Generic Modals in Mandarin

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Abstract

Generics express events occurring with some regularity or general stable properties (Krifka et al. 1995). While generics are mostly realized in the present tense without a dedicated morpheme in English, the morpheme *hui* is used in Mandarin in certain cases, which has been claimed to be a generic modal and related to its epistemic/future and ability usages (Chang 2001, Tsai 2015, Wu 2020). However, this generic modal *hui* is not present in all generic sentences. With an investigation of the distribution and licensing of *hui*, this paper shows (1) that this morpheme occurs with episodic/stage-level predicates but not stative/individual-level ones, and (2) that adverbs, negators, and polarity operators can license this morpheme in stative/individual-level predicates (see also Wu 2020). This paper claims that Mandarin has two generic operators, providing independent evidence for Chierchia's (1995) theory of a distinction between two generic operators. One type is realized by *hui* and situated in Spec,AspP with restrictions on the conditions under which the relevant event typically occurs, while the other is realized covertly and situated in Spec,VP with a restriction on the location where the eventuality holds. This paper further proposes a stacking of two generic operators, based on the empirical facts in Mandarin.

1 Introduction

Generics, also known as generic sentences or characterizing sentences, capture generalizations that we observe about the world. Instead of particular events or properties, generics express the regularities of events (1a-b) and the general properties (1c) (Krifka et al. 1995).

(1) a. John **smokes** a cigar after dinner. (Krifka et al. 1995:3)
b. John **used to** smoke a pipe. (ibid:7)
c. A potato contains vitamin C, amino acids, protein, and thiamine. (ibid:3)

In terms of morphology, generics are realized differently across languages, e.g., generics in English are realized as the present tense (1a) or with an auxiliary construction for past events (1b), while in Swahili, they are realized as an affix (2).

(2) Wanawake **hu**-fanya kazi ya kochokoa pwesa.
women **HABIT**-do work of catching squid
'The women (generally) do the work of catching squid.' (ibid:8)

In Mandarin, generics can be expressed by a morpheme *hui* (3), which is categorized as a modal on a par with its other usages as future and ability (Chang 2001, Tsai 2015, Wu 2020). However, this generic modal in Mandarin does not appear in all constructions of genericity (4).

(3) a. Xiong **hui** dongmian.
bear **HUI** hibernate
'Bears hibernate.'
b. Xiaoming chi-bao fan hou **hui** chouyan.
Xiaoming eat-full rice after **HUI** smoke
'Xiaoming smokes after eating.'

(4) a. Gou (#**hui**) you si tiao tui.
dog (#**HUI**) have four CL leg
'Dogs have four legs.'

b. Haitun (#**hui**) hen congming.
dolphin (#**HUI**) very smart
'Dolphins are very smart.'

In this paper, I use diagnoses of generics (Krifka et al. 1995) to confirm the status of *hui* as a generic modal and also present the distribution and licensing of this morpheme in different contexts. Following Chierchia's (1995) theory, I propose two generic operators in Mandarin, *hui* and Ø, and argue that they can be stacked in Mandarin.

2 Diagnoses, Distribution, and Licensing

2.1 Diagnoses

The morpheme *hui* found in generic sentences as in (3) is associated with genericity not only by intuitive interpretation but also by the empirical diagnoses as defined in Krifka et al. (1995).

First, the morpheme *hui* can co-occur with the adverbs *usually* and *basically*, which both characterize genericity (5) despite slight differences in meanings.

(5) a. Xiong **tongchang** / **jibenshang** hui dongmian.
bear **usually** / **basically** HUI hibernate
'Bears usually / basically hibernate.'

b. Xiaoming chi-bao fan hou **tongchang** / **jibenshang** hui chouyan.
Xiaoming eat-full rice after **usually** / **basically** HUI smoke
'Xiaoming usually / basically smokes after eating.'

Second, it is infelicitous for *hui* to co-occur with progressive aspect (6b-c), given that generics are typically stative and that statives are incompatible with progressives as seen in (6a).

(6) a. Wo **(#zhengzai)** xihaun ta.
1SG **(#PROG)** like 3SG
'I like / #am liking him.'

b. #Xiong hui **zhengzai** dongmian.
bear HUI **PROG** hibernate
'Bears hibernate.'

c. #Xiaoming chi-bao fan hou tongchang hui **zhengzai** chouyan.
Xiaoming eat-full rice after usually HUI **PROG** smoke
'Xiaoming smokes after eating.'

Third, *hui* is incompatible with accidental properties, namely, the properties that are not characteristic of the subjects in question. In (7a), 'getting hurt' is not a characteristic property of bears but an accidental event, thus causing the infelicity of the presence of the generic *hui*.

(7) a. ??Xiong hui (rongyi) shou-shang.
bear HUI (easily) get-hurt
'Bears (easily) get hurt.'

b. ??Xiaoming chi-bao fan hou hui diedao.
Xiaoming eat-full rice after HUI fall.over
'Xiaoming (usually) falls over after eating.'

From the above diagnoses, the morpheme *hui* is apparently associated with genericity, and thus can be categorized as a generic modal in line with the assumption in the previous literature (Chang 2001, Lin 2012, Tsai 2015).

2.2 Distribution

Though the generic modal *hui* helps express generics in Mandarin, not all generic sentences require this morpheme. The distribution is dependent on the type of predicate.

The generic modal *hui* is obligatorily present with episodic/stage-level verbs (8).

(8) a. Xiong #(hui) dongmian.
bear #(HUI) hibernate
'Bears hibernate.'
b. Xiaoming chi-bao fan hou #(hui) chouyan.
Xiaoming eat-full rice after #(HUI) smoke
'Xiaoming smokes after eating.'

However, the generic modal *hui* is absent with individual-level predicates, such as stative verbs (9) and individual-level adjective predicates (10).

(9) a. Gou (#hui) you si tiao tui.
dog (#HUI) have four CL leg
'Dogs have four legs.'
b. Juzi (#hui) fuhan weitamin C.
tangerine (#HUI) contain vitamin C
'Tangerines contain vitamin C.'

(10) a. Haitun (#hui) hen congming.
dolphin (#HUI) very smart
'Dolphins are very smart.'
b. Xifang ren (#hui) hen gao.
western person (#HUI) very tall
'Westerners are tall.'

In brief, episodic/stage-level predicates but not stative/individual-level ones can have the generic modal *hui*. However, though this generalization holds water for the present data, we will see some contexts can license the presence of *hui* with stative/individual-level predicates.

2.3 Licensing

While the generic modal *hui* is not found with individual-level predicates (11a), adverbs, negators, and polarity operators however can help license the presence of *hui* (11b-d) (see also Wu 2020).

(11) a. Shizi (#**hui**) you zongmao.
lion (#**HUI**) have mane
'Lions have a mane.'
b. Shizi tongchang / jibenshang (**hui**) you zongmao.
lion usually / basically (**HUI**) have mane
'Lions usually / basically have a mane.'
c. Mu-shizi bu **hui** you zongmao.
female-lion NEG **HUI** have mane
'Lionesses don't have a mane.'
d. Mu-shizi (**hui**) you zongmao ma?
female-lion (**HUI**) have mane Q
'Do lionesses have a mane?'

Although the morpheme *hui* may seem optional,[1] the meanings with and without it are

[1]Strictly speaking, the morpheme *hui* in negation (11c) is not optional. The sentence without *hui* requires

slightly different. Without the modal *hui*, the generic sentences are merely a plain description, whereas with the modal *hui*, the generic sentences appear to be judged according to normal conditions and (im)possibilities as relevant to our world knowledge. For example, (11b) with *hui* is uttered in a context where we may be seeing a lion without a mane but still confirm this regularity based on normal conditions. Similarly, (11c) and (11d) with *hui* respectively negate and doubt the possibility of lionesses with a mane according to normal conditions.

3 Two Generic Operators

A dyadic approach to generics is adopted here, where the generic operator relates to two propositions. Namely, the semantic structure of generic sentences consists of a matrix, which introduces the proposition of generalizations, and a restrictor, which restricts the condition for generalizations parallel to *when-* and *if*-clauses (Carlson 1989, Schubert and Pelletier 1989, Krifka et al. 1995). Thus, the generic sentence in (12a) can be thought of as having the semantic structure as (12b).

(12) a. John smokes (when he comes home).
b. Gen s [$_{\text{Matrix}}$ John smokes in s] ([$_{\text{Restrictor}}$ when he comes home in s]).

Building on the dyadic analysis, Chierchia 1995 distinguishes an inherent generic operator from a general generic operator,[2] given the pair below. The sentence (13a) has a stage-level predicate and involves with a general generic operator. This operator is situated in Spec,AspP as related to the habitual aspect and has a condition-relation (**C**) in the restrictor, which requires the smoking event to take place in certain conditions such as when Fred feels like smoking but not when he is asleep. On the other hand, the sentence (13b) has an individual-level predicate and occurs with an inherent generic operator. This operator is in Spec,VP as inherent to the predicate itself and has a locative relation (**in**) in the restrictor. Namely, when Fred is in the target worlds, the general property holds true in all circumstances, including when he falls asleep.

(13) a. Fred smokes. → Gen s [**C**(f,s)] [smoke(f,s)]
= 1 iff in all the worlds maximally similar to ours where the felicity conditions for Fred's smoking is met, Fred does the action of smoking.
b. Fred is a smoker. → Gen s [**in**(f,s)] [smoker(f,s)]
= 1 iff in all the worlds maximally similar to ours where Fred is located, Fred has the property of being a smoker.

Based on this distinction, I propose that these two generic operators have different morphological realizations in Mandarin (14). The morpheme *hui*, as occurring with episodic/stage-level predicates, realizes the general generic operator in the Spec,AspP position. This generic modal *hui* has the condition-relation in the restrictor, requiring certain conditions to be met for the relevant action to take place (15a). On the other hand, stative/individual-level predicates occur with a covert inherent generic operator in the Spec,VP position with a locative relation in the restrictor (15b). This explains why *hui* is not present in (14b) and (9-10).

(14) a. Xiong **hui** dongmian.
bear **GEN** hibernate
'Bears hibernate.'

another negation word *mei*, as will be seen in (18).

[2]The term general generic operator is coined by me in order to differentiate it from the inherent one.

b. Gou **Ø** you si tiao tui.
dog **GEN** have four CL leg
'Dogs have four legs.'

(15) a. Gen-*hui* s [bear(x) ∧ **C**(x,s)] [hibernate(x,s)]
= 1 iff in all the worlds maximally similar to ours where the felicity conditions for bears' hibernating are met, bears hibernate.
b. Gen-Ø s [dog(x) ∧ **in**(x,s)] [have-four-legs(x,s)]
= 1 iff in all the worlds maximally similar to ours where dogs are located, dogs have four legs.

A difference emerges between these generic operators, with respect to quantification inside the predicate. An inherent generic operator can easily have quantification in predication without any overt restrictor (16c), as the predicate describes the inherent property. On the other hand, a general generic operator needs an overt restrictor in order to have quantification in predication (16a-b), as the quantification is not inherent and needs to be licensed relative to a certain condition (see Krifka et al. 1995 for English).

(16) a. Xiong **hui** chi (#wushi tiao) yu.
bear **GEN** eat (#fifty CL) fish
'Bears eat (#fifty) fish.' (context-less, without QUD)
b. Xiong [zai dongmian hou] **hui** chi (wushi tiao) yu.
bear [LOC hibernate after] **GEN** eat (fifty CL) fish
'Bears eat (fifty) fish after hibernation.'
c. Gou **Ø** you (si tiao) tui.
dog **GEN** have (four CL) leg
'Dogs have (four) legs.'

However, as seen above, adverbs, negators, and polarity operators can license the presence of *hui* with stative/individual-level predicates and force the reading where speakers moreover consider normal conditions (11b-d). I thus propose that the generic modal *hui* in Spec,AspP can be stacked over the covert inherent generic operator in Spec,VP. In this configuration, the reading of normal conditions comes from the semantics of *hui*, as it has a condition-relation in the restrictor (where conditions are contentful and salient (Chierchia 1995)). On the other hand, the general stable property is still captured by the inherent generic operator Ø. In other words, the operator *hui* introduces normal conditions, in which the general stable property holds true. The semantic structure is shown in (17): when the condition is met as licensed by the general generic operator, then an entity has its inherent property as licensed by the inherent generic operator.

(17) Gen-*hui* s [C(x,s)] [Gen-Ø s [in(x,s)] [V(x,s)]]
= 1 iff in all the worlds maximally similar to ours where the felicity condition for x is met, when x is located in them, x has the property V.

With this proposed structure, we can thus capture the intuition in (18). The proposition (18a) expresses a plain description of negating that whales have ears, while the proposition (18b) indicates that speakers are considering normal conditions similar to the actual world according to world knowledge. Hence, in addition to negating that whales have ears like (18a), (18b) appears more of an opinion based on the speaker's thinking about conditions. In other words, with (18b), speakers may have an opinion that it is impossible for whales to have ears, as having ears appears weird and not suitable according to whales' body structures and their living environments in ocean (where speakers think of ears as protruding ones as humans).

(18) a. Jingyu mei you erduo.
whale NEG have ear
'Whales don't have ears.'

b. Jingyu bu **hui** you erduo.
whale NEG **HUI** have ear
'Whales don't have ears.'

This proposal can be further evidenced by the interactions between the properties of subject noun phrases and predicate types. As noted by Chierchia 1995, in addition to actions and predicates, the featural restrictions of subject nouns may also serve as a condition for a generic statement to be true. Hence, for the generic statement in (19a) to hold true, the conditions concern both the flying action and the bird types (19b), e.g., excluding penguins or ostriches.

(19) a. A bird flies.
b. Gen s [bird(x) ∧ C(x,s)] [fly(x,s)] where C = flying conditions; birds that can fly

The presence of *hui* shows a gradient effect in this respect. The more restricting conditions come with the subject noun phrase, the more likely the morpheme *hui* is licensed with a stative/individual-level predicate (20a-c). In brief, the generic modal *hui* is licensed because of its condition-relation in the restrictor. It has to be noted that this gradient effect can be seen with accidental generalizations as in (20) but not for law-like generalizations (21). In (21), despite more featural restrictions on the subject noun, the presence of *hui* does not improve the example. The observation is presented here, but a full account of how restricting conditions interact with different types of generalizations is left for future research.

(20) a. nanren (#**hui**) hen huaxin.
man (#**HUI**) very unfaithful
'Men are unfaithful.'
b. Niuyue de nanren (?**hui**) hen huaxin.
New.York de man (?**HUI**) very unfaithful
'Men from New York are unfaithful.'
c. You zhe zhong mianxiang de nanren **hui** hen huaxin.
have this kind face DE man **HUI** very unfaithful
'Men with this kind of face is unfaithful.' (in contexts of physiognomy or face-reading)

(21) a. Gou (#**hui**) you si tiao tui.
dog (#**HUI**) have four CL leg
'Dogs have four legs.'
b. Heise de gou (#**hui**) you si tiao tui.
black DE dog (#**HUI**) have four CL leg
'Black dogs have four legs.'

4 Conclusion

Two generic operators were proposed in Mandarin to capture the distribution of *hui*: a general generic operator in AspP (Gen with **C**ondition) realized as *hui* and an inherent one in VP (Gen with **in**-location) realized as Ø. Furthermore, it was demonstrated that the two generic operators can co-occur, which suggested their respective presence, as seen in the presence of *hui* with stative/individual-level predicates. It takes place when the conditions in restrictors are activated, either by adverbs, negators, and polarity operators or by featural restrictions of subject noun phrases. Hence, this paper provided independent support in Mandarin for Chierchia's (1995) theory.

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