

Universal concord as syntactic agreement *

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1 Introduction

One focus in the Minimalist Program is the syntax-semantics interface, which concerns how syntactic objects are mapped onto the meaning component. Concord among quantificational elements represents a case of apparent syntax-semantics mismatch and therefore has drawn considerable interests. For example, in negative concord like (1), there are two negative expressions on the surface but the sentence meaning is interpreted as if there is only one negation (Labov 1972, Haegeman and Zanuttini 1991, Zeijlstra 2004, *i.a.*). This apparent mismatch is problematic from a view that sentence meanings are composed from their building blocks (i.e. the Principle of Compositionality, Frege 1892) and poses a challenge to the syntax-semantics mapping.

(1) Negative concord: doubling negative expressions with one logical negation

Gianni **non** ha visto **niente**. (Italian, Giannakidou and Zeijlstra 2017:7)
Gianni NEG has seen n-thing
'Gianni hasn't seen anything.'; Not: 'Gianni hasn't seen nothing.'

Empirically, concord is found cross-linguistically among various kinds of quantificational elements, including modals (Geurts and Huitink 2006, Zeijlstra 2007), focus operator 'only' (Quek and Hirsch 2017, Sun 2021), distributive operators (Oh 2006, Rushiti 2019), *wh*-elements (Kratzer 2005, Kinjo and Oseki 2016), existential quantifiers (Kratzer and Shimoyama 2002, Kratzer 2005), etc. However, little has been said to whether universal quantifiers also allow such concord patterns (for rare exceptions, see Dong 2009, Tsai 2015).

Providing novel evidence from Cantonese, this paper argues that universal concord is attested and offers a syntactic agreement account. In Cantonese, the verbal suffix *-can* is linked to a universal reading similar to 'every time/ whenever' and has been argued to be a universal quantifier over events/situations (Tang 2015, Lee 2017), as in (2a)-(2b).¹ Notably, doubling is allowed for *-can* with other universal quantifiers, as exemplified in (2c). Importantly, (2c) shares the same truth condition with the other two sentences, i.e. they are true if and only if Ming's tummy feels odd every time he drinks milk. Doubling of *-can* with universal quantifiers instantiates a case of universal concord.

(2) Universal concord in Cantonese: doubling of *-can* with universal quantifiers

- a. Aaming jam[-can] naai, go tou zau tung.
Ming drink-CAN milk CL stomach then ache
'Every time/ whenever Ming drinks milk, his tummy feels odd.'
- b. Aaming **mui-ci** jam naai, go tou zau tung.
Ming every-time drink milk CL stomach then ache
'Every time Ming drinks milk, his tummy feels odd.'
- c. Aaming **mui-ci** jam[-can] naai, go tou zau tung.
Ming every-time drink-CAN milk CL stomach then ache
'Every time Ming drinks milk, his tummy feels odd.'

Departing from Tang (2015) and Lee (2017), I argue that *-can* is a concord element that agrees with a universal quantifier. Specifically, I propose that *-can* bears an uninterpretable universal feature [*u*∇] which needs to be valued by an interpretable counterpart [*i*∇] on a universal quantifier like *mui-ci* 'every time' through Agree in Narrow Syntax. The feature on *-can* is deleted before

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¹Abbreviations: 1,2,3=first, second, third person respectively; CL=classifier; COP=copula; LOC=locative marker; MOD=modification marker; NEG=negation; PERF=perfective aspect marker; PL=plural; SFP=sentence-final particle; SG=singular; TOP=topic marker.

Transfer to the Logical Form (LF), and thus is not mapped onto logical universal quantification in semantics. In other words, *-can* is semantically vacuous and is not a quantifier at all. It is the genuine universal quantifier *mui-ci* that is mapped onto universal quantification. Hence, the composition of truth-conditional meaning in doubling cases like (2c) proceeds just as (2b) where *-can* is absent. Under this approach, there is no syntax-semantics mismatch in the doubling cases. For cases where no overt universal quantifier is present (=2a), I suggest that there is a covert necessity operator (OP_{\forall}) which contributes the universal force and agrees with *-can*.

This study has two implications. On the empirical side, that universal concord is attested in Cantonese extends the landscape of concord to universal elements and enriches the typology of concord. On the theoretical side, it provides further support to a syntactic agreement approach to concord. There has been a debate concerning whether concord is syntactic in nature (Zeijlstra 2004, 2008, Watanabe 2004, Haegeman and Lohndal 2010) or semantic in nature (Ladusaw 1992, Giannakidou 2000, de Swart and Sag 2002), where locality constraints are often taken to be a major argument for a syntactic approach. Minimality effects (also known as intervention effects), however, have not been extensively discussed in the literature (Haegeman and Lohndal 2010). This study explores how minimality effects may constitute crucial evidence for an agreement analysis and consequently support a syntactic approach to concord.

This paper is organized as follows. Section 2 presents the paradigm of universal concord in Cantonese in detail. Section 3 spells out the proposal of syntactic agreement and argues for the lack of quantificational force on *-can*. Section 4 explores the consequences of minimality effects and locality constraints on a syntactic agreement approach. Section 5 concludes with discussions on other potential candidates of universal concord.

2 Universal concord in Cantonese

The section provides further properties of universal concord in Cantonese. Consider sentences with only *-can* first. These sentences always come with a universal reading. Put differently, *-can* always occurs in sentences with a universal quantificational tripartite structure, specifically in the restrictor clauses. For instance, (2a) (repeated in (3a)) expresses universal quantification over events with the semantic value in (3b), following the semantics for *every time* in Rothstein (1995). (3b) reads as: for every event *e*, if *e* is a Ming-drinking-milk event, there exists an event *e'* such that *e'* is a Ming's-stomach-aching event and *e'* is mapped onto *e* by a matching function *M*.

- (3) a. Aaming jam[-can] naai, go tou zau tung.
Ming drink-CAN milk CL stomach then ache
'Every time/ whenever Ming drinks milk, his tummy feels odd.'
- b. $\forall e[[\text{DRINK}(e) \wedge \text{AG}(e) = \text{Ming} \wedge \text{TH}(e) = \text{milk}]$
 $\rightarrow \exists e'[\text{ACHE}(e') \wedge \text{TH}(e') = \text{Ming's stomach} \wedge M(e') = e]$

The tests in (4) show that a universal reading is obligatory in *-can* sentences:

- (4) Obligatory universal reading
- a. *Lack of quantificational variability effects:*
[Aaming jam[-can] naai] go tou {**dou/ gang/ *gaan-m-zung/ *honang**} tung.
Ming drink-CAN milk CL st. DOU/ must/ sometimes/ be.possible ache
'Every time Ming drinks milk, his tummy feels old.'
Not: 'If Ming drinks milk, his tummy sometimes/may feel(s) old.'
- b. *Incompatibility with existential quantifiers:*
*[Aaming **jau jat-ci** jam[-can] naai] go tou zau tung.
Ming have one-time drink-CAN milk CL stomach then ache
Int.: 'There was once that Ming drank milk and his tummy felt odd.'
- c. *'Almost' test:*
Caa-m-do [Aaming jam[-can] naai] go tou dou tung.
almost Ming drink-CAN milk CL stomach DOU ache
'Almost every time Ming drinks milk, his tummy feels odd.'

First, the restrictor clauses with *-can* differ from *if*-clauses in not allowing quantificational variability effects. In (4a), while a distributor *dou* or a necessity modal may occur in the second clause, adverbs of quantification like ‘sometimes’ or a possibility modal cannot occur to yield an existential reading.² Second, *-can* clauses are also incompatible with an existential quantifier over events like *jau jat-ci* ‘there is once’ in (4b). Third, *caa-m-do* ‘almost’ modification, as a diagnostic for universal quantifiers (see Giannakidou 1998 for discussions), is allowed for *-can* clauses in (4c). They all point to a close relation between *-can* and universal quantification.

Furthermore, sentences with *-can* may also convey universal quantification over individuals when *-can* is embedded in a relative clause of a complex NP. (5) means that for every individual *x*, if *x* is a country and there exists an event of Ming visiting *x*, *x* is chaotic. Again, the complex NP containing *-can* is incompatible with an existential quantifier over individuals like *jau go* ‘some’.

- (5) a. [(**jau go*) [_{RC} Aaming heoi(-can) *t_i*] ge gwokgaa_{*i*}] (*dou*) hou lyun.
 have CL Ming go-CAN MOD country DOU very chaotic
 ‘Every/*some country which Ming visited is in chaos.’
 b. $\forall x[[\text{COUNTRY}(x) \wedge \exists e[\text{VISIT}(e) \wedge \text{AG}(e) = \text{Ming} \wedge \text{TH}(e) = x]] \rightarrow \text{CHAOTIC}(x)]$

Now consider cases with doubling. We have seen that *-can* may co-occur with a universal quantifier like *mui-ci* ‘every time’ without affecting the truth conditions. (6) gives two more universal quantifiers *ziju* ‘(lit.) only if, whenever’ (over possible worlds) and *mui-go* ‘every’ (over individuals). Unlike *-can*, however, other universal quantifiers cannot occur together while preserving the truth conditions. In (6), replacing *-can* with another universal quantifier simply makes the sentences crash:

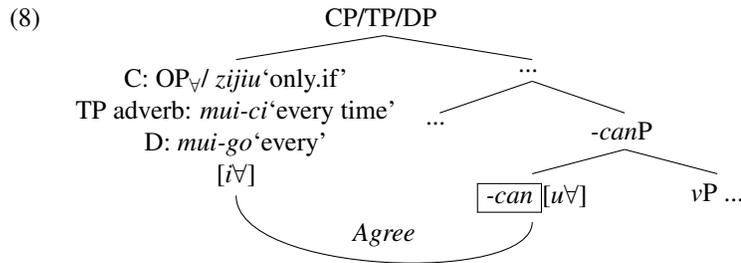
- (6) Doubling of universal quantifiers (UQs)
 a. ^{OK}[_{CP} UQ ... *-can*] vs. ^{*}[_{CP} UQ ... UQ]:
 [*Ziju* Aaming (**mui-ci*) jam(-can) naai], go tou zau tung.
 only.if Ming every-time drink-CAN milk CL stomach then ache
 ‘Whenever (*every time) Ming drinks milk, his tummy feels odd.’
 b. ^{OK}[_{DP} UQ [_{RC} ... *-can*]] vs. ^{*}[_{DP} UQ [_{RC} ... UQ]]:
 [*Mui-go* [_{RC} Aaming (**mui-ci*) heoi(-can) *t_i*] ge gwokgaa_{*i*}] dou hou lyun.
 every-CL Ming every-time go-CAN MOD country DOU very chaotic
 ‘Every country which (*every time) Ming visited is in chaos.’

Taking stock, universal concord with *-can* has two major properties, namely obligatory universal reading and doubling with other universal quantifiers, generalized below:

- (7) Generalization of universal concord with *-can*
 a. Obligatoriness: Sentences with *-can* always come with universal quantification.
 b. Doubling: *-Can* may co-occur with a universal quantifier without changing the truth condition of a sentence.

3 Universal concord as syntactic agreement

This section outlines the proposal of universal concord as syntactic agreement, diagrammed below:



²The nature of *dou* in Chinese is debatable and interested readers may refer to Xiang (2020) and references therein. For simplicity, I assume *dou* as a distributive operator. Also note that Dong (2009) and Tsai (2015) argue *dou* and *mei* ‘every’ in Mandarin to be a case of universal concord, which will be addressed in Section 5.

The proposal contains two components. The first component is the featural set-up. I propose that *-can* bears an uninterpretable universal feature [$u\forall$]; and that genuine universal quantifiers bear an interpretable universal feature [$i\forall$], including *ziji* ‘only.if’, *mui-ci* ‘every time’, *mui-go* ‘every’, and a covert necessity operator (OP_{\forall} , to be discussed below). This universal feature is comparable with the one proposed by Beghelli and Stowell (1997) ([+Univ]). The second component is the Agree relation between *-can* and a universal quantifier following from the featural set-up: the uninterpretable [$u\forall$] on *-can* needs to be deleted before Transfer to the Logical Form (LF) for Full Interpretation, which is achieved by valuation by an interpretable counterpart through Agree.

The generalization in (7) falls out naturally from this proposal. Since *-can* must agree with a universal quantifier to delete the uninterpretable [$u\forall$], sentences with *-can* always have a universal quantifier (which may be overt or covert) that is mapped onto universal quantification in the LF (i.e. obligatoriness). This also explains why *-can* may occur together with other universal quantifiers without changing the truth conditions (i.e. doubling). The feature on *-can* is deleted before entering the LF and thus *-can* is never mapped onto universal quantification. That is, *-can* is semantically vacuous and is not a quantifier at all, and hence has no effect on the truth conditions.

The rest of this section presents arguments for the lack of quantificational force on *-can* (=Section 3.1) and for the existence of the covert necessity operator (=Section 3.2).

3.1 The lack of quantificational force on *-can*

One piece of evidence for the lack of quantificational force on *-can* comes from the ‘almost’ test (Giannakidou 1998). In (9a), *caa-m-do* ‘almost’ modification is allowed for a genuine universal quantifier *mui-ci* ‘every time’. In contrast, ‘almost’ is not allowed for *-can* in (9b), showing that *-can* does not carry universal quantificational force. Note that if ‘almost’ immediately precedes and directly modifies *mui-ci*, *-can* is compatible with ‘almost’ in (9c). Hence, the failure of ‘almost’ modification in (9b) is solely due to the lack of universal force on *-can*.

(9) ‘Almost’ test

- a. [keoi **caa-m-do** mui-ci daa gei] ne, aamaa dou wui faatnau
3SG almost every-time play video.game TOP mum DOU will become.mad
‘Almost every time he plays video games, his mum gets angry.’
- b. *[keoi **caa-m-do** daa -can gei] ne, aamaa dou wui faatnau
3SG almost play-CAN vdo.game TOP mum DOU will become.mad
Int.: ‘Almost every time he plays video games, his mum gets angry.’
- c. [keoi (**caa-m-do**) mui-ci (***caa-m-do**) daa -can gei] ne, aamaa dou wui faatnau
3SG almost every-t. almost play-CAN v.g. TOP mum DOU will b.mad
‘Almost every time he plays video games, his mum gets angry.’

Another argument is from the scopal behavior of *-can*. In an embedding structure like (10), the universal quantifier always takes wide scope over the whole structure and quantifies over the forcing events in the upper clause rather than the talking events in the lower clause. While *mui-ci* ‘every time’ can only occur in the upper clause for surface scope, *-can* may occur in both upper and lower clauses. Crucially, even when *-can* is attached to the lower verb ‘talk’, the universal quantification still has wide scope over the higher verb ‘force’. In other words, the position of *-can* is not indicative of the universal scope. This apparent scopal mismatch can be explained if *-can* does not bear quantificational force at all, and it is the covert necessity operator that is responsible for the universal force and scope in (10b). We turn to this covert necessity operator in the next subsection.

(10) Scopal mismatch

- a. Ngo [(**mui-ci**) bik keoi [(***mui-ci**) king gai]], keoi zau zing-saai. (\forall >force)
1SG every-time force 3SG every-time talk chat 3SG then quiet-ALL
‘Every time I forced him to talk (with me), he became silent.’
- b. Ngo [bik (-can) keoi [king (-can) gai]], keoi zau zing-saai. (\forall >force)
1SG force 3SG talk-CAN chat 3SG then quiet-ALL
‘Every time I forced him to talk (with me), he became silent.’

3.2 The covert necessity operator

Following Cheng and Huang (1996), Kratzer and Shimoyama (2002), and Kratzer (2005), I suggest that there is a covert necessity operator (OP_{\forall}) at the CP level which contributes universal quantification in sentences with *-can* only. This covert OP_{\forall} is independently motivated by bare conditionals in Mandarin, where two *wh*-indefinites are bound by a null universal quantifier and co-vary in (11). Notably, the OP_{\forall} is high enough to bind the *wh*-indefinites in both clauses, presumably at CP.

- (11) a. **Shei** xian lai, **shei** xian chi. (Mandarin, Cheng and Huang 1996:127)
 who first come who first eat
 ‘If x comes first, x eats first.’
 b. $\forall x[\text{COME.FIRST}(x) \rightarrow \text{EAT.FIRST}(x)]$

This sentential covert OP_{\forall} can also be found in Cantonese, as in the bare conditional in (12).

- (12) OP_{\forall} [**bingo** lai sin, (zau) **bingo** sik sin].
 who come first then who eat first
 ‘If x comes first, x eats first.’

The presence of the covert OP_{\forall} in *-can* sentences can be confirmed by ‘almost’ modification when ‘almost’ is placed before the whole *-can* clause, as discussed in Section 2 (*cf.* (4c)). Since the OP_{\forall} is always high in the structure, a lower post-subject ‘almost’ in (9b) above would not be able to modify the OP_{\forall} (nor it could modify *-can*), resulting in ungrammaticality.

One additional support for the OP_{\forall} comes from the distribution of aspectual verbs. Cantonese aspectual verbs like *hoici* ‘begin’ may exceptionally move to a clause-initial position, but only if there is a quantificational element on the movement path (Lee 2019), as illustrated by the contrast between a universal quantifier and a non-quantificational definite DP on the topic position in (13):

- (13) **Hoici**_i [[{cyunbou jan/ *ni go jan} Aaming (dou) [_i hou jansoeng]].
 begin every person this CL person Ming DOU very praise
 ‘It begins to be the case that Ming praises everyone/ *this person.’ (Lee 2021:4)

Notably, the movement of *hoici* may also be licensed by crossing a *-can* clause, as shown in (14). This supports the presence of a quantificational element in *-can* clauses, i.e. the covert OP_{\forall} .

- (14) **Hoici**_i [[OP_{\forall} keoi daa -can gei] aamaa [_i zau wui faatnau]].
 begin 3SG play-CAN video.game mum then will become.mad
 ‘It begins to be the case that every time he plays video games, his mum gets angry.’

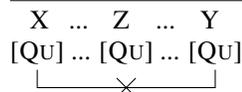
4 Minimality and locality in universal concord

The previous section proposes that universal concord is essentially syntactic agreement between *-can* and universal quantifiers. Universal concord is thus predicted to obey constraints on minimality and locality, two characteristic features of syntactic dependencies. The following two subsections will show that both predictions on minimality and locality are borne out, respectively.

4.1 Minimality effects

I adopt Rizzi (2001, 2004)’s feature-based Relativized Minimality (RM) to formulate minimality. RM dictates that a dependency between X and Y is in a minimal configuration iff there is no Z such that Z carries the same feature with X and Y, and that Z c-commands Y and is c-commanded by X (i.e. intervenes between X & Y). Minimality/intervention effects arise if X and Y are not in a minimal configuration, as illustrated in (15). The relevant feature here is [QU], a super-feature shared by quantificational elements (e.g. negation [NEG] and focus [FOC] are covered by [QU]).

- (15) Feature-based Relativized Minimality (RM) (Rizzi 2001, 2004)



In Chinese (Cantonese and Mandarin), elements that carry the super-feature [QU] are quantifiers (e.g. existential quantifier ‘someone’), negation, focus operators (e.g. ‘only’), modals (e.g. ‘must’), and adverbs of quantification (e.g. ‘often’). Their [QU]-feature is independently motivated by the minimality effects they triggered on two syntactic dependencies, A-not-A questions and *why*-questions (Wu 1997, Law 2001, Soh 2005, Tsai and Yang 2015). Note that this set of elements is language-specific. For instance, while all the *wh*-elements in English carry [QU], only *wh*-adverbs (‘why’ and ‘how’) carry [QU] in Chinese. *Wh*-nominals like ‘who’ are variables and do not bear [QU] in Chinese (Tsai 1994, 1999). Other examples of elements without [QU] include locative adverbials (e.g. ‘on the subway’) and temporal adverbials (e.g. ‘today’) (Ernst 1994).

Assuming that the universal feature [V] is a quantificational feature, the set of [QU] elements mentioned above is predicted to induce minimality effects to universal concord. Precisely, they will disrupt the agreement between *-can* and universal quantifiers and cannot intervene between them. Non-quantificational elements, in contrast, do not bear [QU] and should be able to occur in between them. This prediction is schematized in (16).³

- (16) Prediction from RM: elements with [QU]-feature cannot intervene between a UQ and *-can*
- a. * ... UQ_[iV] ... quantifiers/ negation/ focus/ modals/ Q-adv_[QU] ... *-can*_[uV] ...
- ⏟
×
- b. ... UQ_[iV] ... locatives /temporals/ *wh*-nominals_[] ... *-can*_[uV] ...
- ⏟

First, this prediction is borne out for quantifiers. In (17), both existential quantifier and negative quantifier cannot occur in between *-can* and the universal quantifier *ziju* ‘only.if’. Note that these quantifiers are semantically compatible with *ziju* and are allowed if *-can* is removed, showing that the ungrammaticality is due to their disruption on the agreement of *-can* with *ziju*.

- (17) Minimality effects induced by quantifiers

[*Ziju* **jau jan/ mou jan** lai man(*-*can*) je] keoi zau baan fan.
 only.if have person no person come ask-CAN stuff 3SG then pretend sleep
 ‘Whenever someone/no one asks him for something, he will pretend to be asleep.’

Second, negation also conforms to the prediction. (18) shows that an intervening negation between *-can* and *mui-ci* ‘every time’ is not possible. Again, negation is allowed if *-can* is absent.

- (18) Minimality effects induced by negation

Keoi [mui-ci **mou** daai(*-*can*) syu] dou wui bei jan naau.
 3SG every-time NEG.PERF bring-CAN book DOU will get person scold
 ‘Every time he doesn’t bring the book, he will get scolded.’

Third, focus operators also induce minimality effects to universal concord, including exclusive focus operator *zinghai/dak* ‘only’, additive focus operator *lin* ‘even’, and contrastive focus operator *hai* ‘be’. (19) illustrates this with *zinghai* ‘only’ intervening between *-can* and *mui-ci* ‘every time’.

- (19) Minimality effects induced by focus operators

[mui-ci **zinghai** keoi jung(*-*can*) gaan fong go-zan] gaan fong dou hou zing.
 every-time only 3SG use-CAN CL room that-mo. CL room DOU very quiet
 ‘Every time he is the only person using the room, the room is quiet.’

Fourth, the prediction is borne out for modals as well. For example, a deontic modal *jinggoi* ‘should’ is not allowed between *-can* and *mui-ci* ‘every time’ in (20), showing minimality effects. The same is true for epistemic modals and dynamic modals.

- (20) Minimality effects induced by modals

Keoi [mui-ci **jinggoi** heoi zou(*-*can*) je go-zan] zau mou-zo jing.
 3SG every-time should go do-CAN stuff that-mo. then have.no-PERF shadow
 ‘Every time when he should go to work, he disappears.’

³While A-not-A operator, ‘why’, and ‘how’ also carry [QU], they cannot occur in *-can* clauses due to independent reasons. As question operators, they are required to move (covertly) to the matrix CP, whereas *-can* is either in adjunct islands (=2a) or complex NP islands (=5) which block the operator movement.

Last but not least, adverbs of quantification also induce minimality effects, as shown in (21). *Gingsoeng* ‘often’ cannot occur between *-can* in a relative clause and *mui-go* ‘every’.

(21) Minimality effects induced by adverbs of quantification

[Mui-go [RC Aaming **gingsoeng** heoi(^{*}*-can*) *t_i*] ge gwokgaa_i] dou hou lyun.
 every-CL Ming often go-CAN MOD country DOU very chaotic
 ‘Every country Ming has often visited is in chaos.’

We have seen from the above that quantificational elements with [QU] induce minimality effects to universal concord. Non-quantificational elements, in contrast, lack such a feature and the agreement of *-can* with universal quantifiers remains in a minimal configuration even when these elements are present. (22) confirms this prediction for locative adverbials, temporal adverbials, and *wh*-nominals:

(22) No minimality effects induced by non-quantificational elements

- a. [Mui-ci **hai deitit-dou** king(*-can*) dinwaa] dou bei jan naau. (loc.adv.)
 every-time at subway-LOC talk-CAN telephone DOU get person scold
 ‘Every time (I) has a call on the subway, I get scolded.’
- b. [Zijiu **ziuzou** jam(*-can*) naai] zau toutung. (temporal adverbials)
 only.if morning drink-CAN milk then stomachache
 ‘Whenever (I) drink milk in the morning, my tummy feel odd.’
- c. [Zijiu **bingo** fan(*-can*) gaau] lousi zau wui naau? (*wh*-nominals)
 only.if who sleep-CAN nap teacher then will scold
 ‘Who is the person that teacher will scold at him whenever he sleeps?’

In short, universal concord with *-can* is subject to minimality, and hence supports the syntactic agreement analysis. Table 1 summarises the minimality effects in universal concord.

Intervening elements	With [QU]-feature?	Minimality effects?	Examples
Quantifiers	YES	YES	(17)
Negation	YES	YES	(18)
Focus operators	YES	YES	(19)
Modals	YES	YES	(20)
Adverbs of quantification	YES	YES	(21)
Locative adverbials	NO	NO	(22a)
Temporal adverbials	NO	NO	(22b)
<i>Wh</i> -nominals	NO	NO	(22c)

Table 1: Minimality effects in universal concord

4.2 Locality constraints

Locality is another important feature of syntactic dependencies. In the Minimalist Program, locality is captured by the notion phase, which is a domain that determines the point of Transfer to interfaces and regulates the accessibility of materials within the domain. Typical phases include CP, vP and DP. Following the Phase Impenetrability Condition (PIC) in Chomsky (2001), the complement of a phase is not accessible to syntactic operations beyond a higher phase head, formalized below:

(23) Phase Impenetrability Condition (PIC) (Chomsky 2001)

[ZP ... Z [XP X ... [HP α [H YP]]]];

where Z and H are phase heads, and YP is visible to operations in XP but not ZP.

In the case of universal concord, the PIC predicts that the agreement of *-can* in YP with universal quantifiers is only possible if they are not separated by a higher phase head Z in (23). In other words, *-can* becomes inaccessible to a universal quantifier across two phasal boundaries (or more precisely, across two phase heads). (24) provides two predicted licit and illicit configurations:

(24) Prediction from PIC: *-can* cannot agree with a UQ across two phasal boundaries

- a. *UQ_[iV] [_{phase1} ... [_{phase2} ... [*-can*_[uV] ...
- X
- b. UQ_[iV] [_{phase1} ... [*-can*_[uV] ...

This prediction is borne out in (25). In (a), *-can* is embedded in the finite CP complement of ‘say’ and agrees with *mui-ci* ‘every time’ in the upper clause across the lower CP and the upper vP boundaries. The agreement, however, violates the PIC by crossing two phasal boundaries and is banned. On the other hand, both (b) and (c) observes the PIC and agreement is possible. In (b), *-can* is embedded in the non-finite TP complement of ‘force’ (cf. Huang 2017), agreeing with *mui-ci* across the lower TP and vP boundaries. Since TP is not a phase, the agreement is licit. In (c), *-can* agrees with *mui-go* ‘every’ across the CP boundary of a relative clause, which obeys the PIC since only one phasal boundaries (or phase head) is crossed.

(25) Locality constraints of universal concord

- a. *PIC violation (24a) with vP and CP phasal boundaries:*
 *Ngo mui-ci [_{vP} gong [_{CP} waa keoi king[-can] gai], keoi zau sauseng.
 1SG every.time say C 3SG talk-CAN chat 3SG then shut.up
 Int.: ‘Every time I said that he had a chat, he became silent.’
- b. *PIC compliance (24b) with a vP phasal boundary:*
 Ngo mui-ci [_{vP} bik keoi [_{TP} king[-can] gai], keoi zau sauseng.
 1SG every.time force 3SG talk-CAN chat 3SG then shut.up
 ‘Every time I forced him to talk (with me), he became silent.’
- c. *PIC compliance (24b) with a CP phasal boundary:*
 [Mui-go [_{CP=RC} Aaming heoi[-can] *t_i*] ge gwokgaa_{*i*}] dou hou lyun.
 every-CL Ming go-CAN MOD country DOU very chaotic
 ‘Every country Ming visited is in chaos.’

Before ending this section, it is instructive to see how the agreement of *-can* differs from a semantic dependency, NPI-licensing, with respect to minimality and locality. *Jamho* ‘any’ is an NPI in Cantonese that occurs in downward entailing contexts. Unlike *-can*, *jamho* may be licensed by negation with an intervening deontic modal in (26), violating RM:

(26) RM violation in NPI licensing

- Ngo *(m-)gokdak [keoi **jinggoi** sik **jamho** zinzaa-je].
 1SG NEG-think 3SG should eat any fried-food
 ‘I don’t think he should eat any junk food.’

Long-distance NPI-licensing of *jamho* in (27) also violates the PIC by crossing two phasal boundaries DP and CP (also vP and CP boundaries in (26)). Note that (27) additionally violates island constraints, where *jamho* within a complex NP island is licensed by a matrix negation.

(27) PIC/island violation in NPI licensing

- Ngo *(m-)zungji [_{DP} [_{CP} **jamho** zokgaa se] ge syu].
 1SG NEG-like any writer write MOD book
 ‘I don’t like books written by any writers (lit.: books which any writer writes).’

We now see that a semantic dependency like NPI-licensing contrasts with the agreement of *-can* that exhibits strict minimality and locality. This contrast also suggests that *-can* should not be treated as a free-choice item containing a variable licensed by an operator semantically, an alternative analysis proposed recently by Sio (2020).

5 Concluding remarks

To conclude, this paper instantiates a case of universal concord in Cantonese, where the verbal suffix *-can* may be doubled with an overt or covert universal quantifier. *-Can* is shown to be a concord element that lacks quantificational force. Providing crucial evidence from minimality and

locality, this paper motivates a syntactic agreement account to universal concord. Consequently, the empirical landscape of concord is broadened through attesting concord of universal quantifiers. Moreover, this study also offers additional support for a syntactic approach to concord by exploring minimality effects, a less discussed kind of evidence in the literature.

As a remark, Dong (2009) and Tsai (2015) also suggest a case of universal concord in Mandarin. It is well known that Mandarin D-quantifier *mei(-ge)* ‘every’, when occurring in the subject position, requires the presence of the distributor *dou*:

- (28) **Mei** ge ren *(**dou**) mai-le shu. (Mandarin, Lin 1998:219)
 every CL man DOU buy-PERF book
 ‘Everyone bought a book.’

Dong (2009) and Tsai (2015) argue that *mei* is a concord marker that agrees with a universal quantifier. While it is attractive to treat *mei* parallel to *-can* in Cantonese, *mei* differs from *-can* in having quantificational force, as evidenced by the availability of ‘almost’ modification:

- (29) **Jihu** mei ge ren dou mai-le shu.
 almost every CL man DOU buy-PERF book
 ‘Almost everyone bought a book.’

Hence, whether *mei* qualifies a case of universal concord like *-can* or a different kind of concord is not immediately clear. A separate occasion, however, must be awaited for justifications and discussions.

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