The Scope-taking and Subject-object Asymmetry of Chinese Focus Particles

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Outline

- Main ideas
- The data
- An analysis
  - The scope interaction between *zhi* and deontic modals
  - The subject-object asymmetry of exclusive particles
- Conclusions
- Implications
Main Ideas
The semantic-syntactic dichotomy

- Two scope-taking mechanisms of focus particles:
  - The projection of alternatives (Rooth 1992)
  - The quantifier-raising (QR) of focus particles/ associates (Wagner 2006)

- Two types of focus particles (cf. Erlewine 2016, 2017)
  - Sentential/ adverbial:
    - Syntactically: adjoined to the clausal spine
    - Semantically: a one-place operator
  - Constituent-marking:
    - Syntactically: adjoined to nominal constituents
    - Semantically: a two-place operator
The semantic-syntactic dichotomy

- A constituent focus particle in *object position*, but **NOT** in *subject position*, requires QR.
- An adverbial focus particle takes scope via the projection of alternatives.

The Parametric QR Hypothesis

- Languages may vary in whether QR is available as a scope-taking mechanism.
Proposal

- Chinese is a language where QR is **not available**.
- "Zhi ‘only’ is an adverbial focus particle, taking scope via the projection of alternatives.
- "Zhiyou ‘only’ is can be a constituent focus particle.
- The subject-object asymmetry on the well-formedness of Chinese exclusive particles (zhìyou/ jiù/ cài ‘only’) is due to **the absence of QR**.

The Idea

- Merging a quantifier (e.g., focus particles) in the right syntactic position (where they can be directly interpreted) **avoids QR**.
The Data
English Only and Deontic Modals

(1) John is allowed to take only \([\text{three}]_F\) courses.

- ◊ > only: Taking exactly three courses is allowed and taking more than three courses is also an option.
- only > ◊: Taking exactly three courses is the only option allowed.

(2) John is required to take only \([\text{three}]_F\) courses.

- □ > only: Taking exactly three courses is required and taking more than three courses is not allowed.
- only > □: Taking three courses is required and taking more than three courses is allowed.
Chinese Zhi ‘only’ in Prenominal Positions

Zilu  can/ must  select  only  three-CL-course
Intended: ‘Zilu is allowed/ required to take only three
courses.’

- Chinese zhi ‘only’ is banned from prenominal positions.
- As we will see, Chinese disambiguates the four readings
  via the surface scope of zhi and deontic modals.
**Chinese Zhi ‘only’ and Possibility Modals**

(4) **diamond > only**

Zilu keyi zhi xuan [san]_F-men-ke.
Zilu can only select three-CL-course
‘Zilu is allowed to only take three courses.’

(5) **only > diamond**

Zilu zhi keyi xuan [san]_F-men-ke.
Zilu only can select three-CL-course
‘Zilu is only allowed to take three courses.’
Chinese *Zhi* ‘only’ and Necessity Modals

(6) □ > *only*

Zilu  bixu  *zhi*  xuan  [san]_{F-men-ke}.
Zilu  must  only  select  three-CL-course
‘Zilu is required to only take three courses.’

(7) *only* > □

Zilu  *zhi*  bixu  xuan  [san]_{F-men-ke}.
Zilu  only  must  select  three-CL-course
‘Zilu is only required to take three courses.’
The Subject-Object Asymmetry

(8) Zhiyou/*Zhi [Zilu]_F xuan-le san-men-ke.
    Only Zilu select-ASP three-CL-course
    ‘Only Zilu took three courses.’

(9) *Zilu xuan-le zhiyou [san]_F -men-ke.
    Zilu select-ASP only three-CL-course
    Intended: ‘Zilu took only three courses.’

- **Zhiyou** is argued to be an allomorph of *zhi* (Erlewine 2016, 2017).
- **Zhiyou** is ungrammatical in the object position (see (9)).
The Subject-Object Asymmetry

(10) Jiu [Zilu]_F xuan-le san-men-ke.
Only Zilu select-ASP three-CL-course
‘Only Zilu took three courses.’

(11) *Zilu xuan-le jiu [san]_F -men-ke.
Zilu select-ASP only three-CL-course
Intended: ‘Zilu took only three courses.’

- The apparent subject-object asymmetry also holds for another Chinese exclusive particle cai ‘only’.
Questions

- Why does Chinese disambiguate the four readings in terms of the surface scope of *zhi* ‘only’ and modals?
- Why is Chinese *zhi* ‘only’ banned from prenominal positions?
- How do Chinese focus particles (*zhi* vs. *zhiyou*) take scope?
- Why do Chinese exclusive particles (*zhiyou*/ *jiu*/ *cai*) apparently show the subject-object asymmetry?
An Analysis:
The Scope Interaction between *Zhi* and Deontic Modals
Alternatives and Alternative Semantics

For expository purposes, we assume:

- A **quantificational** semantics of *zhi* ‘only’

\[ \| zhi \| = \lambda C_{<st,t>} \lambda p_{<s,t>} \lambda w_{<s>} \forall q_{<s,t>}[q \in C \land q(w) \rightarrow (p \subseteq q)] \]

- An expression has two dimensional meanings: an ordinary value and a focus value. The latter is combined by **pointwise functional application** (e.g., Rooth 1992).

- Focus alternatives **project** until they meet the focus operator, where they are interpreted by squiggle operator ~ and restricted by a contextual variable C (Rooth 1992).
(12) Adam only kissed [Mary].

For simplicity:
- VP-internal Subject Hypothesis
- Subject is interpreted in its base position (cf. Erlewine 2014 and subsequent works).
(12) Adam only kissed [Mary]_F.

\[ ||NP_1||^F = \{ \text{cindy, mary, sue} \}; \quad ||NP_2||^F = \{ \text{adam} \}; \]

\[ ||V||^F = \{ \lambda y \lambda z \lambda w. \ z \text{ kissed } y \text{ in } w \} \]

\[ ||VP||^F = \begin{cases} 
\lambda z \lambda w. \ z \text{ kissed } \text{cindy in } w \\
\lambda z \lambda w. \ z \text{ kissed } \text{mary in } w \\
\lambda z \lambda w. \ z \text{ kissed } \text{sue in } w \\
\lambda w. \text{adam kissed } \text{cindy in } w \\
\lambda w. \text{adam kissed } \text{mary in } w \\
\lambda w. \text{adam kissed } \text{sue in } w 
\end{cases} \]

\[ ||vP_1||^F = \begin{cases} 
\lambda w. \text{adam kissed } \text{mary in } w \\
\lambda w. \text{adam kissed } \text{sue in } w 
\end{cases} \]

\[ ||\text{only}|| = \lambda C_{st,t} \lambda p_{s,t} \lambda w_{s} \ \forall q_{s,t} \ [q \in C \land q(w) \rightarrow (p \subseteq q)] \]

\[ ||vP_2|| = \lambda w'_{s} \ \forall q_{s,t} \ [q \in C \land q(w') \rightarrow (\lambda w. \text{adam kissed } \text{mary in } w \subseteq q)] \]
Keyi ‘can’ > Zhi ‘only’

Zilu can only select three-CL-course
‘Zilu is allowed to only take three courses.’

LF: [◊ [ZHI(C) [[ Zilu takes threeₕ courses] ¬C]]]]
∥(4) ∥ = 1 iff ◊ (∀ q [q ∈ C ∧ q(w’) →
((λw. Zilu takes three courses in w ) ⊆ q)])

In prose: There is at least one accessible world w’
where Zilu takes exactly three courses.
**Zhi ‘only’ > Keyi ‘can’**

(5) *Zilu zhi keyi xuan [san]_F-men-ke.*

Zilu only can select three-CL-course
‘Zilu is only allowed to take three courses.’

**LF:** \[[\text{ZHI}(C) \ [\Diamond \ [[ \text{Zilu takes three }_F \text{ courses}]]]] \sim C\]

\[\|(5)\| = 1 \text{ iff } \forall q \ [q \in C \land q(w_0) \rightarrow \]
\[
((\Diamond (\text{Zilu takes three courses})) \subseteq q)]

- The modal is **incorporated** into the set of alternatives: The set of alternatives **scopes over** the modal.
- **Zhi excludes** all the stronger alternatives where there is a world in which *Zilu* takes more than three courses.
Bixu ‘must’ > Zhi ‘only’

(6) Zilu bixu zhi xuan [san]_F-men-ke.
Zilu must only select three-CL-course
‘Zilu is required to only take three courses.’

LF: [□ [ZHI(C) [[ Zilu takes three courses] ¬C]]]
∥(6) ∥ = 1 iff □ (∀ q [q ∈ C ∧ q(w’) →
((λw.Zilu takes three courses in w ) ⊆ q)])

In prose: Zilu takes exactly three courses in all the accessible worlds w’.
Zhi ‘only’ > Bixu ‘must’

(7) Zilu zhi bixu xuan \([\text{san}F\text{-men-ke}].\)

Zilu only must select three-CL-course

‘Zilu is only required to take three courses.’

LF: \([\text{ZHI}(C) \Box [[[Zilu \text{ takes three}_F \text{ courses}]]]\) \sim C\]

\[\|(7)\| = 1 \text{ iff } \forall q [q \in C \land q(w_0) \rightarrow ((\Box (Zilu \text{ takes three \text{ courses}})) \subseteq q)]\]

- The modal is **incorporated** into the set of alternatives: The set of alternatives **scopes over** the modal.
- Taking more than three courses in some but not all worlds is **not excluded** by zhi.
An Analysis:
The Subject-object Asymmetry of Chinese exclusive particles
The semantic-syntactic dichotomy

- A constituent focus particle in **object position**, but NOT in **subject position**, requires **QR**.
- An adverbial focus particle takes scope via the projection of alternatives.

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Proposal

- Chinese is a language where QR is not available.
- *Zhi* is an adverbial focus particle, taking scope via the projection of alternatives.
- *Zhiyou* is/ can be a constituent focus particle.
- The subject-object asymmetry of Chinese exclusive particles (*zhiyou*, *jiu*, *cai*) is due to the lack of QR.

The Idea

- Merging a quantifier (e.g., focus particles) in the right syntactic position (where they can be directly interpreted) avoids QR.
The Case of Subject

(13) *Zhiyou* [Zilu]_F kanjian-le Lisi.

Only Zilu see-ASP Lisi

‘Only Zilu saw Lisi.’

LF: [[[Zhiyou(C) [Zilu] ~C] [λz [z kanjian-le Lisi]]]]

||zhiyou|| = λxλPλw ∀ y[y ∈ C ∧ P(y)(w) → P(x) ⊆ P(y)]
|| (13) || = 1 iff ∀ y[ y ∈ C ∧ see(y, Lisi)(w₀) →

λw.see(Zilu, Lisi) in w ⊆ λw.see(y, Lisi) in w]
The Case of Object (and others)

(14) *Zilu kanjian-le zhiyou [Lisi]_{F}.

Zilu see-ASP only Lisi

Intended: ‘Zilu saw only Lisi.’

LF: [Zilu kanjian-le [[zhiyou (C) [Lisi] ~C]]]

∥zhiyou∥ = λxλPλw ∀y[y∈C ∧ P(y)(w) → P(x) ⊆ P(y)]

- **Type mismatch** arises after zhiyou combines with the associate Lisi, since QR is **not available**.
- **Topicalization** can help sometimes (cf. Erlewine 2016).
Conclusions

In Chinese,

- An **adverbial** focus particle: e.g., *zhi* ‘only’
  - A one-place (propositional) operator
  - Take scope via the projection of alternatives,

- A **constituent** focus particle: e.g., *zhiyou* ‘only’
  - A two-place (non-propositional) operator
  - Restricted to certain syntactic positions where they can be properly interpreted

- The apparent subject-object asymmetry is a consequence of **the lack of QR**.
Implications

- If Chinese lacks QR, it makes important predictions for the semantics-syntax of **Chinese quantifiers** in general.

- Chinese quantifiers are *syntactically restricted* or *semantically different* from their counterparts in other languages.
  
  - In the former case, they are merged in the **right syntactic position** where they can be properly interpreted.
  
  - In the latter case, Chinese quantifiers are compositionally different from their cross-linguistic counterparts.
Remaining Issues

- Are *zhi* and *zhiyou* completely in complementary distribution (i.e., in an allomorphic relation)?

- What about the scope-taking behavior of Chinese quantifiers in other domains (e.g., individuals, degrees, events, among others)?
  - **The scope-rigidity**

- What is/are the factor(s) leading to the presence/absence of QR (The Parametric QR Hypothesis)?
  - **Analyticity Parameter** (Jim Huang)
Thank you!
An alternative view

Erlewine (2016, 2017): Focus and Minimality

- *Zhi* and *zhiyou* are allomorphs and both are adverbal focus particles, adjoined to the clausal spine.
- The restriction on focus association (e.g., #Only John kissed [Mary]_F) comes from syntactic competition of derivations.

(15) a. **FP** Subject_F [vP Predicate]
    b. Subject FP [vP Predicate]_F

Two remaining questions:

- If correct, Chinese does not seem to have constituent exclusive particles. Is it a systematic gap or an accidental gap?
- There are counterexamples to the restricted association, e.g., **At least** John [deceived Mary]_F and its Chinese counterparts.