

Effect of creation verbs in Chinese and English

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Warning: basically the same as in GLOW46 and TEAL13!

N214: Evidence that children use to acquire Mandarin restitutive you - Ting XU and William SNYDER

N212: An investigation of SEE/LOOK verbs as a source of conative modality markers in Sinitic languages - Boyang LIU

N316: 上古漢語否定詞「莫」研究的幾個問題 - 谷峰

N317: 古代韓語借字表記「內」、「屍」的上古漢語音對應 - 安英姬

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N213: 鄭州方言的形容詞短語兒化——兼論北方方言形容詞短語兒化的差異 - 呂曉玲、於雅哲

N101: 吳語臨海方言的主觀量標記——兼與吳語仙居方言比較 - 盧笑予、潘雪雨晴

The definiteness effect

Subextraction from a definite DP is degraded:

1. Who did Mary see **a** picture of?

Indefinite DP

2.*Who did Mary see **that** picture of?

Definite DP with *that*

(We are restricting the scope to depiction nouns.)

Chomsky 1973; Tollan and Heller 2015; Shen & Lim 2022; and many others

Structural approaches to the definiteness effect

1. Definite DPs are locality domains for movement (PIC/subjacency; freezing).
(Diesing 1992; Citko 2014; Huang 2022; cf. Davies & Dubinsky 2003, Chomsky 1973)
2. The Specificity Condition: no binding of variables in specific/definite DPs.
(Fiengo & Higginbotham 1981; cf. Simonenko 2015)

Leaving an information structure-based approach (Erteschik-Shir 1981, Abeillé et al 2020) aside for now.

The amelioration effect of VOC

The definiteness effect is said to disappear when the main verb is a **verb of creation** (among other conditions; see Erteschik-Shir 1981, Davies & Dubinsky 2003, Huang 2022; Lim 2022):

3. Who did Mary **take** **a** picture of?

Indefinite DP

4. Who did Mary **take** **that** picture of?

Definite DP with *that*

Today: definiteness and VOC effects across languages

The aforementioned theories make different predictions about when definiteness and VOC effects appears.

We run experiments in English and Chinese to shed light on the different theories.

Background: Wh-in situ in Mandarin Chinese

5. 你吃了什么？

QOP_i Ni chi-le **shenme_i**?

you eat-ASP what

“What did you eat?”

Conventionally analyzed as **unselective binding** by question operator.

In situ wh-arguments not sensitive to islands (no subjacency).

6. 你讨厌捕杀什么的猎人？

Ni taoyan [busha shenme de lieren]?

you dislike [hunt what DE hunter]

Lit: “What do you dislike hunters who hunt ___?”

Aoun & Li 1993, Tian et al 2022; cf. C.-T. J. Huang 1982, Lu et al. 2020

Mandarin Chinese also said to have a definiteness effect

7. 黄老师读了一本关于什么的书？

Huanglaoshi du-le **yi-ben** guanyu shenme de shu?

Prof.Huang read-ASP **one**-CL about **what** DE book

“What did Prof. Huang read a book about?”

Indefinite DP

8. *申老师读了那本关于什么的书？

*Shenlaoshi du-le **na-ben** guanyu shenme de shu?

Prof.Shen read-ASP **that**-CL about **what** DE book

“What did Prof. Shen read that book about?”

Definite DP

Can be understood in terms of Specificity; question operator cannot bind the wh-phrase. (Aoun & Li 1993; cf. C.-T. J. Huang 1982)

The amelioration effect of VOC: no previous claim.

Note that neither effect has been experimentally verified.

(Re: data reliability in Chinese, see Chen et al. 2018; Lu et al. 2020 (wh-in situ); N. Huang accepted)

Upshot

Novel experimental demonstration of:

- VOC effect in English
- Definiteness effect despite VOC in English
- Definiteness effect + no VOC effect in Chinese

Theoretical implications:

- Existing accounts predict cross-linguistic uniformity or offer no clear predictions; our results pose a challenge to these accounts.
- We suggest that a combination of Specificity and PIC can account for the pattern.

A closer look at accounts of the definiteness effect

Proposal #1: a locality constraint like PIC + noun incorporation

(following Davies & Dubinsky 2003)

- a. Definite DPs are locality domains (also Bowers 1987, N. Huang 2022)
- b. Noun of a definite DP object can incorporate onto a VOC, neutralizing the locality domain (Davies & Dubinsky 2003; N. Huang 2022, cf. Lim 2022a,b - NUS MA!)

Predicts:

- Definiteness and VOC effects in English
- No definiteness effect in Chinese (wh-in situ is not sensitive to subadjacency)
- No VOC effects for Chinese, nothing to ameliorate

A closer look at accounts of the definiteness effect

Proposal #2: Specificity Condition

Anaphors and variables must be bound inside a specific NP.

(Fiengo 1987; Fiengo & Higginbotham 1981)

Predicts:

- Definiteness effects in English and Chinese

9. ***What**_i did Mary see [**that** picture of **t**_i]?

10. ***QOP**_i Shenlaoshi du-le [**na-ben** guanyu **shenme**_i de shu]?
Prof. Shen read-ASP that-CL about what DE book
“What did Prof. Shen read that book about?”

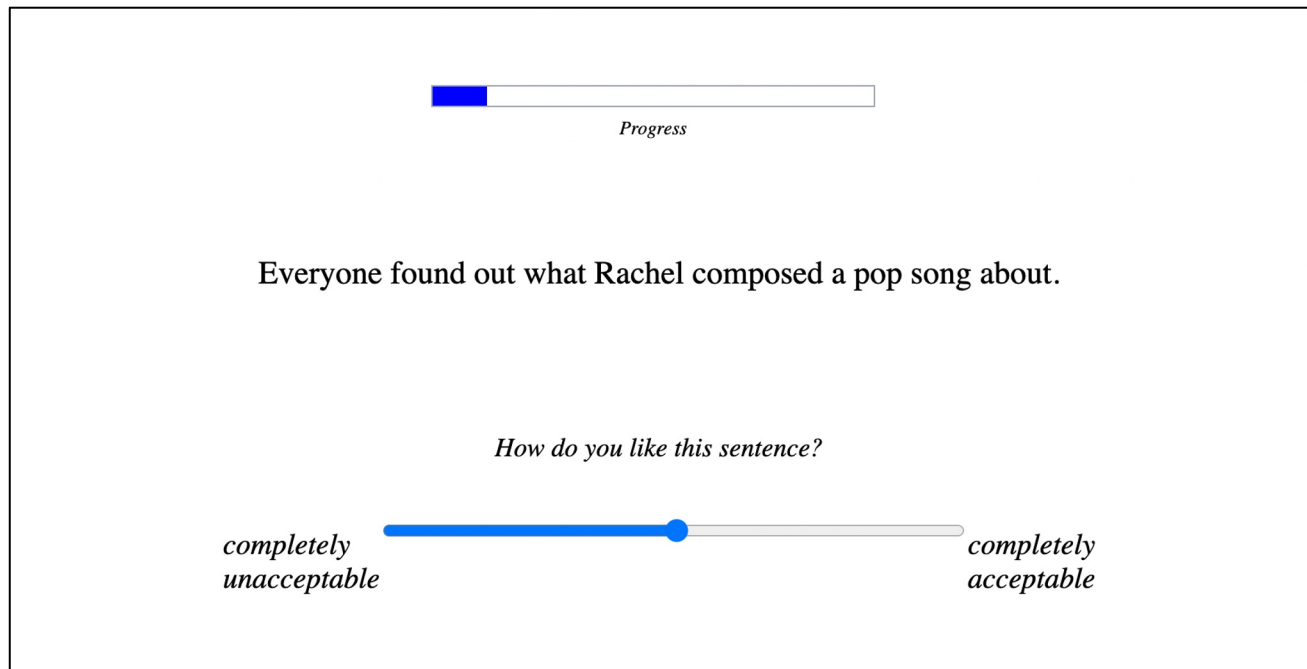
- No VOC effects for English or Chinese

Predictions

	PIC+NI	Specificity Condition
Definiteness effect in English	Yes	Yes
VOC effect (amelioration) in English	Yes	No
Definiteness effect in Chinese	No	Yes
VOC effect in Chinese	No	No

Experiments

- Acceptability judgment task on a slider



The interface is enclosed in a black rectangular frame. At the top, there is a progress bar consisting of a blue segment on the left and a white segment on the right, with the word "Progress" centered below it. In the center of the frame, the sentence "Everyone found out what Rachel composed a pop song about." is displayed. Below the sentence, the question "How do you like this sentence?" is centered. At the bottom, there is a horizontal slider. The slider has a blue track and a blue circular handle. The left end of the slider is labeled "completely unacceptable" and the right end is labeled "completely acceptable". The handle is positioned approximately two-thirds of the way from the left end.

Progress

Everyone found out what Rachel composed a pop song about.

How do you like this sentence?

completely unacceptable completely acceptable

Experiment 1: English (52 Prolific participants)

2x2x2 (= 8 conditions) x 3 items/conditions (+ 48 fillers)

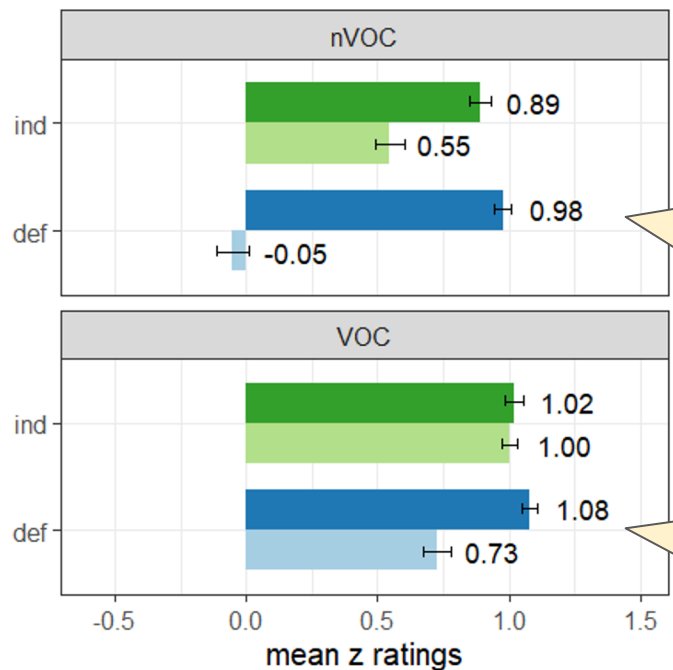
- NP type: indefinite vs. definite demonstrative
VOCs said to neutralize definiteness effect of demonstratives (Davies & Dubinsky 2003)
- Dependency length: short vs. long
- Verb type: nVOC vs. VOC

1. Everyone wants to know who _ **saw/shot** a film about the war. (nVOC/VOC | ind | short)
2. Everyone wants to know what Tom **saw/shot** a film about _. (nVOC/VOC | ind | long)
3. Everyone wants to know who _ **saw/shot** that film about the war. (nVOC/VOC | def | short)
4. Everyone wants to know what Tom **saw/shot** that film about _. (nVOC/VOC | def | long)

Experiment 1: English

VOCs make subextraction more acceptable
(**VOC effect**).

But there is still a **definiteness effect**.



How bad is subextraction from
nVOCs + definite DP?
*What did Mary **read** that book about?*

Difference-in-difference score
("Badness") = **0.69**

How bad is subextraction from
VOCs + definite DP?
*What did Mary **write** that book about?*

Badness = 0.33

Difference in
badness = **0.36**

def.lg def.sh ind.lg ind.sh

3-way interaction effects between verb type, definiteness, and dependency;
2-way interaction effects between definiteness and dependency (all $p < .01$)

Experiment 2: Chinese (47 Prolific participants)

Parallel to English, same 8 conditions (NP type x Dependency Length x Verb type) + 48 fillers

1. 我想知道谁经常读/写关于历史的书。

wo xiangzhidao shui jingchang du/xie [guanyu lishi de shu]

I wonder who often read/write [about history DE book]

"I wonder who **often** reads/writes **books** about history.

(nVOC/VOC | ind | short)

2. 我想知道黄老师经常读/写关于什么的书。

wo xiangzhidao huanglaoshi jingchang du/xie [guanyu shenme de shu]

I wonder Prof. Huang often read/write [about what DE book]

"I wonder what Huang **often** write **books** about.'

(nVOC/VOC | ind | long)

3. 我想知道谁读/写了那本关历史的书。

wo xiangzhidao shui du/xie-le [na-ben guanyu lishi de shu]

I wonder who read/write-LE [that-CL about history DE book]

"I wonder who read/wrote **that book** about history.'

(nVOC/VOC | def | short)

4. 我想知道黄老师读/写了那本关于什么的书。

wo xiangzhidao Huanglaoshi du/xie-le [na-ben guanyu shenme de shu]

I wonder Prof. Huang read/wrote-LE [that-CL about what DE book]

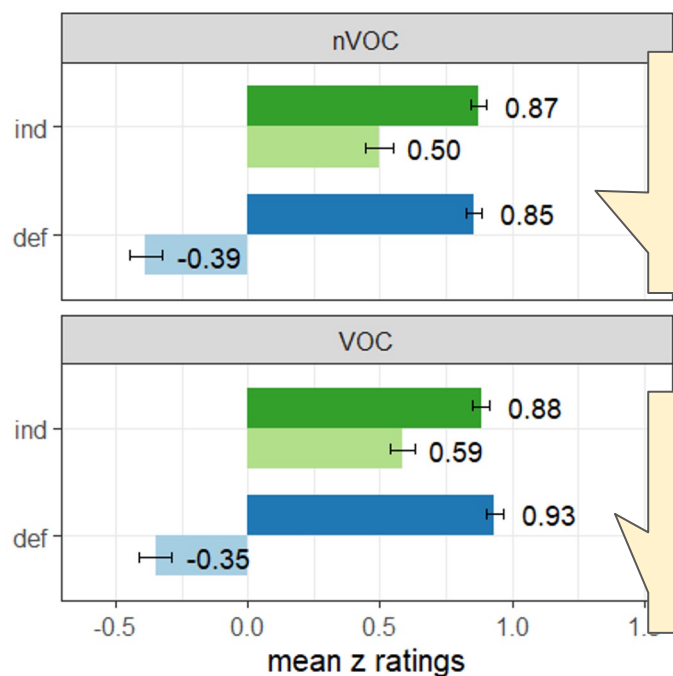
"I wonder Huang read/wrote **that book** about what.'

(nVOC/VOC | def | long)

Experiment 2: Chinese

VOCs don't make wh-in situ in definite DPs more acceptable (**no VOC effect**).

Definiteness effect for both verb types.



How bad is wh-in situ inside
nVOCs + definite DP?
“The teacher **read** that book about what?”

Badness = 0.87

How bad is wh-in situ inside
VOCs + definite DP?
“The teacher **wrote** that book about what?”

Badness = 0.99

Difference in
badness = n.s.

def.lg def.sh ind.lg ind.sh

No 3-way interaction effect between verb type, definiteness, and dependency ($p=.35$); 2-way interaction effect between definiteness and dependency ($p<.01$)

Based on feedback we got from TEAL13

We are doing a follow up experiment in Chinese which is more parallel to the English experiment (so far, $n = 32$)

Indefinite: — + classifier; aspect: 了; more parallel lexicalizations

Ind.short: 我想知道谁看了一部关于超级英雄的电视剧。

Def.short: 我想知道谁看了那部关于超级英雄的电视剧。

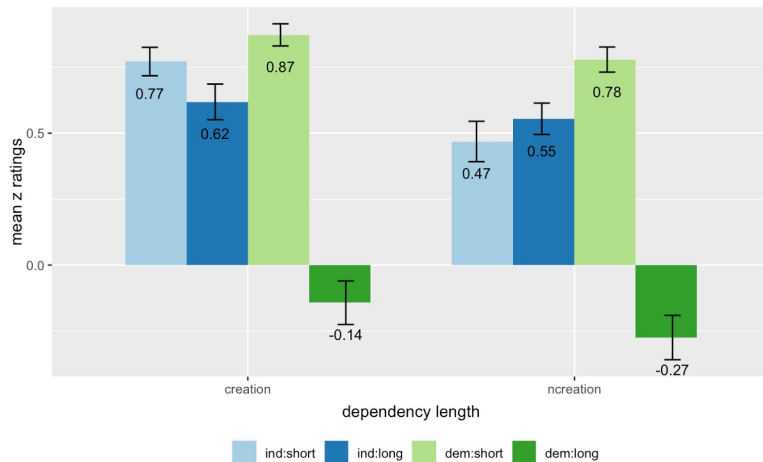
Ind.long: 我想知道黄老师看了一部关于什么的电视剧。

Def.long: 我想知道黄老师看了那部关于什么的电视剧。

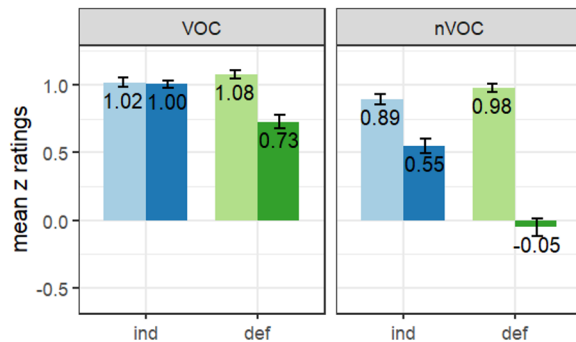
Same results

no VOC effect;

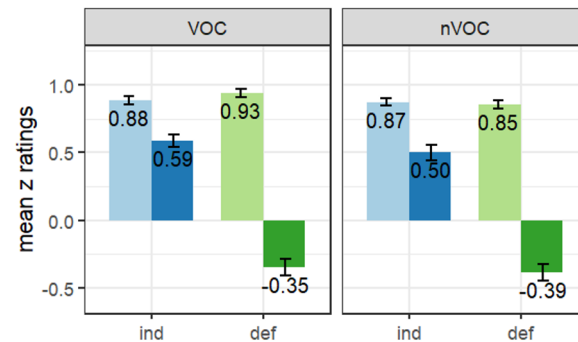
Definiteness effect for both VOC and nVOC



Predictions



English ind:sh ind:lg def:sh def:lg



Chinese ind:sh ind:lg def:sh def:lg

	Results	PIC+NI	Specificity Condition
Definiteness effect in English nVOC	Yes	Yes	Yes
Definiteness effect in English VOC	Yes	No	Yes
VOC effect in English	Yes	Yes	No
Definiteness effect in Chinese nVOC	Yes	No	Yes
Definiteness effect in Chinese VOC	Yes	No	Yes
VOC effect in Chinese	No	No	No

Proposal: Specificity and PIC+NI

Both the Specificity condition and PIC+NI are at work.

English wh-questions: **What_i did you read that book about t_i ?**

- Subextraction of the wh-phrase ← PIC (can be ameliorated by VOC)
- Binding of the wh-phrase's lower copy (trace) ← Specificity Condition

Chinese wh-questions: **QOP_i 你读了那本关于谁_i的书?**

- No subextraction
- Binding of the wh-phrase by a question operator ← Specificity Condition

Proposal: accounting for the results

		PIC+NI	Specificity Condition	
nVOC in English	... what Tom read that book about ____.	Violated	Violated	} VOC less bad
VOC in English	... what Tom wrote that book about ____.	Satisfied	Violated	
nVOC in Chinese	... Tom read that book about what.	n/a	Violated	} Both equally bad
VOC in Chinese	... Tom wrote that book about what.	n/a	Violated	

Independent evidence for Specificity in Chinese

Wh-element can have different readings in Chinese when bound by a different kind of operator. E.g. existential operator => indefinite reading.

你吃了什么。 $\exists \text{OP}_i$ you ate **what**_i => you ate something

The wh-indefinite reading is blocked when the wh-element is inside a specific DP (Li 1992):

(54) a. Wo yiwei ta na le shenme ren de xiangpian.

I think he take LE what man DE picture

‘I thought he took someone’s picture.’

b. *Wo yiwei ta na le nazhang shenme ren de xiangpian.

I think he take LE that what man DE picture

‘I thought he took that picture of someone.’

Li 1992, N.B.: *took a picture* in (54) = “to get hold of a photo”, not “to photograph”

Theoretical consequence:

It's been commonly assumed that there needs to be only one constraint to account for the definiteness effect.

(Davies & Dubinsky 2003; N. Huang 2022, Matushansky 2005)

Matushansky 2005: the definiteness effect cannot be used as an argument for the phasehood of DP, because the effect is already accounted for by the Specificity Condition. “Why have two explanations for one effect?”

Today: whether cross-linguistically or within a language, definiteness effects cannot be reduced to only PIC+NI or only Specificity.

Summary and conclusion

Empirical findings:

- Definiteness effect in nVOC and VOC in English and Chinese
- No VOC effect in Chinese

Theoretical implications:

- Both the Specificity condition and PIC+NI are required and their effects can be teased apart when we compare multiple languages.
- Informational structure approach is challenged.

Alternative 1: NI in English but not Chinese

Account:

- wh-in-situ involves LF movement which is subject to PIC
- the lack of VOC effect results from the absence of the NI strategy in Chinese

Puzzles:

- The definiteness effect would be the only island effect observed in argument wh-in-situ. One would have to propose a island theory accordingly.
- It's not clear how this parametric variation would be learned considering that NI is covert.
- Maybe it can be learned through semantics (Lim 2022), but why do Chinese children *not* learn it?

Alternative 2: Information structure approach

Information structure approaches (for discussion of English, see Erteschik-Shir 1981; Goldberg 2006; Abeillé et al. 2020), e.g. Dominance hypothesis:

- a. Only foregrounded / dominant NPs can be extracted.
- b. Definite objects are themselves dominant, so the NPs inside cannot be.
- c. Objects of VOCs are not dominant, NPs inside can be dominant.

dominant
saw... *the picture of what*
not
dominant

not dominant
took... *the picture of what*
can be
dominant

No clear predictions about Chinese. But if what matters is communicative intent and information structure status, then we predict cross-linguistic uniformity (cf. Goldberg 2006).

Alternative 2: Information structure approach

If the same information structure requirements apply to wh-in situ languages (cf. Goldberg 2006):

- The NP inside a definite object is not dominant and cannot be asked about.
 - Predicts definiteness effect in both English and Chinese
- VOCs change the dominance status of this NP, so it can be asked about.
(Erteschik-Shir and Lappin 1979, Erteschik-Shir 1981)
 - Predicts no definiteness effect in VOC in English and Chinese
→ **contrary to the results**

Why not dominance + Specificity?

1. Logically possible, but arguably inconsistent with the spirit of information structure-based proposals:

If what matters is information structure, then we predict uniformity between wh-movement and wh-in situ(cf. Goldberg 2006): a wh-element within the definite object of a VOC should be better than nVOC in Chinese, just like English.

The lack of VOC effect in Chinese is thus surprising even for Specificity + Dominance.

2. The dominance status of definite NPs and Specificity result in a redundancy in the theory and we have independent evidence from wh-indefinite for Specificity.

Thank you!

写/读书	{write/read} book	制作/观看 纪录片	{produce/watch} documentary	wrote/read book	produced/watched documentary
写/最关注 报道	{write/follow the closest} report	制作/最喜欢 短片	{produce/like the best} short film	drafted/reviewed essay	produced/reviewed short film
写/听 歌	{write/listen to} song	指导/观看 电视剧	{direct/watch} TV show	composed/listened to song	directed/watched TV show
写/最喜欢 诗	{write/like the best} poem	指导/最讨厌 舞台剧	{direct/dislike the most} play	composed/edited poem	directed/saw play
撰写/读 文章	{compose/read} article	编写/收集 故事	{draft/collect} story	wrote/edited article	wrote/read story
撰写/最关注 论文	{compose/follow the closest} thesis	编写/最讨厌 童话	{draft/dislike the most} fairy tale	drafted/criticized thesis	wrote/heard fairy tale
发表/评论 理论	{propose/comment on} theory	讲/收集 传说	{tell/collect} legend	proposed/evaluated theory	told/heard anecdote
发表/最关注 建议	{propose/follow the closest} suggestion	讲/最反感 笑话	{tell/dislike the most} joke	proposed/praised suggestion	told/heard joke
提出/评论 主张	{propose/comment on} proposal	拍/看 短视频	{shoot/watch} short video	developed/evaluated proposal	made/saw short video
提出/最关注 政策	{propose/follow the closest} policy	拍/最反感 视频	{shoot/dislike the most} video	developed/criticized policy	made/praised video
拍摄/看 电影	{shoot/see} film	创作/听 流行歌	{create/listen to} pop song	shot/saw film	composed/listened to pop song
拍摄/最喜欢 影片	{shoot/like the best} movie	创作/最喜欢 歌曲	{create/like the best} song	shot/saw movie	composed/heard song

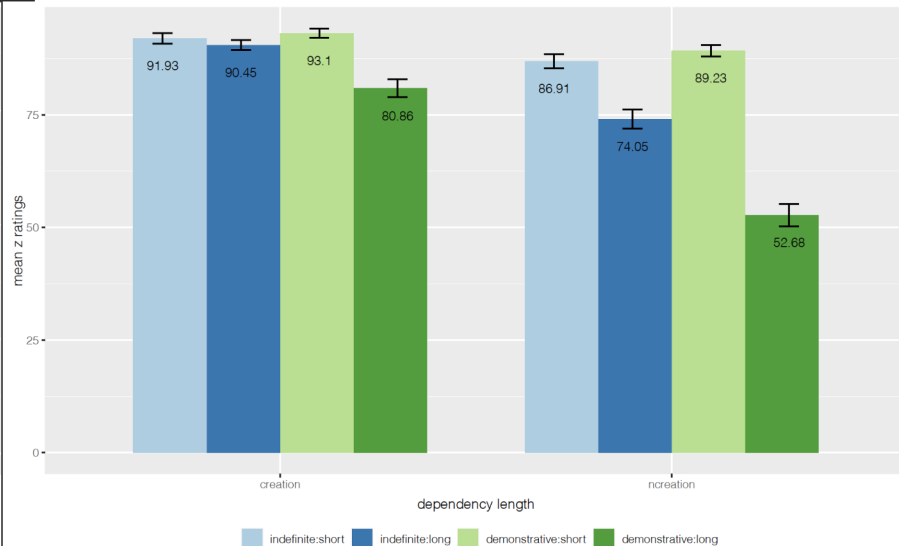
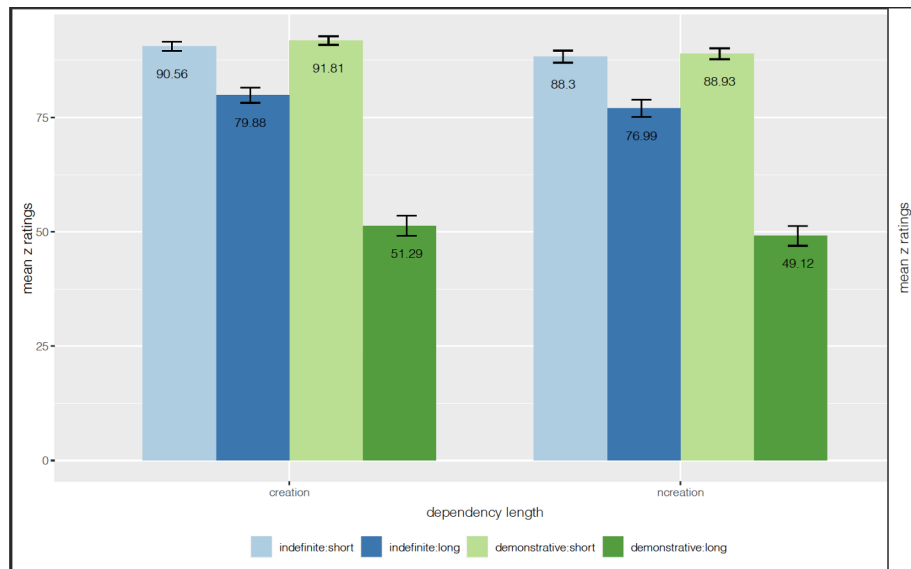
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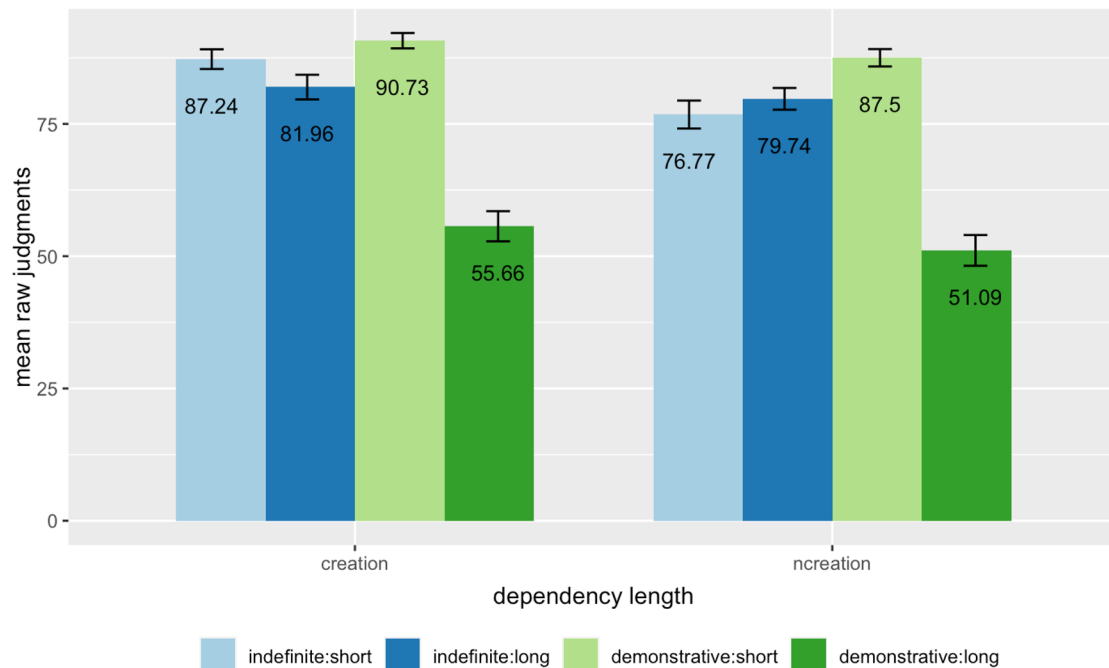
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Raw judgments from Chinese and English experiments



Raw judgments of the follow-up experiment



Why not dominance and Specificity?

1. Logically possible, but arguably inconsistent with the spirit of information structure-based proposals:

If what matters is communicative intent and information structure, then we predict cross-linguistic uniformity (cf. Goldberg 2006): a wh-element within the object of a VOC should be OK in Chinese.

The lack of VOC effect in Chinese is thus surprising even for Specificity + Dominance

2. The dominance status of definite NPs and Specificity result in a redundancy in the theory and we have independent evidence from wh-indefinite for Specificity.

Why not dominance and PIC+NI?

They make the same predictions so they will not be helping each other.

1. English nVOC: violates both
2. English VOC: violates neither → incorrectly predicted to be OK
3. Chinese nVOC: violates dominance
4. Chinese VOC: violates neither → incorrectly predicted to be OK

Also, they were designed to cover the same ground.

What kind of constraint is Specificity?

Specific NPs are referential.

The binding dependency however means that the specific NP is anaphoric.

C.-T. J. Huang (1982:404): an NP cannot be both referential and anaphoric.

“[Specificity]... spells out a special case of the law of contradiction and need not even be stated as a principle of grammar.”

	Results	information structure- based	Specificity Condition	PIC/Subjacency
Definiteness effect with nVOC in English	Yes	Yes	Yes	Yes
Definiteness effect with VOCs in English	Yes	No	Yes	No
VOC effect in English	Yes	Yes	No	Yes
Definiteness effect in nVOC in Mandarin	Yes	Yes	Yes	No
Definiteness effect in VOC in Chinese	Yes	No	Yes	No
VOC effect in Chinese	No	Yes	No	No

Freezing (Diesing 1992, Sichel 2018)

- Definite/presuppositional objects are covertly raised in English, blocking subextraction
- Objects of VOCs are not presuppositional, thus not an island
- Cannot explain the definiteness effect in English VOC
- Since Chinese wh-questions do not involve movement, no definiteness effect is predicted for Chinese.
- Specificity Condition + Freezing (same as Specificity + PIC)
 - English VOC: Specificity
 - English nVOC: Specificity + Freezing
 - Chinese VOC: Specificity
 - Chinese nVOC: Specificity

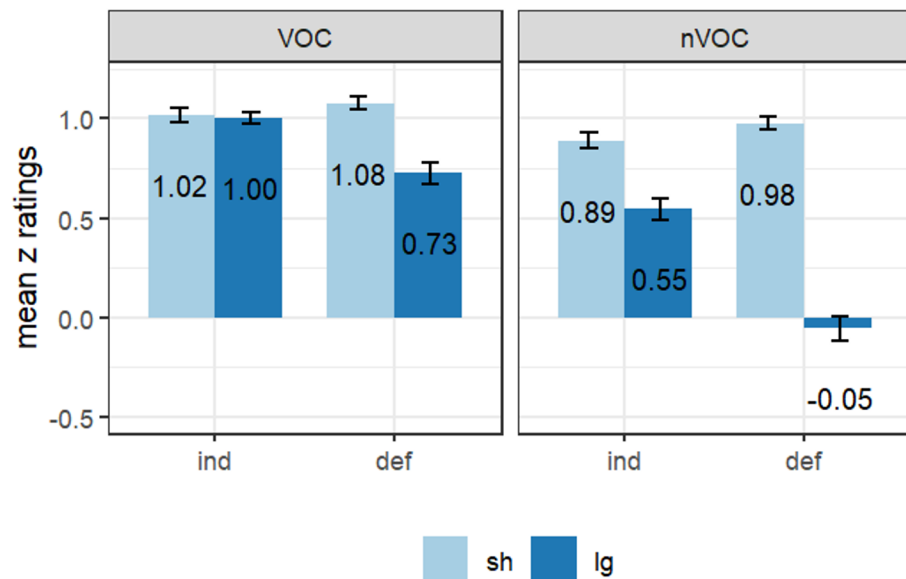
Appendix 1: Is the VOC effect specific to demonstrative DPs?

Maybe VOCs also increase the acceptability of subextraction from indefinite NPs.

Except that we cannot detect it reliably due to a ceiling effect.

VOC increases subextraction by 0.75 z-units

It's just the indefinite.long nVOC is at 0.56 and $0.56 + 0.75$ is at ceiling.



Experiment 3 in English: near replication of Exp 1

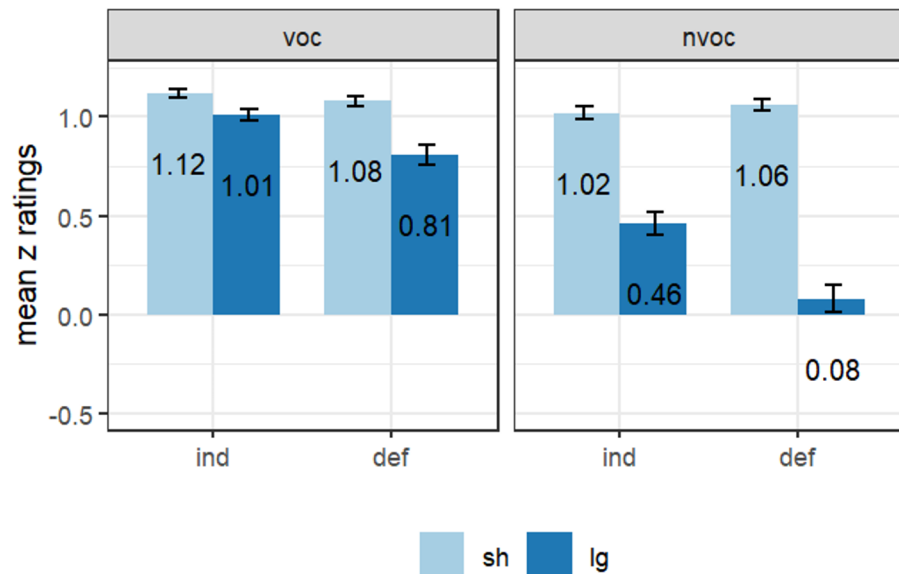
Changes made to short movement conditions:
subject 'who' questions → 'why' questions
subjects of all conditions → *you*

- Three way interaction: $p = .02$
- Two-way interaction of NP type and dependency length: significant when analyzed separately
 - definiteness effect in both VOC and nVOC
- Two-way interaction of dependency length and verb type: significant when analyzed separately
 - penalty of long movement is larger in Def than in Indef

DD score nVOC: 0.42

DD score VOC: 0.16

DDD score: 0.26



Experiment 4: making sentences longer to “lift the ceiling”

Changes:

- Proper nouns as the matrix subject, with a non-restrictive relative clause with a neg-licensed NPI inside
- Coordinated embedded subjects
- PP temporal modifier at the end

Non-changes:

- *why* questions as short conditions
- *you* is part of the embedded subject

If the VOC effect is a ceiling effect: we should see no three way interaction

If the VOC effect is real: we should still see it.

1. Emma, who never watches any TV, wonders why you and Liam promoted a TV show about superheroes last month.
2. Emma, who never watches any TV, wonders why you and Liam promoted that TV show about superheroes last month.
3. Emma, who never watches any TV, wonders what you and Liam promoted a TV show about last month.
4. Emma, who never watches any TV, wonders what you and Liam promoted that TV show about last month.

Experiment 4: making sentences longer to “lift the ceiling”

No three way interaction: $p = .92$

Marginal/No interaction between NP type and dependency length: $p = .09$

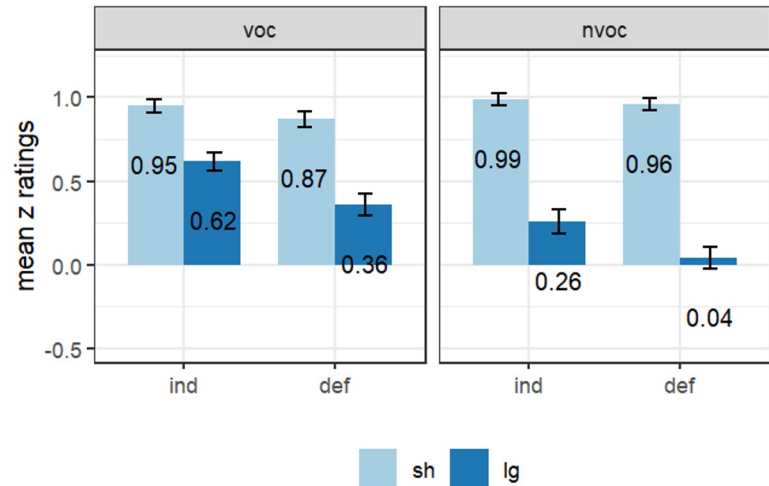
No interaction between NP type and verb type

Significant interaction between dependency length and verb type: extraction out of NPs is harder in nVOC

DD score nVOC: 0.19

DD score VOC: 0.18

DDD score: 0.01 (n.s)



What's VOC effect and what's the locality constraint

- The results here are preliminary.
- We did not find evidence that VOC ameliorate the definiteness effect
 - Contra Davies and Dubinsky, Erteschik-Shir, Diesing, etc
- Instead, it made extraction from both definite and indefinite NPs better
- What is ameliorated seems to be a general locality penalty of extraction out of NPs
- This penalty has several potential sources:
 - NPs are islands (Bach and Horn 1976)
 - Subjacency (vP and NP are phases/barriers)
 - Distance effect (comparing moving out of one vP to moving across two)
- VOC makes two domains one, ameliorating the penalty
 - Single event approach Lim 2022
 - N-V incorporation Davies and Dubinsky 2003

Theoretical consequence 2: Information structure approach

Information structure approaches (for discussion of English, see Erteschik-Shir 1981; Goldberg 2006; Abeillé et al. 2020)

- a. Only foregrounded / dominant NPs can be extracted.
- b. Definite objects are themselves dominant, so the NPs inside cannot be.
 - (*saw...*) *the picture of what* → dominant, *what* → can not be dominant
 - (*saw...*) *a picture of what* → not dominant, *what* → can be dominant
- c. Objects of VOCs are not dominant, NPs inside can be dominant.
 - (*took...*) *the picture of what* → not dominant, *what* → can be dominant

No clear predictions about Chinese.

- But if what matters is communicative intent and information structure status, then we predict cross-linguistic uniformity (cf. Goldberg 2006).