (2) want	gusto		✓
[2] (3) going to have [or going to eat]	ipapakain	✓	
[3] (3) can’t (eat)	hindi kinakain	✓	
[4] (4) going to have	magkakaroon	✓	
[5] (4) can	pwede		✓
[6] (4) love	gusto		✓
[7] (5) going to have	magkakaroon	✓	
[8] (5) can’t (eat)	di ako pwedeng kumain		✓
[9] (6) going to have	magkakaroon	✓	
[10] (6) can (eat)	pwede kong kumain		✓
[11] (6) probably won’t	hindi na lang siguro		✓

[12] (7) going to have	magkakaroon	✓	
[13] (7) can't (eat)	di ako pwedeng kumain		✓
[14] (8) going to have	magkakaroon	✓	
[15] (8) can (eat)	pwede kong kumain		✓
[16] (8) love	gusto		✓
[17] (9) going to have	magkakaroon	✓	
[18] (9) can (eat)	pwede kong kumain		✓
[19] (9) probably won't	hindi na lang siguro		✓
[20] (10) can (eat)	pwede akong kumain		✓
[21] (10) probably only (eat)	kakainin ko na lang siguro		✓
[22] (11) going to be (on Sunday)	ay sa Linggo na		✓
[23] (12) can't (come)	di ako makakarating	✓	
[24] (13) can (my brother Paul come)	pwede		✓
[25] (17) would have (eaten)	dapat ay kakainin		✓

## Phase 2: Grammaticality Judgment

In the grammaticality judgment phase (Phase 2), we compared the other possible lexical words the speaker could substitute with their original choices on the Google form serving as their baseline. If the speaker used a modality expressed lexically, then I cross-checked the semantic category the chosen lexical modal fell into with the Tagalog modal table. After I cross-checked the category, I asked the speaker if the other modals within that semantic category were valid for the sentence. Since the procedures require asking if the substitute modal from the table in Appendix B is viable, there is a large volume of results. Therefore, I will condense these findings to significant agreements and anomalies.

In scene (2), the target modal was “want” [1]. The speaker originally chose “*gusto*”, which falls in the semantic category of “wish”. In agreement, the speaker said “*ibig*” (love) and “*nais*” (want), which are both desire modals – the speaker explained that those two words are more formal than “*gusto*”. Interestingly enough, the speaker said the permission modals “*pwede*” (can) and “*maaari*” (may) sound valid in this context as well. Another anomaly was that

the request modal “*sana*” (hope) is valid. The final anomaly deals with the semantic category of wish. The only other wish modal is “*nawa*” (may), but the speaker says it cannot be used in this context.

In scene (3), the target modal was “going to have” [2] and the phrase itself asks what food the character is going to have (or what will the character eat). It is important to note that in scene (3), the context involves the idea of eating some food item. The speaker originally chose “*ipapakain*” (eat, future tense), which is interestingly a morphological change within the verb. After going through the list of modals in Appendix B, the speaker said there was no modal replacement for “*ipapakain*”. For all instances of “going to have,” the speaker only morphologically changed the verb in the context of *we will eat [food item]*.

After observing the behavior for the target modal “can’t (eat)” [3], the speaker originally chose “*hindi kinakain*” (eat, present tense) which is also a morphological change within the verb. Yet, after going through the list of modals, the speaker said there were valid modal replacements for “*hindi kinakain*”. Since “can” is the main part of the target modal, the agreeing “*pwede*” (can), “*maari*” (can), “*kaya*” (can) were valid replacements. “*Pwede*” is a “permission” modal, “*kaya*” is an ability modal, and “*maari*” is both a permission and ability modal. These are all valid replacements as long as the modals are paired with “*hindi*” to negate + the correct conjugation of “*kumain*” (to eat).

After further analysis on “*ipapakain*” and “*hindi kinakain*”, the difference between the two types of verbs (besides the tense) is that “*ipapakain*” is specifically the future tense for “to have something fed” with a focus on the *thing* being given for food, while “*kinakain*” is the present tense for “to eat something” with a focus on the *thing* being eaten. The grammaticality judgments between the [2] and [3] may have to do with the specific context “to eat”, which leaves the speaker constrained on which modals can replace the original choices.

In scene (9), the target modal was “probably won’t” [19]. The speaker originally chose “*hindi... siguro*”, which was an interesting choice considering that it is not on the modal list. The speaker said that “*siguro*” means “maybe”, and it can indicate uncertainty, or “sure” in certain contexts. Therefore, I asked the speaker if other modals under the possibility semantic category would be valid replacements. The 4 possibility modals in the table are “*baka*” (might), “*tila*” (might), “*yata*” (might), and “*maari*” (may), yet the speaker only said “*baka*” is a valid replacement.

In scene (17), the target modal was “would have” [25]. The speaker originally chose “*dapat*” (must), which is a necessity and/or obligation modal. After consulting the speaker, some notable anomalies arose. Since “*dapat*” falls in both the necessity and obligation categories, I asked if the other necessity and obligation modals are valid replacements. There are two forms of “*kailangan*” (need and should), which are respectively necessity and obligation modals. According to the speaker, “*kailangan*” does not sound valid in this context. Yet, the request modal “*sana*” (hope) can be a valid modal replacement. Other anomalies include the entire wish

and desire modal category as valid modal replacements: “*gusto*” (like), “*ibig*” (love), and “*nais*” (want).

## **V. Cross-linguistic comparison and synthesis**

In both languages, both participants found it acceptable to replace their original modal with at least one lexical item of a different semantic category. In Mandarin Chinese, this change in modality is only possible through changes in the auxiliary verb.

On the other hand, Tagalog has the added feature of the possibility of morphological changes to the verbs to add the feature of modality. This was an interesting case to examine because for some cases, the morphological change on the verb seemed to be the only solution to produce the target modal, while in other cases the morphological change on the verb seemed plausible to do a lexical substitution.

## **VI. Methodological lessons and further discussion**

Due to worldly circumstances (namely, the impact of COVID-19 on both ourselves and our participants) that have prevented further elicitation for Phase 2, parts of the grammaticality judgment stage have been left for further analysis for both languages. If we had had more time to complete our elicitation, we would have had more data and analysis to support our current findings.

For the Mandarin Chinese aspect of this topic, it would be interesting to run this task with other Mandarin-speaking consultants to see if their choices in modals would differ from those of our participant. In particular, some of the English items would have suggested particular semantic categories in Chinese according to Zhang’s (2015) table, such as “want.” However, our participant initially translated this using the auxiliary for permission. If studied further, one could determine whether the semantic categories of English and Mandarin align with one another or if Mandarin speakers are more inclined to translate based on what is more culturally appropriate, regardless of input from other languages. On a similar note, some of the modals in Zhang’s table appear more than once in multiple categories, which would suggest that the auxiliary may vary in modality depending on context. If this is the case, further research could focus on how Mandarin Chinese speakers interpret these auxiliaries and if there is inclination toward one semantic category over another.

Based on the results table for Tagalog, there are many target modals to observe and many interesting patterns that seem to stray away from the modal table, but also many that keep in line with the modal table. Further analysis should be taken on why certain modals, even those within the same expression category, are valid or invalid replacements. The interesting results with “*ipapakain*” [2] and “*hindi kinakain*” [3] may indicate that the action verb (to eat) has to do with influencing the choice between using the morphological change on the verb versus a modal + conjugated verb form since there are semantic differences between these specific forms of “to eat” which were explained in the results.

## **VII. Conclusions**

Although we predicted that choosing a different auxiliary from the same semantic category would not affect the meaning of the sentence, our participants informed us that some

of the modals within the same flavor would be grammatical, but they would alter the original sentence. In addition, some of the modals from differing semantic categories would be acceptable replacements for the original auxiliary used, even if their English translations greatly contrasted. Overall, this implies that the native speakers of both Mandarin Chinese and Tagalog categorize modal auxiliaries in a much more flexible way than what the previous literature suggests.

## **VIII. References**

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## **Appendix A: Elicitation Materials for Production**

### Instructions for Mandarin Chinese and Tagalog

Please translate this story into your native language. Thank you!

5/13/22, 5:45 AM

Party Food

### Party Food

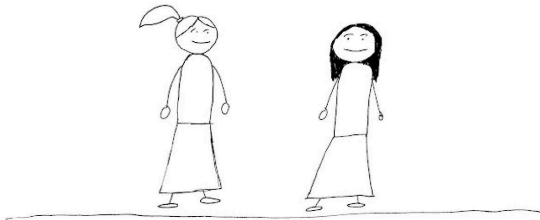
Please translate this story into your native language. Thank you!

\* Required

1. Name: \*

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2. 1. This is Mary and Sue. \*



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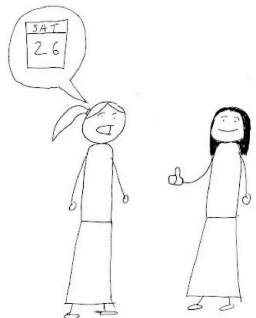
[https://docs.google.com/forms/d/1U1\\_b6hN5A7XEWSEyG6YKC4qEjL\\_QoEDNGIB3G\\_MwY/edit](https://docs.google.com/forms/d/1U1_b6hN5A7XEWSEyG6YKC4qEjL_QoEDNGIB3G_MwY/edit)

1/18

5/13/22, 5:45 AM

Party Food

3. 2. "Mary, do you want to come to my party on Saturday?" "Sure, Sue!" \*



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5/13/22, 5:45 AM

Party Food

4. 3. "What food are you going to have? I can't eat certain things." \*



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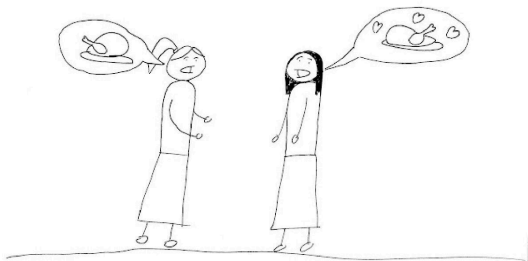
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5/13/22, 5:45 AM

Party Food

5. 4. "We're going to have chicken." "I can eat chicken. I love chicken!" \*




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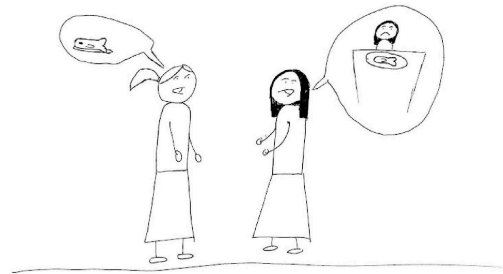
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5/13/22, 5:45 AM

Party Food

7. 6. "We're going to have fish." "Hmm...I can eat fish, but I probably won't. Too greasy!" \*




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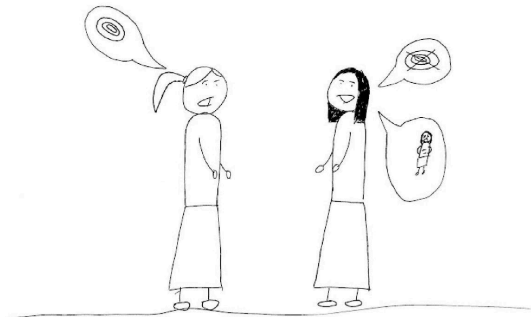
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5/13/22, 5:45 AM

Party Food

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8. 7. "We're going to have snails." "Oh no! I can't eat snails. They make me very sick." \*




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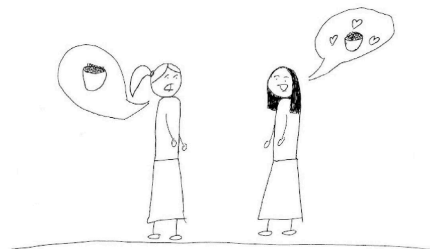
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5/13/22, 5:45 AM

Party Food

9. 8. "We're going to have berries." "I can eat berries. I love them!" \*




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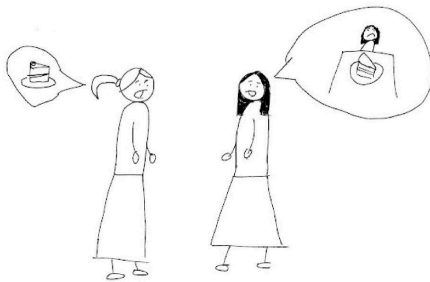
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5/13/22, 5:45 AM

Party Food

- 10. 9. "We're going to have cake." "Hmm...I can eat cake, but I probably won't. Too sweet!" \*




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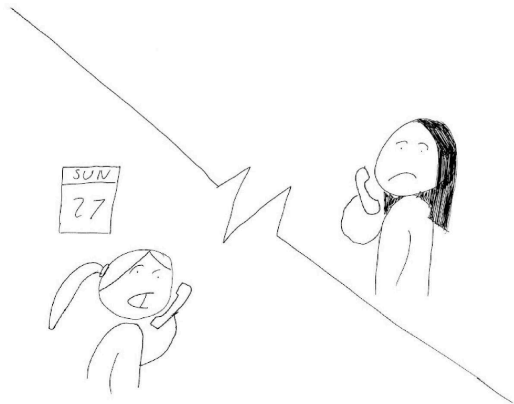
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5/13/22, 5:45 AM

Party Food

- 12. 11. A few days later, Sue calls Mary. "I'm sorry, Mary, but the party is now going to be on Sunday." \*




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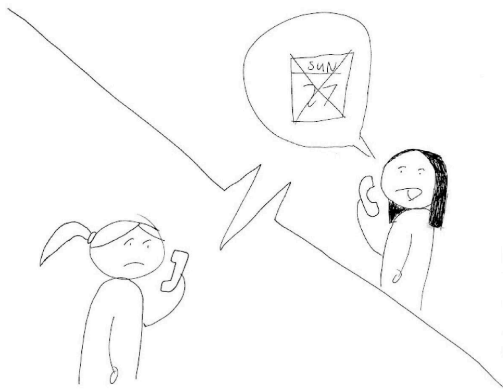
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5/13/22, 5:45 AM

Party Food

- 13. 12. "Oh no! I can't come on Sunday." \*




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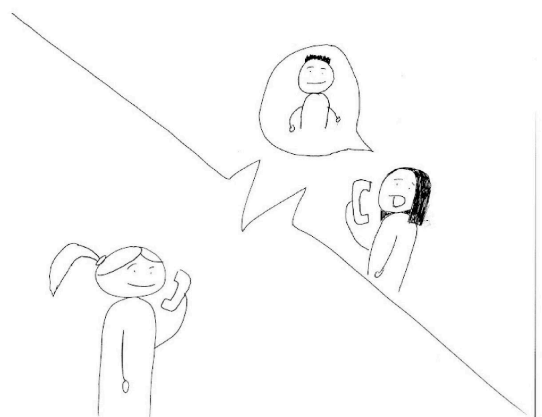
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5/13/22, 5:45 AM

Party Food

- 14. 13. "Can my brother Paul come instead?" \*



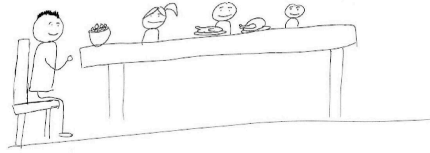

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15. 14. Paul goes to the party, and has a great time! \*



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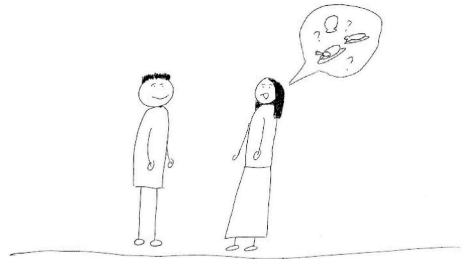
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16. 15. "Hi Paul! What did you eat at the party?" \*



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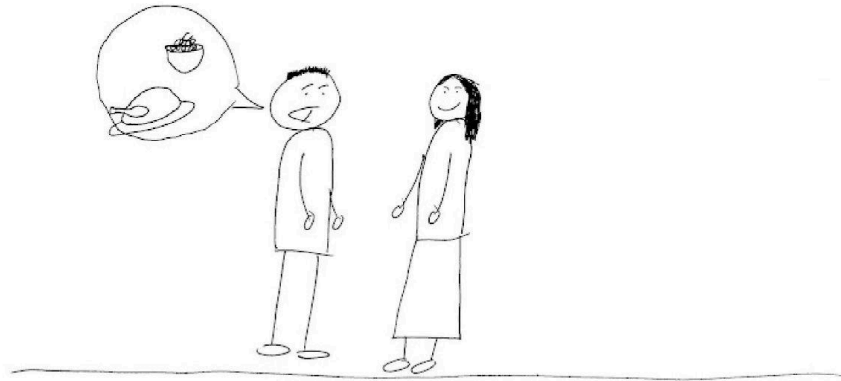
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17. 16. "I ate the chicken and the berries." \*



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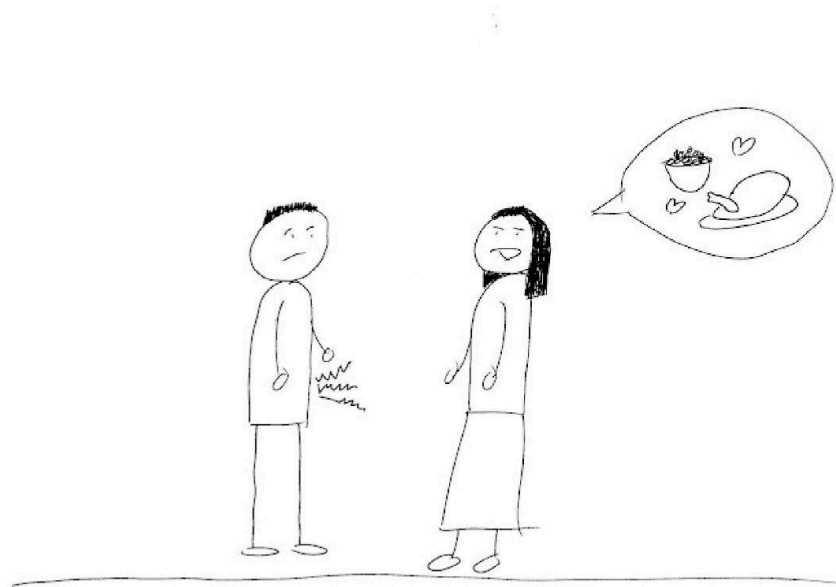
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18. 17. "Hey! You ate everything I would have eaten!" "Yeah, and I'm still hungry!" \*



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19. Any comments?

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## Appendix B: Elicitation Materials for Grammaticality Judgment

### Instructions for Mandarin Chinese

Interview prompt: “Going through all the modals in this table, let me know if [*modal word in table*] can replace [*speaker’s original modal word choice*]. Here is the table.”

#### *The Semantic Categories of Chinese Modal Auxiliary Verbs*

Chinese modal auxiliary verbs	Semantic category
爱 <i>ai</i> (like, love), 打算 <i>dasuan</i> (intend), 敢 <i>gan</i> (dare), 乐意 <i>leyi</i> (would like), 肯 <i>ken</i> (be willing to), 情愿/宁愿 <i>qingyuan/ningyuan</i> (would rather), 想 <i>xiang</i> (would like), 要 <i>yao</i> (will, would), 愿(意) <i>yuan(yi)</i> (be willing to), 准备 <i>zhunbei</i> (prepare)	Volition (10)
得 <i>de</i> (can, may), 可能 <i>keneng</i> (can, could, may, might), 可以 <i>keyi</i> (may, might), 会 <i>hui</i> (can, could, will, would, know how), 能 <i>neng</i> (can, could), 能够 <i>nenggou</i> (can, could), 应该 <i>yingai</i> (ought to be the cause that...)	Probability (7)
别/甭 <i>bie/beng</i> (mustn’t, shouldn’t), 得 <i>dei</i> (must), 配 <i>pei</i> (be good enough), 需要 <i>xuyao</i> (need), 要/须要/应 <i>yao/xuyao/ying</i> (should, must), 应该/应当/该/应 <i>yinggai/yingdang/gai/ying</i> (should), 值得 <i>zhide</i> (deserve)	Necessity (7)

“For this sentence, would it be okay to use [*modal word in table*] here?”

- If no, “Is it bad because it’s ungrammatical, or it doesn’t make sense?”
- If yes, “Does it change the meaning of the sentence?”
  - If yes, “What is the new meaning?”

### Instructions for Tagalog

Interview prompt: “Going through all the modals in this table, let me know if [*modal word in table*] can replace [*speaker’s original modal word choice*]. Here is the table.”

TABLE I: THE FILIPINO MODALS

Modal	Expresses:	Example
1. Kailangan (need) Dapat (must)	Necessity	Kailangang maibalik ang aklat bukas. (The book should be returned tomorrow.)
2. Dapat (must) Kailangan (should)	Obligation	Dapat sundin ang batas trapiko. (Traffic rules must be followed.)
3. Maaari (may) Pwede (can)	Permission	Maaaring pumasok ang may ID. (Those with ID may enter.)
4. Baka (might) Tila (might) Yata (might) Maaari (may)	Possibility	Tila uulan mamaya. (It might rain later.)
5. Sana (may) Nawa (may)	Request Wish	Sana'y bumuti ang iyong kalagayan. (May your condition become better.)
6. Kaya (Can)	Ability	Kaya niyang pumasa sa board exam. (He can pass the board exam.)
7. Gusto (like) Ibig (love) Nais (want)	Wish Desire	Gusto kong bumili ng bagongkotse. (I like to buy a new car.)
8. Talaga (certainly) Totoo (truly) Tunay (really)	Certainty	Talagang mahusay ang kaniyang pamumuno. (His leadership is really excellent.)

“For this sentence, what does it mean if we use [*modal word in table*] in this sentence? Does it sound valid?”