

Universal Concord as Syntactic Agreement

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1 Introduction

Concord among quantificational elements represents a case of apparent syntax-semantics mismatch, e.g. doubling negative expressions with one logical negation in negative concord (Labov 1972; Zanuttini 1991; Haegeman and Zanuttini 1991; Zeijlstra 2004):

(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.’ (NC reading); Not: ‘Gianni hasn’t seen nothing.’ (DN reading)

On the theoretical side, this apparent mismatch is problematic to the Principle of Compositionality (Frege 1892). While any adequate account must include a semantic component to resolve the compositionality problem, previous proposals differ in the understanding of *the licensing of concord elements* (e.g. n-words).¹

- (2) a. The licensing of concord elements is syntactic (e.g. agreement)
 Zeijlstra (2004, 2008), Watanabe (2004), and Haegeman and Lohndal (2010), etc.
 b. The licensing of concord elements is semantic (e.g. PI licensing, unselective binding, absorption)
 Ladusaw (1992), Giannakidou (2000), and Swart and Sag (2002), etc.

On the empirical side, concord is found cross-linguistically among various quantificational elements:

- (3) Concord among quantificational elements
- a. Negation (Labov 1972; Zanuttini 1991; Haegeman and Zanuttini 1991; Zeijlstra 2004)
 - b. Modals (Geurts and Huitink 2006; Zeijlstra 2007)
 - c. Focus operator ‘only’ (Y. Lee 2005; Hole 2017; Quek and Hirsch 2017; Sun 2021)
 - d. Distributive operators (Oh 2006; Cable 2014; Rushiti 2019)
 - e. *Wh*-elements (Kratzer 2005b; Kinjo and Oseki 2016)
 - f. Existential quantifiers (Kratzer and Shimoyama 2002; Kratzer 2005b)

However, little has been said to whether universal quantifiers also allow such concord patterns (for rare exceptions, see Dong 2009; C.-y. E. Tsai 2015).

• Universal concord in Cantonese

In Cantonese, the verbal suffix *-can* (IPA: [ts^hɛn⁵⁵]) 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; P. P.-I. Lee 2017), as in (4a)-(4b).² Notably, doubling is allowed for *-can* with other universal quantifiers in (4c), which, importantly, shares the same truth condition with the other two sentences.

¹Note that they are not mutually exclusive - for example, Haegeman and Zanuttini (1991) includes both syntactic Spec-head agreement and semantic absorption.

²Abbreviations: 1,2,3=first, second, third person respectively; CL=classifier; COP=copula; EXP=experiential aspect; FOC=focus marker; IMPV=imperfective aspect; IND=indicative mood; LOC=locative marker; MOD=modification marker; NEG=negation; PERF=perfective aspect; PL=plural; PRS=present tense; PST=past tense; SFP=sentence-final particle; SG=singular; SUBJ=subjective mood; TOP=topic marker.

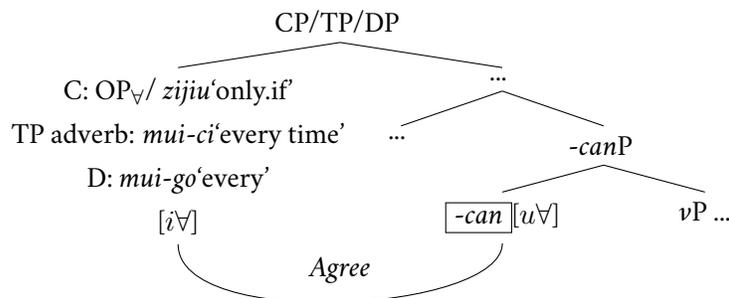
(4) Universal concord in Cantonese: doubling of *-can* with universal quantifiers

- 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.'

• **Overview**(5) Today's goals

- a. To show that universal concord is attested in Cantonese;
- b. To argue that *-can* is a concord element that agrees with a universal quantifier syntactically (i.e. *-can* is not a genuine quantifier, *pace* Tang 2015 & P. P.-I. Lee 2017);
- c. Provide less discussed evidence from minimality effects to support a syntactic approach to concord.

(6)



- (7) a. *-Can* bears an uninterpretable universal feature and lacks quantificational force (hence no truth-conditional difference between (4c) vs. (4b)).
- b. *-Can* agrees with a universal quantifier which may be covert (hence (4a) has a universal reading).
- c. The Agree relation is subject to minimality and locality .

• **Road map**

- §2: Properties of universal concord in Cantonese §5: Beyond Cantonese: *mei...dou* in Mandarin
- §3: Proposal: syntactic agreement §6: Conclusion and remarks on negative concord
- §4: Minimality and locality in universal concord

2 Universal concord in Cantonese

• Obligatory universal reading

Sentences with *-can* always come with a universal reading. Put differently, *-can* always occurs in sentences with a universal quantificational tripartite structure, specifically in the restrictor clauses.

Universal quantification over events. (8a) quantifies over events: 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 (following the semantics of *every time* in Rothstein 1995).

(8) Universal quantification over events

- 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. $\forall e[[\text{DRINK}(e) \wedge \text{AG}(e) = \text{Ming} \wedge \text{TH}(e) = \text{milk}]$
 $\rightarrow \exists e'[\text{ACHE}(e') \wedge \text{TH}(e') = \text{Ming's stomach} \wedge M(e') = e]$

A universal reading is obligatory in *-can* sentences. First, the restrictor clauses with *-can* do not allow quantificational variability effects, differing from *if*-clauses. In (9), while a distributor *dou* or a necessity modal is allowed, adverbs of quantification like 'sometimes' or a possibility modal is not.³

(9) Lack of quantificational variability effects

- [Aaming jam[-can] naai] go tou {**dou/ gang/ *gaan-m-zung/ *honang**} tung.
Ming drink-CAN milk CL stomach 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.'

(10) **If** a man owns a donkey, he {**always/ usually/ sometimes/ might/ must**} beat(s) it.

Second, *-can* clauses are also incompatible with an existential quantifier over events like *jau jat-ci* 'there is once' in (11).

(11) 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.'

Third, *caa-m-do* 'almost' modification, as a diagnostic for universal quantifiers (Dahl:1970; Horn 1972; Giannakidou 1998), is allowed for *-can* clauses in (13).

(12) Electra was willing to accept **almost** everything/*something. (Giannakidou 1998:64)

³The 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 C.-y. E. Tsai (2015) argue *dou* and *mei(-ge)* 'every' in Mandarin to be a case of universal concord, which will be addressed in Section 6.

(13) 'Almost' modification

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.'

Universal quantification over individuals. Furthermore, quantification over individuals may also be achieved by embedding *-can* in a relative clause of a complex NP. (14) means that for every individual *x*, if *x* is a country and there exists an event of Ming visiting *x*, *x* is chaotic.

(14) Universal quantification over individuals

- a. [[_{RC} Aaming heoi -can t_i] ge gwokgaa_i] dou hou lyun.
 Ming go-CAN MOD country DOU very chaotic
 'Every country which Ming visited is in chaos.'
- b. $\forall x[[\text{COUNTRY}(x) \wedge \exists e[\text{VISIT}(e) \wedge \text{AG}(e) = \text{Ming} \wedge \text{TH}(e) = x]] \rightarrow \text{CHAOTIC}(x)]$

Again, the complex NP containing *-can* is incompatible with an existential quantifier over individuals like *jau go* 'some'.

- (15) ***[jau go** [_{RC} Aaming heoi -can t_i] ge gwokgaa_i] hou lyun.
 have CL Ming go-CAN MOD country very chaotic
 Int.: 'Some country which Ming visited is in chaos.'

A naturally occurring example of universal quantification over individuals:

- (16) [[_{RC} Zungji -can t_i] ge neoizai_i] dou hai daai-gwo ngo ge zeze.
 like-CAN MOD girl DOU COP older.than 1SG MOD sister
 'Every girl that (I) like is older than me.' (From [Internet](#), 6/5/2018)

• Doubling with other universal quantifiers

-Can may co-occur with a universal quantifier *mui-ci* 'every time' without affecting the truth conditions.⁴

(18) Doubling of *-can* with universal quantifiers

- a. 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.' (=8a)
- b. $\forall e[[\text{DRINK}(e) \wedge \text{AG}(e) = \text{Ming} \wedge \text{TH}(e) = \text{milk}]$
 $\rightarrow \exists e'[\text{ACHE}(e') \wedge \text{TH}(e') = \text{Ming}'s \text{ stomach} \wedge M(e') = e]]$ (=8b)

⁴Multiple *-can* are also allowed:

- (17) [Aaming **mui-ci** jam -can naai sik -can saanglaangje] go tou dou wui tung gaa.
 Ming every-time drink-CAN milk eat-CAN cold.food CL stomach DOU will ache SFP
 'Every time Ming drinks milk or eats cold food, his tummy feels old.'

Doubling of *-can* with other universal quantifiers *ziju* ‘(lit.) only if, whenever’ (over possible worlds) and *mui-go* ‘every’ (over individuals) are also allowed. Unlike *-can*, however, other universal quantifiers cannot be doubled. In (19), replacing *-can* with *mui-ci* ‘every time’ simply makes the sentences crash.

(19) Doubling of universal quantifiers (UQs)

- a. $OK_{[CP\ UQ\ \dots\ -can]}$ vs. $*_{[CP\ UQ\ \dots\ UQ]}$:
 [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\ \dots\ -can\]]}$ vs. $*_{[DP\ UQ\ [RC\ \dots\ 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.’

A legitimate sentence with two universal quantifiers would convey two universal quantification: one over individuals and another over events in (20). *Mui-go* ‘every’ here takes wide scope and its restrictor contains the universal quantification from *mui-ci* ‘every time’.

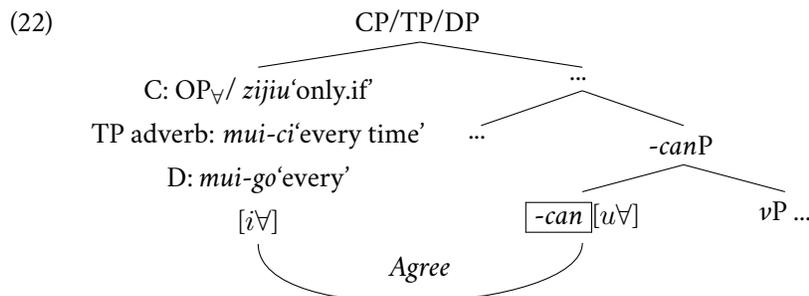
- (20) a. [Mui-go [RC t_i mui-ci ceot fong dou sik dang] ge jan $_i$] dou hai
 every-CL every-time exit room DOU turn.off light MOD person DOU COP
 waanboujansi.
 environmentalist
 ‘For every person x, if every time x leaves a room, x turns off the light, then x is an environmentalist.’
- b. $\forall x[[HUMAN(x) \wedge \forall e[[LEAVE.ROOM(e) \wedge AG(e) = x]$
 $\rightarrow \exists e'[TURN.OFF.LIGHT(e') \wedge AG(e') = x \wedge M(e') = e]]] \rightarrow ENVIRONMENTALIST(x)]$

Taking stock, universal concord with *-can* has two main properties:

(21) 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



(23) Proposal: syntactic agreement

- a. *Featural set-up*: *-can* bears an uninterpretable universal feature $[u\forall]$; and genuine universal quantifiers bear an interpretable universal feature $[i\forall]$. (cf. [+Univ] in Beghelli and Stowell 1997)
- b. *Agree*: *-can* agrees with universal quantifiers to value and delete $[u\forall]$ before Transfer to the Logical Form (LF) for Full Interpretation.

Deriving obligatoriness (21a). 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.

Deriving doubling (21b). The feature on *-can* is *uninterpretable* and will be deleted before entering the LF. Thus, *-can* is never mapped onto universal quantification. That is, *-can* is not a quantifier at all (possibly semantically vacuous), and hence has no effect on the truth conditions. In contrast, the feature on real universal quantifiers like *mui-ci* 'every time' is *interpretable* and they are mapped onto universal quantification in LF.

On the direction of Agree. The Probe *-can* is always c-commanded by the Goal (i.e. universal quantifiers). *-Can* fails to agree if it is not c-commanded by a universal quantifier:

- (24) *keoi [tung -can]_[u\forall] jan **mui-ci**_[i\forall] kinggai] zau zougauu
 3SG with-CAN person every-time chat then quarrel
 Int.: 'Every time he chats with someone, he has a quarrel (with that person).'

That is, *-can* agrees *upward* (cf. **Wurmbrand:2011**; Zeijlstra 2012; Bjorkman and Zeijlstra 2019).⁵

⁵Upward Agree has been applied in various empirical domains:

- (25)
- a. Negative concord (Zeijlstra 2004, 2008b, 2012, Haegeman & Lohndal 2010)
 - b. Inflection doubling (Wurmbrand 2012a,b, 2014, Bjorkman 2016)
 - c. (Strict) NPI licensing (den Dikken 2006, Chierchia 2013)
 - d. Anaphor binding (Reuland 2006, Hicks 2009)
 - e. Semantic agreement (Smith 2015)
 - f. Sequence of tense (Zeijlstra 2012)
 - g. Case assignment (Wurmbrand 2012c)
 - h. Polarity licensing (Polarity mismatches under ellipsis) (Merchant 2011)
 - i. Obligatory control (Wurmbrand 2011)
 - j. Existential concord (Kratzer & Shimoyama 2002, Kratzer 2005)
 - k. Phi-agreement (Bjorkman & Zeijlstra 2019)

3.1 The lack of quantificational force on *-can*

'Almost' modification. *Caa-m-do* 'almost' modification is allowed for a genuine universal quantifier *mui-ci* 'every time', but not *-can*, showing that *-can* does not carry universal quantificational force.

(26) 'Almost' modification

- 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 vdeo.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.'

Scopal behavior of -can. In an embedding structure like (27), 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. *Mui-ci* 'every time' can only occur in the upper clause for surface scope:⁶

- (27) Ngo [(**mui-ci**) bik keoi [(***mui-ci**) sik naapdau]], keoi zau haam. (∀ >force)
 1SG every-time force 3SG every-time eat natto 3SG then cry
 'Every time I forced him to eat natto (Japanese fermented beans), he cried.'

However, *-can* may occur in either the upper or the lower clause. 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.

(28) Scopal mismatch

- Ngo [bik(-can) keoi [sik(-can) naapdau]], keoi zau haam. (∀ >force)
 1SG force 3SG eat-CAN natto 3SG then cry
 'Every time I forced him to eat natto (Japanese fermented beans), he cried.'

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 (28).

3.2 The covert necessity operator

Following Cheng and Huang (1996) and Kratzer and Shimoyama (2002), and Kratzer (2005b), I suggest that there is a covert necessity operator (OP_{\forall}) at the CP level which contributes universal quantification in sentences

Also see Neeleman and van de Koot (2002), Adger (2003), von Stechow (2003, 2004, 2005, 2009), Baker (2008), Hicks (2009) and Grønn and von Stechow (2011).

⁶This may due to the Isomorphic Principle in Chinese which dedicates that the scope relation of quantifiers must align with their c-commanding relation, i.e. they always have surface scope (Huang 1982a).

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 (29). Notably, the OP_{\forall} is high enough to bind the *wh*-indefinites in both clauses, presumably at CP.

- (29) 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 (30).

- (30) OP_{\forall} [**bingo** lai sin, **bingo** sik sin].
 who come first 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. (13), repeated below). Since the OP_{\forall} is always high in the structure, a lower post-subject ‘almost’ in (26b) above would not be able to modify the OP_{\forall} (nor it could modify *-can*), resulting in ungrammaticality.

- (31) ‘Almost’ modification (= 13)
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.’

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 (T. T.-M. Lee 2019), as illustrated by the contrast between a universal quantifier and a non-quantificational definite DP on the topic position in (32):

- (32) **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.’ (T. T.-M. Lee 2021:4)

Notably, the movement of *hoici* may also be licensed by crossing a *-can* clause, as shown in (33). This supports the presence of a quantificational element in *-can* clauses, i.e. the covert OP_{\forall} .

- (33) **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

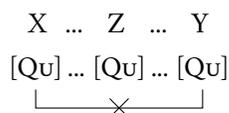
Universal concord with *-can*, as syntactic agreement, is predicted to obey constraints on minimality and locality, two characteristic features of syntactic dependencies.

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 (34).

The relevant feature here is [QU], a super-feature shared by quantificational elements (e.g. negation [NEG] and focus [FOC] are covered by [QU]).

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



In Chinese (Cantonese and Mandarin), elements that carry the super-feature [QU] are give in (35). 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).

(35) Elements with and without [QU]-features in Chinese (Cantonese and Mandarin)

- a. *With [QU]-features:*

(i.e. they all *trigger* minimality effects to A-not-A and *why* dependencies)

 - i. Negation (Soh 2005)
 - ii. Focus operators, e.g. 'only' (Soh 2005)
 - iii. Modals, e.g. 'must' (Tsai and Yang 2015)
 - iv. Quantifiers, e.g. 'no one' (Wu 1997; Law 2001)
 - v. Adverbs of quantification, e.g. 'often' (Law 2001; Soh 2005)
- b. *Without [QU]-features:*

(i.e. they all *do not* trigger minimality effects to A-not-A and *why* dependencies)

 - i. Locative adverbials, e.g. 'on the subway' (Ernst 1994)
 - ii. Temporal adverbials, e.g. 'today' (Ernst 1994)
 - iii. *Wh*-nominals, e.g. 'who' (Huang 1982b)

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 (W.-T. D. Tsai 1994, 1999).

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

(39) Minimality effects induced by focus operatorsa. *Intervening operator and intervening focus:*

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

b. *Intervening operator and non-intervening focus:*

[**mui-ci** keoi zinghai jung(^{*}-can) [_{VP} v-t_i NI GAAN FONG] go-zan] gaan fong
 every-time 3SG only use-CAN this CL room that-moment CL room
 dou hou zing.
 DOU very quiet

‘Every time that he was using only this room, the room was quiet.’

c. *Non-intervening operator and non-intervening focus:*

[**mui-ci** ngo kiu(-can) [_{TP} keoi zinghai jung NI GAAN FONG]] keoi dou m-zai.
 every-time 1SG ask 3SG use-CAN only this CL room 3SG DOU NEG-agree
 ‘Every time that I ask him to use only this room, he refused.’

• **Modals**

Third, 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 (40), showing minimality effects. The same is true for epistemic modals and dynamic modals.

(40) 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-moment then have.NO-PERF shadow
 ‘Every time when he should go to work, he disappears.’

• **Quantifiers**

Fourth, quantifiers also trigger minimality effects. In (41), both negative quantifier and existential quantifier cannot occur in between *-can* and the universal quantifier *ziju* ‘only.if.’⁸

(41) Minimality effects induced by quantifiers

- a. [**Ziju** mou hoksaang lai man(^{*}-can) je] keoi zau wui fan-zoek.
 only.if no student come ask-CAN stuff 3SG then will fall.asleep
 Int.: ‘Whenever no one asks him for something, he will fall asleep.’
- b. [**Ziju** jau hoksaang lai(^{??}-can)] keoi zau baan fan.
 only.if have student comeCAN 3SG then pretend sleep
 Int.: ‘Whenever some student comes, he will pretend to be asleep.’

⁸Some speakers report that existential quantifiers are not as bad as negative quantifiers. Nevertheless, there is still a contrast between sentences with and without *-can*.

• **Adverbs of quantification**

Last but not least, adverbs of quantification also induce minimality effects, as shown in (42). *Gingsoeng* ‘often’ cannot occur between *-can* in a relative clause and *mui-go* ‘every’.

(42) 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.’

• **Non-quantificational elements**

Non-quantificational elements, in contrast, lack [QU]-features and the agreement of *-can* with universal quantifiers remains in a minimal configuration. They do not induce minimality effects:

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

- a. [**Mui-ci** *hai deitit-dou* king(*-can*) *dinwaa*] dou bei jan naau. (locative 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
Negation	YES	YES	(37)
Focus operators	YES	YES	(39)
Modals	YES	YES	(40)
Quantifiers	YES	YES	(41)
Adverbs of quantification	YES	YES	(42)
Locative adverbials	NO	NO	(43a)
Temporal adverbials	NO	NO	(43b)
<i>Wh</i> -nominals	NO	NO	(43c)

Table 1: Minimality effects in universal concord in Cantonese

(48) PIC compliance (46b) with a phasal boundarya. *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.’

b. *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.’

• **Contrasting with (weak) NPI licensing**

The agreement of *-can* differs from (weak) NPI-licensing, a semantic dependency, with respect to minimality and locality. *Jamho* ‘any’ is a (weak) NPI in Cantonese that occurs in downward entailing contexts. Unlike *-can*, *jamho* may be licensed by negation with an intervening deontic modal in (49), violating RM:

(49) 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 (50) also violates the PIC by crossing two phasal boundaries DP and CP (also *vP* and CP boundaries in (49)). Note that (50) additionally violates island constraints, where *jamho* within a complex NP island is licensed by a matrix negation.

(50) 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).’

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 Beyond Cantonese: *mei...dou* in Mandarin

Dong (2009) and C.-y. E. Tsai (2015) also mention 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*:⁹

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

Dou may distribute over a plural noun. It may also license a *wh*-indefinite, amounting to a universal reading.

- (54) a. Tamen **dou** lai-le. (Mandarin, Cheng 1995:198)
 3PL DOU come-PERF
 ‘They all came.’
 b. Shei **dou** hui lai. (Mandarin, Cheng 1995:202)
 who DOU will come
 ‘Everyone will come.’

Kratzer (2005a) suggests that the true source of distributivity in (53) might come from the adverbial adverbial operator *dou*, rather than the apparent D-quantifier *mei-ge*. Dong (2009) and C.-y. E. Tsai (2015), taking up Kratzer’s idea, argue that *mei(-ge)* is a concord marker that agrees with a universal quantifier.

- (55) Proposed agreement between *mei(-ge)* and *dou* (Dong 2009)
 a. [_i *dou* [_i [_u *Mei-ge-ren* [_u bought a book]]] (Agree)
 b. [_u *Mei-ge-ren* [_i [_i *dou* [_i [_{t_i} bought a book]]]] (Subject movement to Spec,TP)

If this Agree relation does exist, we would predict that minimality effects can be found in *mei...dou*. Below, I show that such minimality effects are attested.

• Minimality effects

Robust minimality effects are found in *mei...dou*. For example, negation is not allowed between *mei* and *dou*. Crucially, when *mei* is absent, negation is allowed, e.g. between a plural noun and *dou*.

⁹As a remark, multiple *mei(-ge)* may be licensed by a single *dou*.

- (51) **Mei-ge** ren dui **mei-wei** laoshi **dou** hen zunjing
 Every-CL student to every-CL teacher DOU very respect
 ‘Every student respects every teacher.’

Mutiple *wh*-word, however, cannot be licensed by a single *dou*. The first *wh* can only be licensed by a question operator.

- (52) **Shei shenme** dou chi (Cheng 1995:203)
 who what DOU eat
 a. ‘Who eats everything?’/
 b. ‘*What does everyone eat?’/
 c. ‘*Everyone eats everything.’

(56) Negation

- a. ***Mei-ge** ren *meiyou* **dou** kan-guo na ben shu.
 every-CL person NEG DOU read-EXP that CL book
 Int.: 'Not everyone read that book.' (wide scope negation)/
 Int.: 'Everyone didn't read that book.' (narrow scope negation)
- b. Nei xie ren *meiyou* **dou** kan-guo nei ben shu. (Cheng 1995:199)
 that CL.PL person NEG DOU read-EXP that CL book
 'Not all of these people read that book.' (wide scope negation)

Other elements with [QU]-feature also exhibit similar minimality effects, including focus operators, modals, quantifiers, and adverbs of quantification:

(57) Identificational focus operator *shi*

- a. ***Mei-ge** xuesheng *shi* *zhe-ben shu* **dou** kan-guo.
 every-CL student FOC this-CL book DOU read-EXP
 Int.: 'It is this book that every student has read.'
- b. Nei xie xuesheng *shi* *zhe-ben shu* **dou** kan-guo (, bushi na ben shu).
 that CL.PL student FOC this-CL book DOU read-EXP not that CL book
 'It is this book that all of those students have read(, but not that book).'

(58) Modals

- a. ***Mei-ge** ren *keyi* **dou** lai.
 every-CL student may DOU come
 Int.: 'Every student may come.'
- b. Tamen *keyi* **dou** lai.
 3PL may DOU come
 'All of them may come.'

(59) Quantifier *youren* 'someone'

- a. ***Mei-ge** lishi shijian *youren* **dou** jilu xialai le.
 every-CL historical event someone DOU record down SFP
 Int.: 'There is someone that recorded every historical event.' (wide scope existential)/
 Int.: 'For every historical event x, there is someone that recorded x.' (narrow scope existential)
- b. Nei xie lishi shijian *youren* **dou** jilu xialai le.
 that CL.PL historical event someone DOU record down SFP
 'There is someone that recorded all of those historical events.' (wide scope existential)

(60) Adverbs of quantification

- a. ??**Mei-ge** xuesheng *changchang* **dou** qu Meiguo.
 every-CL student often DOU go U.S.
 ‘Every student often goes to the U.S.’
- b. Nei xie xuesheng *changchang* **dou** qu Meiguo.
 that CL.PL student often DOU go U.S.
 ‘All of those students often go to the U.S.’

In contrast, elements without [QU-] features do not trigger such minimality effects:

(61) Non-quantificational elements

- a. **Mei-ge** xuesheng *zai zhe-ge xuexiao* **dou** dedao henhao-de jiaoyu. (locative adverbials)
 Every-CL student at this-CL school DOU receive good education
 ‘Every student received good quality education in this school.’
- b. **Mei-ge** yuangong *mingnian* **dou** hui shoudao yi bi jiangjin. (temporal adverbials)
 every-CL employee next.year DOU will receive one CL bonus
 ‘Every employee will get a bonus next year.’
- c. (?)**Mei-ge** xuesheng *dui na-ge laoshi* **dou** hen zunjing? (*wh*-nominals)
 Every-CL student to which-CL teacher DOU very respect
 ‘Which teacher is such that every student respects?’

Intervening elements	Block <i>-can</i> agreement?	Minimality effects to <i>mei...dou</i> ?	Examples
Negation	YES	YES	(56)
Focus operators	YES	YES	(57)
Modals	YES	YES	(58)
Quantifiers	YES	YES	(59)
Adverbs of quantification	YES	YES	(60)
Locative adverbials	NO	NO	(61a)
Temporal adverbials	NO	NO	(61b)
<i>Wh</i> -nominals	NO	NO	(61c)

Table 2: Minimality effects in Mandarin *mei...dou* constructions

- **Going back to *-can***

Cantonese D-quantifier *mui(-go)* ‘every’ largely patterns with Mandarin *mei(-ge)* ‘every’. The question is then why *mui(-go)* can agree with *-can*, if itself requires the presence of *dou* for agreement, as in (62). Note that such problems do not arise for the adverbial quantifier over events *mui-ci* ‘every time’, since *dou* is not required in the second clause (cf. 4b).

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

Unlike *-can*, however, Mandarin *mei(-ge)* and Cantonese *mui(-go)* do seem to have quantificational force, as evidenced by the availability of ‘almost’ modification:

- (63) a. **Jihu** mei-ge ren dou mai-le shu. (Mandarin)
 almost every-CL person DOU buy-PERF book
 ‘Almost everyone bought a book.’
- b. **Caa-m-do** mui-go jan dou maai-zo syu. (Cantonese)
 almost every-CL person DOU buy-PERF book
 ‘Almost everyone bought a book.’

One possibility is to adopt Pesetsky and Torrego (2007)’s proposal that feature interpretability and valuation are dissociated. It could be that D-quantifier *mei(-ge)/mui(-go)* has an interpretable unvalued universal feature [$i\forall:-$]: it agrees with *dou* for value, but at the same time bears quantificational force.

- | | | | |
|------|------------------------------------------|------------------|-----------------------------|
| (64) | Concord element <i>-can</i> : | [$u\forall:-$] | (uninterpretable, unvalued) |
| | D-quantifier <i>mui(go)</i> ‘every’: | [$i\forall:-$] | (interpretable, unvalued) |
| | A-quantifier <i>mui-ci</i> ‘every time’: | [$i\forall:+$] | (interpretable, valued) |
| | A-quantifier <i>dou</i> : | [$i\forall:+$] | (interpretable, valued) |

It should be noted that the case of *mei...dou* is more complicated than *can* in terms of semantic composition. Unlike *-can*, *mei(-ge)* has quantificational force. While the syntactic agreement analysis of *-can* is able to account for licensing (=obligatoriness) and compositionality (=doubling) at the same time, it only explains the licensing of *mei*, i.e. why *dou* is obligatory. An extra semantic component is needed to explain why both *mei* and *dou*, with quantificational force, may co-occur. I leave this issue for further research.

6 Concluding remarks

(65) Take-home messages

- a. Universal concord is attested in Cantonese.
- b. *-Can* is a concord element that agrees with a universal quantifier syntactically.
- c. Minimality effects support a syntactic approach to concord (*-can* and Mandarin *mei...dou*)

Minimality effects in negative concord. Minimality effects are rarely discussed in the literature of concord. One exception is Haegeman and Lohndal (2010), who show that universal quantifiers like ‘everyone’ induce minimality effects to negative concord in West Flemish.

Moreover, minimality effects by focus operators and adverbs of quantification can also be found in Portuguese negative concord:

(66) Minimality effects in Portuguese negative concord

a. *Focus operators ‘only’*

*O João **não só** deu este livro a **ninguém**.
 the John NEG only give.3SG.PST.IND this book to no-one
 Int.: ‘John didn’t only give this book to anyone.’

b. *Focus operators ‘only’ (subjunctive clause)*

Não (*só) quero (*só) que (*só) o João (*só) ligue a **ninguém**.
 NEG only want.1SG.PRS.IND only that only the John only call.3SG.PRS.SUBJ to no-one
 Int.: ‘I don’t (only) want (only) John to (only) call anyone.’

c. *Adverbs of quantification*

*O João **não** {frequentemente/às vezes/muitas vezes/sempre} ligava a **ninguém**.
 the John NEG frequently/to.the times/many times/always call.3SG.IPFV.PST.IND to no-one
 Int.: ‘John didn’t often/sometimes/all the time/always call anyone.’

(Catarina Loureiro Soares, p.c.)

While more need to be explored, minimality effects offer a new, potential argument for a syntactic approach to concord in general.

References

- Beghelli, Filippo, and Timothy Stowell. 1997. "Distributivity and Negation: The Syntax of *each* and *every*." In *Ways of Taking Scope*, edited by Anna Szabolcsi, 71–107. Kluwer.
- Bjorkman, Bronwyn M., and Hedde Zeijlstra. 2019. "Checking up on (ϕ -) agree." *Linguistic Inquiry* 50 (3): 527–569.
- Cable, Seth. 2014. "Distributive numerals and distance distributivity in Tlingit (and beyond)." *Language* 90 (3): 562–606.
- Cheng, Lisa L.-S., and C.-T. James Huang. 1996. "Two Types of Donkey Sentences." *Natural Language Semantics* 4 (2): 121–163.
- Cheng, Lisa Lai-Shen. 1995. "On Dou-Quantification." *Journal of East Asian Linguistics* 4 (3): 197–234.
- Chomsky, Noam. 2000. "Minimalist inquiries: the framework." In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, edited by Roger Martin, David Michaels, and Juan Uriagereka, 89–156. Cambridge, MA: MIT Press.
- . 2001. "Derivation by phase." In *Ken Hale: a life in language*, edited by Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.
- Dong, Hongyuan. 2009. "Issues in the semantics of Mandarin questions." Ph.D. dissertation, Cornell University.
- Ernst, Thomas. 1994. "Conditions on Chinese A-not-A Questions." *Journal of East Asian Linguistics* 3 (3): 241–264.
- Frege, Gottlob. 1892. "Über Sinn und Bedeutung." *Zeitschrift für Philosophie und philosophische Kritik* 100:25–50.
- Geurts, Bart, and Janneke Huitink. 2006. "Modal concord." In *Concord phenomena and the syntax semantics interface*, edited by Paul Dekker and Hedde Zeijlstra, 15–20. Malaga: ESSLLI.
- Giannakidou, Anastasia. 1998. *Polarity Sensitivity as (non)veridicality*. Amsterdam: John Benjamins Publishing Company.
- . 2000. "Negative...concord?" *Natural Language and Linguistic Theory* 18 (3): 457–523.
- Giannakidou, Anastasia, and Hedde Zeijlstra. 2017. "The Landscape of Negative Dependencies: Negative Concord and N-Words." In *The Wiley Blackwell Companion to Syntax, Second Edition*, edited by Martin Everaert and Henk van Riemsdijk, 1–38. Oxford: Blackwell.
- Haegeman, Liliane, and Terje Lohndal. 2010. "Negative Concord and (Multiple) Agree: A Case Study of West Flemish." *Linguistic Inquiry* 41 (2): 181–211.
- Haegeman, Liliane, and Raffaella Zanuttini. 1991. "Negative heads and the Neg Criterion." *Linguistic Review* 8:233–252.
- Herburger, Elena. 2001. "The negative concord puzzle revisited." *Natural Language Semantics* 9 (3): 289–333.
- Hole, Daniel. 2017. "A crosslinguistic syntax of scalar and non-scalar focus particle sentences: the view from Vietnamese and Chinese." *Journal of East Asian Linguistics* 26 (4): 389–409.
- Horn, Laurence R. 1972. "On the semantic properties of logical operators in English." PhD diss., University of California, Los Angeles.
- Huang, C.-T. James. 1982a. "Logical relations in Chinese and the theory of grammar." PhD diss., Massachusetts Institute of Technology.
- . 1982b. "Move wh in a language without wh movement." *The Linguistic Review* 1:369–416.
- Kinjo, Kunio, and Yohei Oseki. 2016. "Wh-Concord in Okinawan=Syntactic Movement+Morphological Merger." *University of Pennsylvania Working Papers in Linguistics* 22 (1): 177–186.
- Kratzer, Angelika. 2005a. "Building Resultatives." In *Event Arguments in Syntax, Semantics, and Discourse*, edited by Claudia Maienborn and Angelika Wöllstein-Leisten, 177–212. Tübingen: Niemeyer.
- . 2005b. "Indefinites and the Operators they depend on: From Japanese to Salish." In *Reference and quantification: The Partee effect*, edited by Gregory N Carlson and Francis Jeffrey Pelletier, 113–142. Stanford, CA: CSLI Publications.
- Kratzer, Angelika, and Junko Shimoyama. 2002. "Indeterminate pronouns: The view from Japanese." In *Proceedings of the Tokyo conference on psycholinguistics*, edited by Yukio Otsu, 3:1–25. Tokyo: Hituzi Syobo.
- Labov, William. 1972. "Negative attraction and negative concord in English grammar." *Language* 48 (4): 773–818.
- Ladusaw, William A. 1992. "Expressing Negation." In *Proceedings of SALT II*, edited by Chris Barker and David Dowty, 237–259. Ithaca, NY: Cornell University.
- Law, Ann. 2001. "A-not-A questions in Cantonese." *UCL Working Paper in Linguistics* 13:295–318.
- Lee, Peppina Po-lun. 2017. "Quantification in Cantonese." In *Handbook of quantifiers in natural language volume II*, edited by Denis Paperno and Edward L. Keenan, 61–112. Cham: Springer.
- Lee, Tommy Tsz-Ming. 2019. "Head movement with semantic effects: Aspectual verb raising in Cantonese." *Proceedings of the Linguistic Society of America* 4 (1): 59–1–11.

- Lee, Tommy Tsz-Ming. 2021. "Movement of quantificational heads." In *Proceedings of NELS51*.
- Lee, Youngjoo. 2005. "Exhaustivity as Agreement: The Case of Korean *Man* 'only'." *Natural Language Semantics* 13 (2): 169–200.
- Lin, Jo-Wang. 1998. "On Existential Polarity wh-phrases in Chinese." *Journal of East Asian Linguistics* 7 (3): 219–255.
- Oh, Sei-Rang. 2006. "Plurality markers across languages." Ph.D. dissertation, University of Connecticut.
- Pesetsky, David, and Esther Torrego. 2007. "The syntax of valuation and the interpretability of features." In *Phrasal and Clausal Architecture: Syntactic Derivation and Interpretation*, edited by Simin Karimi, Vida Samiian, and Wendy K Wilkins, 262–294. Amsterdam: John Benjamins Publishing Company.
- Quek, Yihui, and Aron Hirsch. 2017. "Severing focus form and meaning in Standard and Colloquial Singapore English." In *Proceedings of NELS 47*, edited by Andrew Lamont and Katerina Tetzloff.
- Rizzi, Luigi. 2001. "Relativized Minimality Effects." In *The handbook of contemporary syntactic theory*, edited by Mark Baltin and Chris Collins, 89–110. Malden, MA: Blackwell.
- . 2004. "Locality and Left Periphery." In *Structures and Beyond: The Cartography of Syntactic Structures*, edited by Adriana Belletti, 3:223–251. Oxford: Oxford University Press.
- Rothstein, Susan. 1995. "Adverbial quantification over events." *Natural Language Semantics* 3 (1): 1–32.
- Rushiti, Bujar. 2019. "Share-marking in Albanian: The distributive marker *nga*." Ph.D. dissertation, Paris Diderot University.
- Sio, Joanna Ut-Seong. 2020. "The Dual Identity of the Post-Verbal in Cantonese: A Non-Specific Resultative Particle and a Free Choice Item." *Studies in Chinese Linguistics* 41 (2): 139–159.
- Soh, Hooi Ling. 2005. "*Wh*-in-Situ in Mandarin Chinese." *Linguistic Inquiry* 36 (1): 143–155.
- Sun, Yenan. 2021. "A bipartite analysis of *zhiyou* 'only' in Mandarin Chinese." *Journal of East Asian Linguistics*. (Just accepted).
- Swart, Henriëtte de, and Ivan A. Sag. 2002. "Negation and negative concord in Romance." *Linguistics and philosophy* 25 (4): 373–417.
- Tang, Sze-Wing. 2015. *Jyutjyu jyufaat gongji [Lectures on Cantonese Grammar]*. Hong Kong: The Commercial Press.
- Tsai, Cheng-yu Edwin. 2015. "Toward a Theory of Mandarin Quantification." Ph.D. dissertation, Harvard University.
- Tsai, Wei-Tien Dylan. 1994. "On Economizing the Theory of A-Bar Dependencies." PhD diss., MIT.
- . 1999. "On Lexical Courtesy." *Journal of East Asian Linguistics* 8 (1): 39–73.
- Tsai, Wei-tien Dylan, and Ching-yu Helen Yang. 2015. "Inner vs. outer A-not-A questions." Paper presented on International Workshop on Cartography of Syntax, Beijing Language / Culture University, December 6-7, 2015.
- Watanabe, Akira. 2004. "The Genesis of Negative Concord: Syntax and Morphology of Negative Doubling." *Linguistic Inquiry* 35 (4): 559–612.
- Wu, Jianxin. 1997. "A model-theoretic approach to A-not-A questions." *University of Pennsylvania Working Papers in Linguistics* 4 (2): 273–289.
- Xiang, Yimei. 2020. "Function alternations of the Mandarin particle *dou*: Distributor, free choice licenser, and 'even'." *Journal of Semantics* 37 (2): 171–217.
- Zanuttini, Rafaella. 1991. "Syntactic Properties of Sentential Negation: A Comparative Study of Romance Languages." PhD diss., University of Pennsylvania.
- Zeijlstra, Hedde. 2004. "Sentential negation and Negative Concord." Ph.D. dissertation, University of Amsterdam.
- . 2007. "Modal Concord." In *Proceedings of SALT XVII*, edited by T. Friedman and M. Gibson, 317–332. Ithaca, NY: Cornell University.
- . 2008. "Negative concord is syntactic agreement." Ms., University of Amsterdam.
- . 2012. "There is only one way to agree." *The Linguistic Review* 29 (3): 491–539.