On Disambiguating baa sentences in Heyuan Hakka

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Abstract: As a rarely researched Chinese dialect, some interesting phenomena in Heyuan Hakka have not been well investigated. Although previous studies have researched some idiosyncractic markers or constructions in Heyuan Hakka, e.g., the grammaticalised baa, current interpretations of the linguistic phenomena in this Chinese diaclect are superficial. To introduce more up-to-date syntactic theories to the research of Heyuan Hakka, the multifunctional word baa is an ideal window into the combination of theories and concrete examples. Based on previous studies, this paper aims to give a further explanation of how native speakers decipher ambiguous baa sentences, i.e., to identify whether baa is a disposal marker or a passive marker, based on the more recent data collected from 8 native speakers. To achieve this foremost goal, this study investigates the effect of the animacy hieararchy and plausibility on producing baa sentences. For future research, this paper would inspire researchers to study Heyuan Hakka in virture of different theories and even to study other under-researched dialects in China.

Keywords: disambiguation, heyuan hakka, grammatical marker, animacy, plausibility

1. Introduction

Standard Mandarin is a Chinese variant that has attracted much focus. The Mandarin $g\check{e}i^1$ is a well-researched word for its multifunctionality, e.g., [1], [2] and [3]. Its main functions are indicated in the following examples, extracted from Shi's work:

(1) νī a. wŏ gěi le běn shū tā 1SG give **PERF** 3SG one CL book 'I gave him a book. gěi b. shuō-zhe shuō-zhe lăotóu shuō hútu le say-AUX say-AUX DISP old man confused **PERF** say '(Someone) confuse the oldman while talking about the thing.' c. fàn gěi chīwán tā rice PASS 3SG eat up **PERF** 'The rice was eaten up by him.'

¹ Its corresponding Chinese character is 给.

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gĕi in (1a) corresponds to the lexical verb 'to give' in English. In (1b), it is a disposal marker, followed by the patient. In sentence (1c), it is a passive marker, whose counterpart in English is the passive marker 'be', preceding the prepositional phrases containing the agent.

Apart from Mandarin *gěi*, the phenomenon of multifunctionality can be observed in a Chinese dialect, Heyuan Hakka. The word *baa* 'to give' in Heyuan Hakka corresponds to *gěi* [4]. It is underresearched, compared to *gěi*. *baa* functions either as a disposal marker or as a passive marker. From the following (2a) to (2c), *baa* functions as the verb meaning 'to give' in (2a), a disposal marker (2b), and a passive marker (2c), respectively:

```
(2)
     a. baa
                      bun
                                             ηoi
       give
                      CL.DEF
                                 book
                                             1SG
       'Give me the book.'
     b. ni
                baa
                                       dong
                                                   nia
                                                              nin
                            ηoi
       2SG
                 DISP
                            1SG
                                       consider
                                                   what
                                                              person
       'What kind of person do you think I am?' (rhetorical question)
     c. fan
                            noi
                                       sikyun
                                                   bilu
       rice
                PASS
                            1SG
                                       eat up
                                                   RES
       'The rice was eaten up by me.'
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Both words can cause ambiguity when they function as grammatical markers. They can be interpreted either as a disposal marker or as a passive marker. In this case, how to disambiguate the sentence is the centre of the problem. In previous studies, animacy was identified as an important factor to decipher sentences [3] and [4]. The following is a typical example:

There are two arguments in (3), ki '3SG', and coi 'the vegetable'. They are animate and inanimate, respectively. No ambiguity arises and the doer of the eating action can be easily recognized in this sentence, namely, ki '3SG'. Since an inanimate entity cannot act upon an animate entity, there is only one way of interpretation, i.e., ki '3SG' being the initiator. As a highly relevant factor, animacy will be discussed further in Section 3.

The motivation behind this study is the scarcity of previous studies on the ambiguity of Heyuan Hakka *baa* sentences, especially the inadequacy of the effect of animacy. Accordingly, the contribution of the paper is the discussion on how native Heyuan Hakka speakers decipher ambiguous *baa* sentences.

The paper is organized as follows: Section 2 reviews previous work on Heyuan Hakka *baa*. Section 3 is dedicated to the discussion of the effect of animacy and plausibility on disambiguating *baa* sentences. The paper ends with a summary of my findings.

2. Previous Studies on the Grammaticalised Marker baa in Heyuan Hakka

Before turning to the related work and theories, it is desirable to know very brief information about Heyuan Hakka. Heyuan Hakka² is a variant of Hakka, spoken in Heyuan, a city in the east of Guangdong Province in south-eastern China (see Fig.1 and Fig.2). Locating in between the Hakka region and Cantonese region, this unique location allows the generation of a special dialect, which combines the phonological features of Guangzhou Cantonese and the syntactic features of Huizhou Hakka [4].

² In this paper, Heyuan Hakka refers to the standard subvariety spoken in Yuancheng district.



Figure 1: The geographical location of Guangdong Province. (ArcGIS Hub)³.



Figure 2: Heyuan city in Guangdong Province. (Economist Intelligence Unit)4.

2.1. The Functions of Heyuan Hakka baa

As for the actual usage of $g\check{e}i$, the study of $g\check{e}i$ 'to give' started as early as 4 decades ago, e.g., [5], [1] and [3]. For the grammaticalized $g\check{e}i$, its syntactic construction is as follows [1]:

- (4) a. Disposal construction: $DP_{agent} + g\check{e}i + DP_{patient} + VP$
 - b. Passive construction: $DP_{patient} + g\check{e}i + DP_{agent} + VP$

The first DP in the disposal construction is the agent, the controller of the action denoted by VP. The second DP is the patient, the affectee of the action. A frequently used disposal marker in Mandarin is $b\check{a}$, which has the same syntactic construction as the disposal $g\check{e}i$. In $g\check{e}i$'s passive construction, the first argument is the patient and the second DP is the agent. And this is the opposite of its disposal construction.

Unlike *gĕi*, Heyuan Hakka *baa* is a rarely studied word [4]. But for the grammaticalized *baa*, some researchers argued that the syntactic constructions of *baa* can be obtained by adapting the syntactic constructions of *gĕi* in (4) [6] and [4]:

- (5) a. Disposal construction: $DP_{agent} + baa + DP_{patient} + VP$
 - b. Passive construction: $DP_{patient} + baa + DP_{agent} + VP$

Like *gěi*'s constructions, the DP preceding *baa* in (5a) is the agent while the DP preceding *baa* is the patient in its passive construction.

In my observation, the analysis of *baa*'s grammatical function does not reflect the reality. Some claims in previous work were even proved to be 'lacking authenticity'. For example, Liu and Lian (2017)'s description of the disposal *baa*, in which the grammaticalization of *baa* was discussed

³ https://hub.arcgis.com/maps/0c539fdb47d34b17bd1452f6b9f49e97/explore?location=34.219317%2C100.284421% 2C3.81 (last retrieved on 10th December 2022)

⁴ https://country.eiu.com/china/guangdong/guangzhou (last retrieved on 10th August 2022)

elaborately. They claimed that baa is not grammaticalized as a disposal marker and zok is the typical disposal marker in Heyuan Hakka, just like $b\check{a}$ in Mandarin. But in fact, baa can function as a disposal marker, as exemplified in [4].

2.2. Disambiguating baa Sentences

As mentioned in Section 2.1, both *gĕi* and *baa* are versatile words. When they function as grammatical markers, there are two readings of a sentence: a disposal sentence or a passive sentence. If the first DP in the sentence is recognized as the agent, then *gĕi* or *baa* will be a disposal marker (see (4) and (5) in Section 2.1). In contrast, if the first DP in the sentence is interpreted as the patient, the marker following it would be a passive marker.

According to previous work, one of the factors of disambiguating the *gěi* sentences or *baa* sentences is the animacy of arguments. The animacy hierarchy is essential to the understanding of the effect of animacy. Based on previous work on animacy [3] and [7], the animacy hierarchy is presented as follow:

(6) The animacy hierarchy (adapted from [7]): human > non-human animals > inanimate matters

According to the hierarchy, human beings have the highest level of animacy. Non-human animals such as dogs, are less animate than human-beings. The least animate element on the hierarchy is the inanimate matters such as vegetables, abstracts (e.g., love). Additionally, if two arguments in the sentence are categorized into the same class on the animacy hierarchy, for example, human, they have the same level of animacy.

Shi and Xie argued that arguments are the key to disambiguating *gěi* sentences [1] and [3]. In the first type of Mandarin *gěi* sentences, one of the two arguments are ellipted. For example:

In (7), the DP after the marker $g\check{e}i$ is omitted. In this case, the marker is identified as a passive marker. In other words, if one argument occurs before the main verb (in (11), the main verb is 'eat') and the other (after the verb) is omitted, then $g\check{e}i$ is a passive marker [3].

In the second type, both the agent and the patient appear in the sentences. Shi argues that ambiguity occurs when both arguments in a $g\check{e}i$ sentence are both human beings [1]. Like Shi's proposal, Xie confirms the importance of the animacy of the core arguments, namely, the subject and the direct object, as in the following instances from [1] and [3]:

According to Xie's proposal, the higher the animacy, the higher the agentivity [3]. The first sentence, (8a), is ambiguous because $xi\check{a}ot\bar{o}u$ 'the thief' and $t\bar{a}$ '3SG' are human. The two arguments have the same level of animacy so they have the same level of agentivity. Hence, both arguments are the possible agent in this sentence. By contrast, in (8b), $ni\acute{u}$ 'the cow' is less animate than $t\bar{a}$ '3SG'. Therefore, a passive sentence is the preferred reading of (8b). And $g\check{e}i$ is a passive marker in the sentence.

Apart from animacy, the second factor of distinguishing $g\check{e}i$'s functions is the context [3]. Like (8a), if no context is provided, it is impossible to accurately understand the sentences. Only by contextualizing the sentence, can the agent of (8a) be recognized.

According to [4], agentivity is also a crucial factor in identifying the function of *baa* in Heyuan Hakka. The following sentence exemplifies this proposal:

(9) guktui **baa** goi fik bilu bone PASS dog eat RES

'The bone was eaten by the dog.'

In (9), the bone is inanimate, and the dog is animate. It is unacceptable to identify the bone as the agent and the dog as the patient. So the sentence is unambiguous, thereby, *baa* being the passive marker.

Unlike Mandarin *gĕi* sentences, Chen concluded that no ambiguity occurs when the two arguments are human in passive *baa* sentences [4]. For example:

(10) ki zangxian **baa** noi nao 3SG just now PASS 1SG scold 'He was scolded by me just now.'

Chen claimed that *baa* in (10) is a passive marker without doubt [4]. *ki* '3SG' is the patient while *yoi* '1SG' is the agent. However, this conclusion is incorrect based on the repones from some native speakers participated in my study.

Based on all work reviewed above and the data collected for the study, this paper will discuss the possible factors involved in disambiguating *baa* sentences.

3. Discussion

3.1. The Effect of Animacy

My analysis in this paper is based on the responses of 8 Heyuan Hakka speakers (4 elder speakers above 50 and 4 younger speakers under 26). The collected data are categorized into three types of argument pairs. The first type is the animate-inanimate pairs, such as the human and the bowl in (12). The second type is the animate-animate pairs of arguments, namely, sentences where both arguments are animate, for example, the wolf versus the sheep in (15), and the police versus the thief in (16). The third type is the inanimate-inanimate pairs, such as the wind versus the clothes in (20).

The relation between animacy and agentivity can be noticed in the animacy hierarchy from Section 2.2 (which is repeated below):

(11) The animacy hierarchy (adapted from [7]): *human > non-human animals >inanimate matters* (=(6) in Section 2.2)

Xie and Huangpointed out that the higher up an entity is on the hierarchy, the more agentive it is [3] and [8]. No ambiguity will be triggered if the two arguments of a pair are respectively an animate entity and an inanimate entity, such as the dog and the bone. The reason is that an animate entity is a clearly higher category than an inanimate one on the hierarchy, which means the animate entity has higher agentivity. And the animate entity would be the preferred agent in the sentence. For example, based on the aforementioned animacy hierarchy, human is the most animate category on the hierarchy, and thereby, possesses the highest level of agentivity. Namely, if there is a human in a sentence, the preferred reading of the sentence is that the human is the agent and another argument is the patient. This is the rationale behind the interpretations of the following sentences:

(12)	a.	ŋoi	baa	wan	dasui	bao	
		1SG	DISP	bowl	smash		PERF
		'I smashed the bowl.'					
	b.	wan	baa	ŋoi	dasui	bao	
		bowl	PASS	1SG	smash		PERF
		(ed by me.'				

All the native speakers in my survey responded that they can readily understand (12a) and (12b). Such a uniform response can be interpreted via the effect of animacy. According to the animacy categories, wan 'the bowl' versus yoi '1SG' is a representative example of the animate-inanimate pair. wan 'the bowl' is an inanimate entity while yoi '1SG' is a human being. No matter how their positions are switched, their semantic roles will not be changed. The bowl is clearly the patient and the person is the agent. The bowl is the entity undergoing the smashing action and the person is the controller in the smashing event. The following sentence is also a typical example:

It is completely understandable for all respondents. Based on the animacy hierarchy, *guktui* 'the bone' is an inanimate matter and *goi* 'the dog' is an animal. The latter is more agentive than the former. Since 'the dog' is the agent and 'the bone' is the patient, *baa* can be identified as a passive marker based on the syntactic constructions of *baa* repeated (from Section 2.1) as follows:

- (14) a. Disposal construction: DP_{agent}+ baa + DP_{patient} + VP
 - b. Passive construction: DP_{patient}+ baa + DP_{agent} + VP

As reviewed in Section 2.1, previous studies (e.g., [4], [6]) illustrate that the DP before the marker *baa* is the agent and the DP following *baa* is the patient in the disposal construction. In other words, if the agent precedes *baa*, then the sentence should be a disposal sentence and *baa* is the disposal marker. If the agent follows the marker, then the sentence should be a passive sentence and *baa* is a passive marker. Such rule is embedded in the speaker's mind. Accordingly, once *yoi* '1SG' in (12a) and (12b) is recognized as the agent and the function of *baa* can be identified. *baa* is a disposal marker in (12a) as it follows the agent *yoi* '1SG'. It is a passive marker in (12b) as it follows *yoi* '1SG'.

Therefore, the starting point of identifying the function of *baa* is to identify which argument is the agent in the sentence. After recognising the agent, the second step is noticing the position of the agent. As in (14), if the agent is placed in the DP slot before *baa*, then *baa* is a disposal marker. If it is placed in the DP slot after *baa*, then *baa* is a passive marker.

However, things become complicated in animate-animate pairs. The animate-animate pairs cannot be explained via the animacy hierarchy. Specifically, the animacy hierarchy cannot help to identify the agent of the sentence.

When both arguments are animate in *baa* sentences, respondents do not always agree with each other. The sentence *ki baa yoi da bao* is a typical example. Based on speaker's responses, it is self-evident that the interpretation of the sentence is not entirely animacy-based. Since *ki* '3SG' and *yoi* '1SG' are both human beings, they have the same level of agentivity. It cannot be distinguished that which argument is more agentive, and being the agent, purely based on animacy, the innate feature of the arguments. So, animacy is not the only factor in disambiguating between the agent and the patient. There should be another factor that can account for what happens in the animate-animate pair.

3.2. The Effect of Plausibility

In this subsection, I propose that when the arguments are both animate, plausibility (namely, world knowledge) is more important than animacy in helping native speakers decipher *baa* sentences. Generally, within the same category on the animacy hierarchy, a plausibility-oriented pattern is crucial for understanding *baa* sentences.

To exemplify the effect of plausibility, the sheep versus the wolf is a typical example of the animate-animate pair:

The agent in (15) cannot be recognized solely based on the animacy hierarchy, since *yoŋ* 'the sheep' and *loŋ* 'the wolf' have the same level of animacy. Therefore, both are likely to be the agent. If it is entirely animacy-based, the sentences should not be ambiguous. In such a case, more information is needed for the listener to identify which argument is the doer of the eating action, and I argue that world knowledge is the key. If the interpretation is plausibility-oriented, only one reading is acceptable, namely, with *yoŋ* 'the sheep' being the patient. According to world knowledge, the sheep is impossible to eat the wolf, so the sheep is unlikely to be the agent. Consequently, no ambiguity is triggered.

Likewise, when the arguments are both human beings, world knowledge is also helpful in the disambiguation between the agent and the patient. For example:

(16) a. baa jintsa xiaotoi zok police DISP thief catch **PERF** 'The police arrest the thief.' xiaotoi baa b. jintsa zok bao thief **PASS** police **PERF** catch 'The thief was arrested by the police.'

Native speakers report that both sentences in (16) can be understood with ease. Based on world knowledge, *xiaotoi* 'the thief' is less agentive in the catching event because it is impossible that *xiaotoi* 'the thief' arrests the *jiŋtsa* 'the police'. Therefore, the only acceptable reading is that *xiaotoi* 'the thief' is the patient. And *baa* is the disposal marker in (16a) as it follows the agent (see Section 3.1). Conversely, *baa* is the passive marker in (16b).

Moreover, the effect of plausibility is reflected in the counter-intuitive questions which are designed to testify the world knowledge's impinging on the interpretation of *baa* sentences. The following is an exemplary question:

- (17) In a fairy tale, the sheep evolved. They became very strong. They are the enemy against the wolves. Since the resource is becoming more and more scarce, the sheep have to hunt and eat the wolves for survival. The wolves, however, are getting weaker and weaker. The wolves cannot fight against the sheep. Based on the story, how do you understand the sentences *lon baa yon fik bao* and *yon baa lon fik bao*?
 - A. The wolf ate the sheep. / The sheep was eaten by the wolf.
 - B. The wolf was eaten by the sheep. / The sheep ate the wolf.
 - C. I don't understand the sentences.

All native speakers chose the option B. In other words, they agree that both sentences express that yoŋ 'the sheep', in this context, is the eater. Contrastively, the identical sentences in (17) are interpreted in the manner where the wolf is the eater and the sheep is the eatee. The explanation for the completely different interpretation patterns lies in the question itself. In the story, because the sheep are stronger than the wolves, the sheep are more agentive. They are more likely to be the agent. Therefore, baa in the sentence loŋ baa yoŋ ʃik bao 'the wolf was eaten by the sheep' is the passive marker as it precedes the agent yoŋ 'the sheep'. Although the story runs counter to world knowledge in the real world, the speakers still chose option B. The reasonable explanation is that the notion 'the wolf is unlikely to eat the sheep' is part of world knowledge in the fictional world depicted by Question 6, just like the notion 'the sheep is unlikely to eat the wolf' is part of world knowledge in the real world.

Except for the animate-animate pairs, plausibility can influence the understanding of the animate-inanimate pairs as well. For example, in Question 15 (the translated version is provided below):

- (18) In a fairy tale, there is a group of bowl monsters. They are extremely powerful and they can attack human-beings. The bowl monsters and the human-beings are enemies against each other. But the bowls are getting stronger than the human-beings. A man cannot defeat a bowl monster by himself. One day, a boy met a bowl monster in the forest. According to the story, how do you understand the sentence *za gui ze baa go za wan da bao*?
- A. The boy was punched by the bowl.
- B. The bowl was punched by the boy.

All respondents choose option A and consider that *go za wan* 'that bowl' is the stronger attacker. In this fictional world, world knowledge is that *za gui ze* 'the boy' is unlikely to win the battle. Hence, *go za wan* 'that bowl' is more likely to be the agent so the marker *baa* before it functions as a passive marker.

However, plausibility cannot explain the ambiguity in all situations. It cannot disambiguate between two personal pronouns, as in (19):

Half of the speakers consider ki '3SG' as the agent, while the other half consider it as the patient. The result makes (19) the most controversial sentence in our survey. ki '3SG' and yoi '1SG' are both human beings, so they have the same level of agentivity. Since no contextual information is provided, it is unknown which persons are referred to by the personal pronouns respectively. Therefore, world knowledge is not helpful in this case. The sentence is not understandable if there is no contextual information, which is needed for the disambiguation between ki '3SG' and yoi '1SG'. For example, the listener noticed the wound on the speaker's face and asked the reason for the injury. Then the speaker might respond: ki baa yoi daa bao. In this context, yoi '1SG' (referring to the speaker in this context) is the patient with no doubt. And ki '3SG' is the agent. No ambiguity would be triggered in this case. The agent ki '3SG' precedes baa, thereby baa functioning as a disposal marker.

The final type of argument pairs is the inanimate-inanimate pairs. Nevertheless, in some cases, an inanimate entity does not have a volition so it cannot be the agent. (20) is a typical instance:

hong 'the wind' in (20) is the force rather than the agent of the blowing action. In this case, the disambiguation cannot rely on the agentivity of the arguments. But world knowledge plays a part in deciphering (20) as clothes cannot 'blow something away' in actual world. Moreover, it remains unknown if plausibility is the only factor and how important it is.

To briefly summarize, this section argues for the two factors of identifying the grammatical function of *baa* in Heyuan Hakka. Three types of argument pairs have been discussed, including the animate-animate pairs, animate-inanimate pairs and inanimate-inanimate pairs. Animacy and plausibility are both applicable to the disambiguation of the *baa* sentences and *gĕi* sentences, where the core arguments (subject and object) are animate-inanimate pairs. Nevertheless, the disambiguation of animate-animate pairs is not the animacy-based. It is plausibility-oriented. But there is an exception. If the core arguments in a *baa* sentence are both personal pronouns, then both animacy and plausibility are not the solution. In such case, contextual information is needed.

4. Conclusions

To recapitulate, I propose that the identification of *baa*'s function (namely, as a disposal marker or a passive marker) depends on the disambiguation between the agent and the patient. The first factor is

animacy. When the two arguments form an animate-inanimate pair, no ambiguity is triggered. The function of the marker *baa* can be easily identified as well. As the disambiguation in an aminate-animate pair is not animacy-based, a second factor must exist. I postulate that the second factor is plausibility, i.e., world knowledge. Except for the pair of personal pronouns, the plausibility-oriented pattern can explain the disambiguation not only in all animate-animate pairs but also in all animate-inanimate pairs. For the pair containing two personal pronouns, contextual information is needed.

In future research, more native speakers of Heyuan Hakka should be interviewed. This paper only includes the responses of eight speakers, which are not a substantial sample. In addition, more explanations for the cross-generational variations displayed in this survey is needed. The passive *baa* is prioritized in the interpretation. However, because most younger respondents chose 'I cannot understand the sentence' and the sample is not substantial enough, it remains unconfirmed if other younger speakers have the disposition to interpret the first argument as the patient. Thus, a diachronically oriented explanation is needed to discuss whether and how the cross-generational variation influences the disambiguation of *baa* sentences. Additionally, this paper may inspire the studies on the multifunctional markers like *baa* in other Chinese dialect. For example, *bun* in Hakka also functions as a disposal marker or a passive marker.

List of Abbreviations in the Glossing

first person singular 1SG 2SG second person singular 3SG third person singular perfective **PERF** (noun) classifier CL AUX auxiliary DISP disposal **PASS** passive

definite

References

DEF

- [1] Shi, Y. (2004). Gĕi: its double functions as passive and disposal markers. Chinese Teaching in the World 3, 15-26.
- [2] Wang, J. (2004). Gĕi zi ju biao chu zhi de lai yuan. Linguistic research 4, 9-13.
- [3] Xie, X. (2010). Gĕi zi ju bei dong yi shi xian de zhi yue yin su. Linguistic Research 2, 46-49.
- [4] Chen, F. (2018). Study on common and exceptional syntactical structures of Yuancheng (Heyuan City, Guandong Province) dialect. Guangzhou MA: Jinan University.
- [5] Zhu, D. (1979). Yu dong ci gĕi xiang guan de ju fa wen ti. Dialect 2, 173-182.
- [6] Liu, L., and Lian, C. (2017). The meaning and usages of baa in Shuiyuan accent, a Hakka dialect in Heyuan city, Guangdong Province. Dialect 1, 11-18.
- [7] Olmen, van D. (2021). Animacy. Lecture notes from LING222 at Lancaster University.
- [8] Huang, H. (2015). Relating causative and Passive "Bun" constructions in Hakka. Tsing Hua Journal of Chinese Studies 45(2), 167-200.