Cross-linguistic Analysis of the Mermaid Constructions in LFG

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Outline

Introduction

Descriptive Analysis

LFG Analysis

Cross-linguistic Analysis

Conclusion

In this talk...

Objective

- To analyze the Mermaid Constructions across languages with LFG

Background (from LFG 2022 at Groningen)

- "Mermaid Constructions in LFG"
- Takeaways: Mermaid Constructions are control and raising with a nominal predicate
- Evidence was mainly data from Japanese

What's new in this talk?

- Provide a cross-linguistic account

Mermaid Constructions

Coined by Tsunoda (2011[1], 2012[2], 2020[3])

Structure (by Tsunoda 2020)

[N_{SUBJ} ... V]$_{Clause}$ + N_{MC} + (Copula)[4]

- Tsunoda's analysis: V and N_{MC} compose a compound predicate
- thus MC is monoclausal: N_{SUBJ} ... [V + N + (Copula)]$_{CompPred}$

Examples

(1) Japanese (< Japonic; SOV)

Hanako=ga	[*Igirisu=ni*	*ik-u*]	*yotei=da*
Hanako=NOM	UK=DAT	go-NPST.ADN	plan(N)=COP

'Hanako is going to go to the UK. (*lit.* Hanako is the plan that goes to the UK)'

ADN: adnominal, COP: copula, NPST: non-past

[1] Tsunoda Tasaku. "Ningyo koubun: nihongogaku kara ippan gengogaku he no kouken". In: *NINJAL Research Papers* 1 (2011), pp. 53–75.

[2] Tasaku Tsunoda. "Ningyo koubun to meisi no bunpouka". In: *NINJAL Project Review* 7 (2012), pp. 3–11.

[3] Tasaku Tsunoda. *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020.

[4] The actual order is subject to language-specific word order.

Examples (contd.)

(2) Mitsukaido (< Japanese < Japonic; SOV)[5]

oraNte	[*gaNzizu=dage*	*udoN*	*ku-u*]	*eNŋi=da*
my:family.NOM	New_Year's_Day=only	udon	eat-NPST.ADN	origin=COP.NPST

'My family customarily eat udon only on New Year's Day.'

(3) Irabu (< Miyako < Ryukyuan < Japonic; SOV)[6]

kai=ga=du	[*sac=n*	*idi-r*]	*kutu*
3SG=NOM=FOC	first=DAT	go_out-NPST.ADN	thing

'S(he) should go first'

(4) Korean (< Koreanic; SOV)[7]

chinkwu=ka	[*ilpon=ey*	*ka-l*]	*yeyceng=i-ta*
friend=NOM	Japan=DAT	go-PROS.ADN	plan=COP-DECL

'(My) friend is going to Japan'

DECL: declarative, NMLZ: nominalizer, PROS: prospective

[5] Kan Sasaki. "Mitsukaido dialect of Japanese". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 125–166.

[6] Michinori Shimoji. "Irabu Ryukyuan". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

[7] Joungmin Kim. "Korean". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

Examples (contd.)

(5) Amdo Tibetan (< Tibeto-Burman < Sino-Tibetan; SOV)[8]

arɟa=kə	[*nor*	*ptsoŋ-ɟu*]	*ntɕʰarʑə*	*rɛ*
father=ERG	yak	sell.IPFV-NMLZ.GEN	plan	COP.B

'(My) father plans to sell yaks'

(6) nDrapa (Zhaba) (< Qiangic < Sino-Tibetan; SOV)[9]

ŋoro1	[*kaoʈoŋ1*	*l̥o=ɕi2*	*ɦdi=ʈɨ3*]	*nkhei1*	*rɛ*
3SG	high_school	learn=wish	think=IPFV	appearance	COP

'He seems to want to go to high school'

(7) Burmese (< Tibeto-Burman < Sino-Tibetan; SOV)[10]

t̻ù	[*dì*	*híɴ=gò*	*sá=dɛ̂*]	*póuɴ(=bɛ́)*
3SG	this	curry=KO	eat=ADN	shape(=EMP)

'(S)he seems to have eaten this curry'

B — pattern B (see Ebihara 2020), EMP — emphasis, KO — *kò/gò* (see Kato 2020)

[8] Shiho Ebihara. "Amdo Tibetan". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 419–464.

[9] Satoko Shirai. "nDrapa". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 465–509.

[10] Atsuhiko Kato. "Burmese". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

Examples (contd.)

(8) Kurukh (< Northern Dravidian < Dravidian; SOV)[11]

aːs-hiː	[*tamba-s-in*	*ilc-kaː*]	*caɖɖeː*	*rahc-aː*
3SG.M-GEN	own.father-M-ACC	fear.PS-PST.VADJ	necessity	COP.PS-PST.3SG.NM

'It was because he was afraid of his father'

(9) Sidaama (< Cushitic < Afro-Asiatic; SOV)[12]

íse	[*faraššó*	*guluf-f-annó*]	*gara-a=ti*
3SG.F.NOM	horse.ACCOBL	ride-3SG.F-IPFV.3	manner-LV=NPC.PRED.MOD

'She seems to ride a horse (habitually)'

(10) Bengali (< Indo-Iranian < Indo-European; SOV)[13]

tar	[*tokio=te*	*jawar*]	*kɔtʰa*
3SG.GEN	Tokyo=LOC	go.NMLZ.GEN	word

'It is planned that he s/he is going to Tokyo'

ACCOBL — Accusative-Oblique, LV — lengthened vowel, MOD — modified, NM — non-masculine, NPC — nominalized predicate clitic, PRED — predicative, PS — past stem, VADJ — verbal adjective

[11] Masato Kobayashi and Tasaku Tsunoda. "Kurux". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

[12] Kazuhiro Kawachi. "Sidaama". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

[13] Keisuke Huziwara. "A contrastive study of external adnominal clauses in Japanese and Bangla". In: *Bangabidya: International Journal of Bengal Studies* 10 (2018), pp. 358–367.

Examples: different case-marking in Tagalog

(11) Tagalog < Malayo-Polynesian < Austronesian; VSO)[14]

plano *ni=Noy* [*na* *b‹um›isita* *sa=Davao* *bukas*]
plan GEN=Noy LK visit‹AF:INF› OBL=Davao tomorrow

'Noy plans to go to Davao tomorrow'

(12) Tagalog < Malayo-Polynesian < Austronesian; VSO)

plano[*=ng* *b‹um›isita* *ni=Noy* *sa=Davao* *bukas*]
plan=LK visit‹AF:INF› GEN=Noy OBL=Davao tomorrow

'Noy plans to go to Davao tomorrow'

(13) Tagalog < Malayo-Polynesian < Austronesian; VSO)

mukha[*=ng* *bi-bisita* *si=Noy* *sa=Davao* *bukas*]
face=LK AF:CONT-visit NOM=Noy OBL=Davao tomorrow

'It seems that Noy will go to Davao tomorrow'

Genitive vs. Nominative
Position of *ni=Noy*

CONT — contemplative (prospective) aspect

[14] Masumi Katagiri. "Tagalog". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

Examples: Different case-marking in Tatar

(14) Tatar (< Kipchak < Turkic; SOV)[15]

siŋa	[*joqla-rɣa*]	*röxsät*
2SG.DAT	sleep-INF	permission

'You are allowed to sleep.'

(15) Tatar (< Kipchak < Turkic; SOV)[16]

Marat-nïŋ	[*joqla-rɣa*]	*isäb-e*
Marat-GEN	sleep-INF	thought-POSS.3

'Marat is going to sleep.'

Dative vs. Genitive (+ possessive agreement)

[15] Chihiro Taguchi. "Mermaid Construction in Tatar". In: *Proceedings of the 162nd Conference of the Linguistic Society of Japan*. 2021.

[16] Chihiro Taguchi. "Mermaid Construction in Tatar". In: *Proceedings of the 162nd Conference of the Linguistic Society of Japan*. 2021.

Examples: Copy raising in Egyptian Arabic

(16) Egyptian Arabic (< Arabic < Semitic < Afroasiatic; SVO)[17]

šakl *el-welād* [*kānu* *biyitderbo*]

shape DET-boy.PL be.PV.3PL beat.BI.IPFV.PASS.3PL

'The boys seem to have been beaten (*lit.* the boys' shape, they were beaten)'

(17) Egyptian Arabic (< Arabic < Semitic < Afroasiatic; SVO)

šakl-uhum [*waħašū-k*]

shape-POSS.3PL lack.PV.3PL-2SG.M

'It seems like you missed them! (*lit.* their shape, you missed them)'

The syntactic subject of the embedded finite clause is copied to the matrix clause

[17] Shaimaa ElSadek and Louisa Sadler. In: *Proceedings of the LFG15 Conference*. CSLI Publications, 2015.

Examples against the compound predicate analysis

Tsunoda (2020) says adjacent V and N become a compound predicate, but...

(18) Russian (< Slavic < Indo-European; SVO)

pora	*nam*	[*uxodit'*]
time	1PL.DAT	PF:leave:INF

'It is time for us to leave'

(19) Welsh (< Celtic < Indo-European; VSO)

Rhaid	*i*	*fi*	[*godi'n*		*gynnar*]
rhaid	i	fi	[godi	yn	gynnar]
necessity	to	1SG	wake_up.INF	in	early

'I need to wake up early'

- N_{MC} and V are not adjacent to each other in these languages
- How can they form a compound predicate? (they don't)

Typology of Mermaid Constructions

Case-marking of subject/agent

Case	Languages
NOM/ERG	Japanese, Mitsukaido, Irabu, Korean, Amdo-Tibetan, nDrapa, Burmese, Sidaama, Tagalog
GEN/POSS	Kurukh, Bengali, Tagalog, Tatar, Egyptian Arabic
DAT/to	Tatar, Russian, Welsh

Form of the embedded predicate

Function	Form	Languages
Adnominal	ADN	Japanese, Mitsukaido, Irabu, Korean, nDrapa, Burmese, Sidaama
	NMLZ.GEN	Amdo-Tibetan, Bengali
	VADJ	Kurukh
Infinitive		Tagalog, Tatar, Russian, Welsh
Finite		Tagalog, Egyptian Arabic

... Quite diverse

Proposal

Proposal (from LFG22)

- MC is anaphoric/functional control with a nominal predicate
- MC does not involve a compound predicate
- Therefore, MC is biclausal
- MC can be analyzed in LFG just like other anaphoric/functional control

Proposal (new)

- Typological diversity of MCs can be captured in f-structure
- different case-marking: subcategorization of predicates
- different verb forms:

Subject is in the matrix clause: Evidence 1

The following slides demonstrate that an MC subject is in the matrix clause.

- A comparison with the similar non-MC (21)
- In (21), *Hanako(=ga)* is inside the modifier clause, so an additional subject argument can be added in the matrix clause (otherwise *pro*).
- (20), in contrast, doesn't allow it
- the matrix subject is already occupied

(20) Japanese (MC)

*(*kore=ga)*	*Hanako=ga*	*sakana=o*	*yak-u*	*yotei=da*
this=NOM	Hanako=NOM	fish=OBJ	grill-NPST.ADN	plan(N)=COP

'Hanako is going to grill the fish.'

(21) Japanese (non-MC)

(kore=ga)	[*Hanako=ga*	*sakana=o*	*yak-u*]	*nioi=da*
this=NOM	Hanako=NOM	fish=ACC	grill-PRS.ADN	smell(N)=COP

'(This is) the smell that [comes from where] Hanako grills the fish.'

Subject is in the matrix clause: Evidence 2

- NOM-GEN alternation of a subject in relative clauses (in Japanese)
  - RC (23): NOM-GEN alternation ✓
  - MC (22): NOM-GEN alternation ×
- In MC, the subject is in the matrix clause

(22) Japanese (MC)

*Hanako={ga/*no}*	*sakana=o*	*yak-u*	*yotei=da*
Hanako=NOM/*GEN	fish=ACC	grill-NPST.ADN	plan(N)=COP

'Hanako is going to grill the fish.'

(23) Japanese (non-MC)

[Hanako={ga/no}	*sakana=o*	*yak-u]*	*nioi=da*
Hanako=NOM/GEN	fish=ACC	grill-NPST.ADN	smell(N)=COP

'(It is) the smell that [comes from where] Hanako grills the fish.'

Subject is in the matrix clause: Evidence 3

- Honorifics[18] in Japanese: the referent is its subject (Matsumoto 1996)[19]
  - In (25) *Hanako* can agree with *yotei*: matrix subject
  - In (26) *Hanako* cannot agree with *nioi*: embedded subject
- MC's subject is in the matrix clause (agreeing with Tsunoda (2020))

(24) Japanese (Hanako is honorified by the speaker)

Hanako=sama=ga	*sakana=o*	*oyakininar-u*
Hanako=HON=NOM	fish=ACC	grill:HON-NPST.DECL

'Hanako grills the fish.'

(25) Japanese (Hanako is honorified by the speaker)

Hanako=sama=ga	*sakana=o*	*yak-u*	*go-yotei=da*
Hanako=HON=NOM	fish=ACC	grill-NPST.ADN	HON-plan(N)=COP

'Hanako is going to grill the fish.'

(26) Japanese (Hanako is honorified by the speaker)

# *Hanako=sama=ga*	*sakana=o*	*yak-u*	*o-nioi=da*
Hanako=HON=NOM	fish=ACC	grill-NPST.ADN	HON-plan(N)=COP

'(It is) the smell that [comes from where] Hanako grills the fish.'

[18] I thank Chen Xie (Oxford) for suggesting this diagnostic.

[19] Yo Matsumoto. "Complex Predicates in Japanese: A Syntactic and Semantic Study of the Notion 'Word'". In: *Studies in Japanese Linguistics series* ().

Anaphoric/functional control analysis of MC

- **Observation**: Subject of MC is in the matrix clause
- **Point**: Some MCs are anaphoric control like (27), others are functional control like (28)
- **Intuition**: MCs function as modals, evidentials, aspects, and attitudes, just like verbs and adjectives of anaphoric/functional control
- In this section, syntactic diagnostics for anaphoric/functional control are applied to MCs
  - Passivization
  - Idiom chunks

(27) Japanese (anaphoric control)

Hanako=ga$_i$	[PRO$_i$	*Taroo=o*	*tatak-u*]	*ki=da*
Hanako=NOM	PRO	Taro=ACC	hit-NPST.ADN	feeling(N)=COP

'Hanako intends to hit Taro.'

(28) Japanese (functional control)

Hanako=ga$_i$	[t_i	*Taroo=o*	*tatak-u*]	*yotei=da*
Hanako=NOM		Taro=ACC	hit-NPST.ADN	plan(N)=COP

'Hanako is going to hit Taro.'

Syntactic tests: Passivization

- Functional control (29), (30): passivization does not change thematic relation
- Anaphoric control (31), (32): passivization does change thematic relation

(29) a. Tom seems to hit Jerry. *seem(hit(Tom, Jerry))*
b. Jerry seems to be hit by Tom. *seem(hit(Tom, Jerry))*

(30) a. Japanese (functional control)
Hanako=ga$_i$ [t$_i$ *Taroo=o* *tatak-u*] *yotei=da*
Hanako=NOM Taro=ACC hit-NPST.ADN plan(N)=COP
'Hanako is going to hit Taro: *planned(hit(h, t))*'

b. Japanese (functional control, passivized)
Taroo=ga$_i$ [t$_i$ *Hanako=ni* *tatak-are-ru*] *yotei=da*
Taro=NOM Hanako=DAT hit-PASS-NPST.ADN plan(N)=COP
'Taro is going to be hit by Hanako: *planned(hit(h, t))*'

- *yotei* shares a characteristic of a functional control predicate

Syntactic tests: Passivization

- Functional control (29), (30): passivization does not change thematic relation
- Anaphoric control (31), (32): passivization does change thematic relation

(31) a. Tom tries to hit Jerry. *try(Tom, hit(Tom, Jerry))*

b. Jerry tries to be hit by Tom. *try(Jerry, hit(Tom, Jerry))*

(32) a. Japanese (anaphoric control)

Hanako=ga$_i$	[PRO$_i$	*taroo=o*	*tatak-u*]	*ki=da*
Hanako=NOM	PRO	Taro=ACC	hit-NPST.ADN	feeling(N)=COP

'Hanako intends to hit Taro: *intend(h, hit(h, t))*'

b. Japanese (anaphoric control, passivized)

Taroo=ga$_i$	[PRO$_i$	*Hanako=ni*	*tatak-are-ru*]	*ki=da*
Taro=NOM	PRO	Hanako=DAT	hit-PASS-NPST.ADN	feeling(N)=COP

'Taro intends to be hit by Hanako: *intend(t, hit(h, t))*'

- *ki* shares a characteristic of an anaphoric control predicate

Syntactic tests: Idiom chunks

- Functional control (33 b), (34 b) keeps idiomatic meaning
- Anaphoric control only allows for literal meaning

(33) a. The cat is out of the bag. (i.e., the secret is revealed)

b. The cat seems to be out of the bag.

(34) a. Japanese

asi=ga *boo=ni* *nar-u*
leg=NOM stick=DAT become-NPST

'The legs become sticks (i.e., exhausted)'

b. Japanese

asi=ga *boo=ni* *nar-u* *yotei=da*
leg=NOM stick=DAT become-NPST.ADN plan(N)=COP

'The legs are going to be sticks (i.e., exhausted)'

- *yotei* shares a characteristic of a functional control predicate

Syntactic tests: Idiom chunks

- Functional control keeps idiomatic meaning
- Anaphoric control (35 b), (36 b) only allows for literal meaning

(35) a. The cat is out of the bag.

b. # The cat tries to be out of the bag.

(36) a. Japanese

asi=ga *boo=ni* *nar-u*
leg=NOM stick=DAT become-NPST

'The legs become sticks (i.e., exhausted)'

b. Japanese

\# *asi=ga* *boo=ni* *nar-u* *ki=da*
leg=NOM stick=DAT become-NPST.ADN plan(N)=COP

'The legs intend to become sticks'

- *ki* shares a characteristic of an anaphoric control predicate

(Hopefully theory-neutral) Interim summary

Tsunoda (2020)'s Analysis of MC

- V and N_{MC} compose a compound predicate
- MC is monoclausal

We have seen:

- MC can be treated as anaphoric/functional control
  - but with a noun predicate
- It follows that MC is biclausal

Next:

- Analyze MC in LFG

Motivation for an LFG analysis

- PRED readily allows for a nominal predicate
- Therefore, lexical entries of MC nouns (N_{MC}) have a similar form to anaphoric/functional control
  - Anaphoric control MC:
    - (↑ PRED) = '$N_{MC}\langle$(SUBJ|OBL$_\theta$), COMP$\rangle$[20]
    - (↑ COMP SUBJ PRED) = 'PRO'
  - Functional control MC:
    - (↑ PRED) = '$N_{MC}\langle$XCOMP$\rangle$SUBJ
    - (↑ SUBJ) = (↑ XCOMP SUBJ)
- COMP/XCOMP can readily handle the cross-linguistic variation of non-finite forms
  - Infinitive: Tagalog, Tatar, Russian, Welsh
  - Adnominal/verbal adjective: Japanese, Burmese, Kurukh, Sidaama, etc.
  - Verbal noun: Amdo Tibetan, Bengali
- Severing syntax, function, and semantics (c/f/s-structure)
  - Disentangling MC's mystery: 'Syntactically nominal, functionally predicative, and semantically abstract (modal, etc.)?'

[20] Whether SUBJ or OBL$_\theta$ is selected depends on each lexeme.

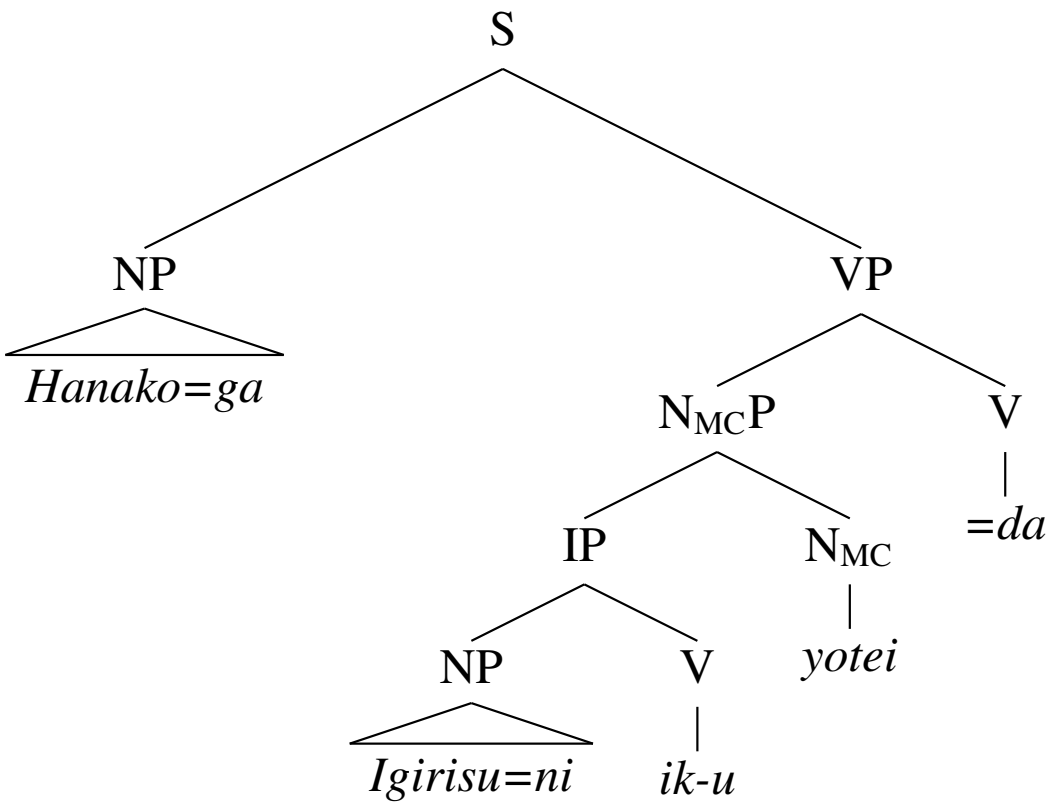
c-structure of functional control with N_{MC}

(37) Japanese (< Japonic)

Hanako=ga	*Igirisu=ni*	*ik-u*	*yotei=da*
Hanako=NOM	UK=DAT	go-NPST.ADN	plan(N)=COP

'Hanako is going to go to the UK.'

(38)



c-structure of anaphoric control with N_{MC}

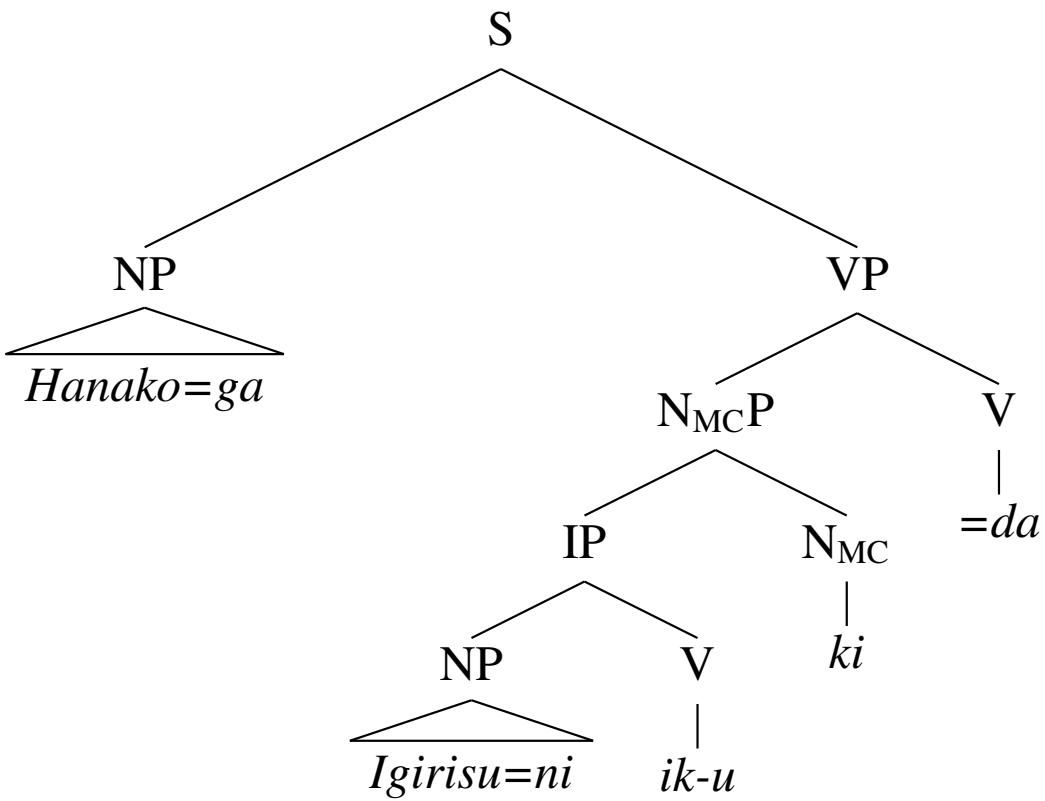
(39) Japanese (< Japonic)

Hanako=ga *Igirisu=ni* *ik-u* *ki=da*

Hanako=NOM UK=DAT go-NPST.ADN feeling(N)=COP

'Hanako intends to go to the UK.'

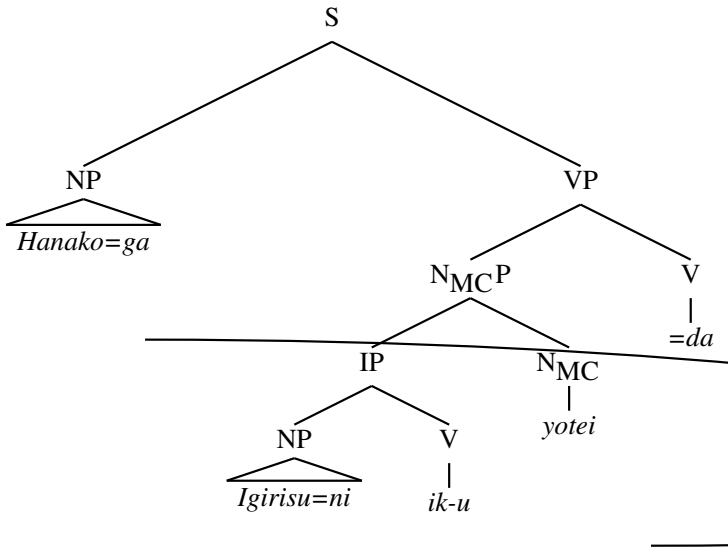
(40)



- c-structural form is the same in raising and equi (language-specific)

f-structure of functional control with N_{MC}

(41)

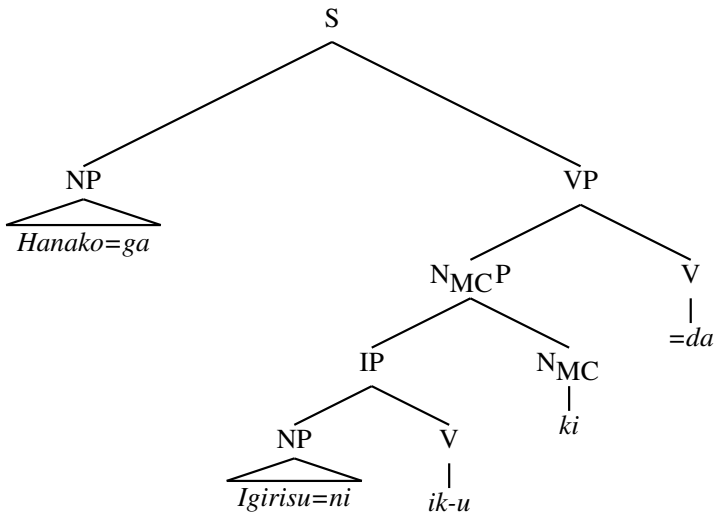


(42)

$$\begin{bmatrix} \text{PRED} & \text{`}planned\langle \text{XCOMP} \rangle \text{SUBJ'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`}Hanako\text{'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\ \text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`}go\langle \text{SUBJ} \rangle\text{'} \\ \text{SUBJ} & \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{`}UK\text{'} \\ \text{CASE} & \text{DAT} \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

f-structure of anaphoric control with N_{MC}

(43)



(44)

$$\begin{bmatrix} \text{PRED} & \text{`}\textit{feeling}\langle \text{SUBJ, COMP}\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`}\textit{Hanako}\text{'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{`}\textit{go}\langle \text{SUBJ}\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`PRO'} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{`}\textit{UK}\text{'} \\ \text{CASE} & \text{DAT} \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

- Raising and equi MCs have a different f-structure (lexical entries)

Semantics of the Mermaid Constructions

- The meaning of MCs can also be constructed in the same manner as functional/anaphoric control
- Following the semantic representation of raising and equi verbs by Dalrymple et al. (2019)[21]:
  - David seemed to yawn: *seem(yawn(David))*
  - David tried to yawn: *try(David, yawn(David))*
- We expect the same representation for MCs too:
  - Hanako=ga Nagoya=ni ik-u yotei=da: *planned(go(Hanako, UK))*
  - Hanako=ga Nagoya=ni ik-u ki=da: *feeling(Hanako, go(Hanako, UK))*
- Meaning constructors for N_{MC}:
  - raising: $\lambda P.yotei(P) : (\uparrow \textsc{xcomp})_\sigma \multimap \uparrow_\sigma$
  - equi: $\lambda P \lambda x.ki(x, P(x)) :$
    $((\uparrow \textsc{comp subj})_\sigma \multimap (\uparrow \textsc{comp pred})_\sigma) \multimap ((\uparrow \textsc{subj})_\sigma \multimap \uparrow_\sigma)$

[21] Mary Dalrymple, John J. Lowe, and Louise Mycock. *The Oxford Reference Guide to Lexical Functional Grammar*. Oxford University Press, 2019.

Predicting scope ambiguity of functional control

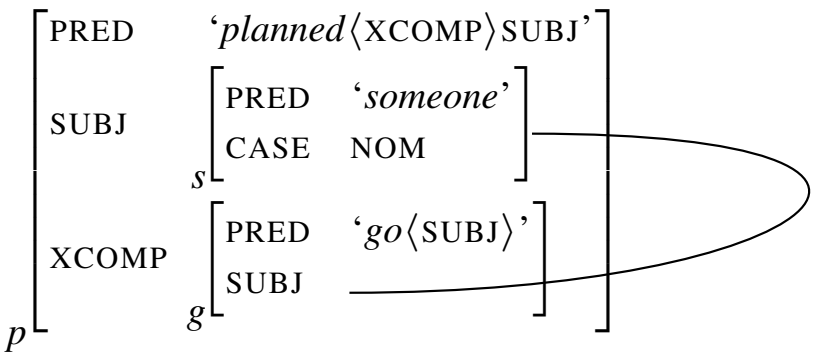
- Functional control analysis can correctly predict the scope of N_{MC}

(45) Japanese

dareka=ga	*ik-u*	*yotei=da*
someone=NOM	go-NPST.ADN	plan(N)=COP

'Someone is going to go. (wide: $\exists >$ plan, or narrow: plan $> \exists$)'

(46)



(47)

[yotei]	$\lambda P.planned(P)$	:	$g_\sigma \multimap p_\sigma$
[dareka]	$\lambda S.exist(x, person(x), S(x))$	:	$\forall H.(s_\sigma \multimap H) \multimap H$
[iku]	$\lambda x.\ go(x)$	:	$s_\sigma \multimap g_\sigma$

(48) Narrow:

[dareka-iku]	$exist(x, person(x), go(x))$	:	g_σ
[dareka-iku-yotei]	$planned(exist(x, person(x), go(x)))$	:	p_σ

(49) Wide:

[iku-yotei]	$\lambda x.planned(go(x))$	:	$s_\sigma \multimap p_\sigma$ [22]
[dareka-iku-yotei]	$exist(x, person(x), planned(go(x)))$	:	p_σ

[22] by conditional proof

Predicting the scope of anaphoric control

- Anaphoric control analysis correctly restricts the scope

(50) Japanese

dareka=ga	*ik-u*	*ki=da*
someone=NOM	go-NPST.ADN	feeling(N)=COP

'Someone intends to go. (wide: $\exists >$ intend; *narrow: intend $> \exists$)'

(51)
$$\begin{bmatrix} \text{PRED} & \text{`}intend\langle \text{SUBJ, COMP}\rangle\text{'} \\ \text{SUBJ} & s\begin{bmatrix} \text{PRED} & \text{`}someone\text{'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\ \text{COMP} & g\begin{bmatrix} \text{PRED} & \text{`}go\langle \text{SUBJ}\rangle\text{'} \\ \text{SUBJ} & \text{`PRO'} \end{bmatrix} \end{bmatrix}_i$$

(52)
$$\begin{array}{lrcl} \textbf{[ki]} & \lambda P \lambda x.intend(x, P) & : & (s_\sigma \multimap g_\sigma) \multimap (s_\sigma \multimap i_\sigma) \\ \textbf{[dareka]} & \lambda S.exist(x, person(x), S(x)) & : & \forall H.(s_\sigma \multimap H) \multimap H \\ \textbf{[iku]} & \lambda x.\ go(x) & : & s_\sigma \multimap g_\sigma \end{array}$$

(53) Wide:
$$\begin{array}{lrcl} \textbf{[iku-ki]} & \lambda x.intend(go(x)) & : & s_\sigma \multimap i_\sigma \\ \textbf{[dareka-iku-ki]} & exist(x, person(x), intend(go(x))) & : & p_\sigma \end{array}$$ [23]

- Narrow scope is underivable

[23] by conditional proof

Interim Summary

- MCs can be analyzed as raising/equi in LFG.
- Parallelism with conventional verbal/adjectival raising/equi in terms of:
  - c-structure
  - f-structure
  - semantics (Glue)
- These structures disentangle the core mystery of MC:
  - 'Syntactically nominal, functionally predicative, and semantically abstract'

	Verbal	Adjectival	Nominal
Control	English *try*	English *eager*	Japanese *yotei*
Raising	English *seem*	English *likely*	Japanese *ki*
			↑ MC

Cross-linguistic analysis

We have seen mainly from Japanese data:

- Mermaid Constructions as raising/equi
- Anaphoric control MC:
  - $(\uparrow \text{PRED}) = \text{`N}_{\text{MC}}\langle(\text{SUBJ}|\text{OBL}_\theta), \text{COMP}\rangle$[24]
  - $(\uparrow \text{COMP SUBJ PRED}) = \text{`PRO'}$
- Functional control MC:
  - $(\uparrow \text{PRED}) = \text{`N}_{\text{MC}}\langle\text{XCOMP}\rangle\text{SUBJ}$
  - $(\uparrow \text{SUBJ}) = (\uparrow \text{XCOMP SUBJ})$

How general are these formulations? Are they valid in other languages? Arguments from here are ongoing work with sloppy points; comments are much appreciated.

[24] Whether SUBJ or OBL_θ is selected depends on each lexeme.

Dative case-marking in Tatar

Hypothesis 1: Control by OBL_θ

- *röxsät* subcategorizes for $\langle \text{OBL}_\theta, \text{COMP} \rangle$
- OBJ_θ controls $(\uparrow \text{COMP SUBJ})$

(54) Tatar ($<$ Kipchak $<$ Turkic; SOV)[25]

Marat-qa [*joqla-rɣa*] *röxsät*
Marat-DAT sleep-INF permission
'Marat is allowed to sleep.'

(55)
$$\begin{bmatrix} \text{PRED} & \text{`}permission\langle \text{OBL}_\theta, \text{COMP} \rangle\text{'} \\ \text{OBL}_\theta & g\begin{bmatrix} \text{PRED} & \text{`}Marat_i\text{'} \\ \text{CASE} & \text{DAT} \end{bmatrix} \\ \text{COMP} & h\begin{bmatrix} \text{PRED} & \text{`}sleep\langle \text{SUBJ} \rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`PRO}_i\text{'} \end{bmatrix} \end{bmatrix} \end{bmatrix}_f$$

[25] Chihiro Taguchi. "Mermaid Construction in Tatar". In: *Proceedings of the 162nd Conference of the Linguistic Society of Japan*. 2021.

Dative case-marking in Russian

Seemingly working similarly

(56) Russian (< Slavic < Indo-European; SVO)

pora *nam* [*uxodit'*]
time 1PL.DAT PF:leave:INF

'It is time for us to leave'

$$f\begin{bmatrix} \text{PRED} & \text{`}time\langle \text{OBL}_\theta, \text{COMP}\rangle \\ \text{OBL}_\theta & g\begin{bmatrix} \text{PRED} & \text{`PRO}_i\text{'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{PL} \\ \text{CASE} & \text{DAT} \end{bmatrix} \\ \text{COMP} & h\begin{bmatrix} \text{PRED} & \text{`LEAVE}\langle \text{SUBJ}\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`PRO}_i\text{'} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Prepositional phrase as OBL_θ in Welsh

In Welsh, the oblique argument is expressed by a prepositional phrase *i*

(57) Welsh (< Celtic < Indo-European; VSO)

Rhaid	*i*	*fi*	[*godi'n*		*gynnar*]
rhaid	i	fi	[godi	yn	gynnar]
necessity	to	1SG	wake_up.INF	in	early

'I need to wake up early'

$$
\begin{bmatrix}
\text{PRED} & \text{`}necessity\langle \text{OBL}_\theta, \text{COMP} \rangle\text{'} \\
\text{OBL}_\theta & g\begin{bmatrix}
\text{PRED} & \text{`}to\langle \text{OBJ} \rangle\text{'} \\
\text{OBJ} & \begin{bmatrix}
\text{PRED} & \text{`PRO}_i\text{'} \\
\text{PERS} & 1 \\
\text{NUM} & \text{SG}
\end{bmatrix}
\end{bmatrix} \\
\text{COMP} & h\begin{bmatrix}
\text{PRED} & \text{`}wake_up\langle \text{SUBJ} \rangle\text{'} \\
\text{SUBJ} & \text{`PRO}_i\text{'} \\
\text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{`}early\text{'} \end{bmatrix} \right\}
\end{bmatrix}
\end{bmatrix}_f
$$

Genitive case-marking in Tatar

Hypothesis 2: Control by genitive SUBJ

- *isäp* subcategorizes for ⟨SUBJ, COMP⟩
- The possessive suffix on the MC noun is encoded as the value of PERS

(58) Tatar (< Kipchak < Turkic; SOV)[26]

Marat-nïŋ [*joqla-rɣa*] *isäb-e*
Marat-GEN sleep-INF thought-POSS.3
'Marat is going to sleep.'

(59)
$$f\begin{bmatrix} \text{PRED} & \text{`}thought\langle \text{SUBJ, COMP}\rangle\text{'} \\ \text{SUBJ} & g\begin{bmatrix} \text{PRED} & \text{`}Marat_i\text{'} \\ \text{CASE} & \text{GEN} \end{bmatrix} \\ \text{COMP} & h\begin{bmatrix} \text{PRED} & \text{`}sleep\langle \text{SUBJ}\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`PRO}_i\text{'} \end{bmatrix} \end{bmatrix} \\ \text{PERS} & 3 \end{bmatrix}$$

[26] Chihiro Taguchi. "Mermaid Construction in Tatar". In: *Proceedings of the 162nd Conference of the Linguistic Society of Japan*. 2021.

Genitive case-marking in Tagalog

Tagalog MC noun *plano* would work similarly:

(60) Tagalog < Malayo-Polynesian < Austronesian; VSO)[27]

plano *ni=Noy* [*na* *b‹um›isita* *sa=Davao* *bukas*]
plan GEN=Noy LK visit‹AF:INF› OBL=Davao tomorrow
'Noy plans to go to Davao tomorrow'

$$f\begin{bmatrix}
\text{PRED} & \text{`}plan\langle \text{SUBJ, COMP}\rangle\text{'} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`}Noy_i\text{'} \\ \text{CASE} & \text{GEN} \end{bmatrix} \\
\text{COMP} & h\begin{bmatrix} \text{PRED} & \text{`}visit\langle \text{SUBJ}\rangle\text{'} \\ \text{SUBJ} & \text{`PRO}_i\text{'} \\ \text{OBL} & \left\{ \begin{bmatrix} \text{PRED} & \text{`}Davao\text{'} \\ \text{CASE} & \text{OBL} \end{bmatrix} \right\} \end{bmatrix}
\end{bmatrix}$$

[27] Masumi Katagiri. "Tagalog". In: *Mermaid Construction: A Compound-Predicate Construction With Biclausal Appearance*. Ed. by Tasaku Tsunoda. Comparative Handbooks of Linguistics. Mouton de Gruyter, 2020, pp. 781–816.

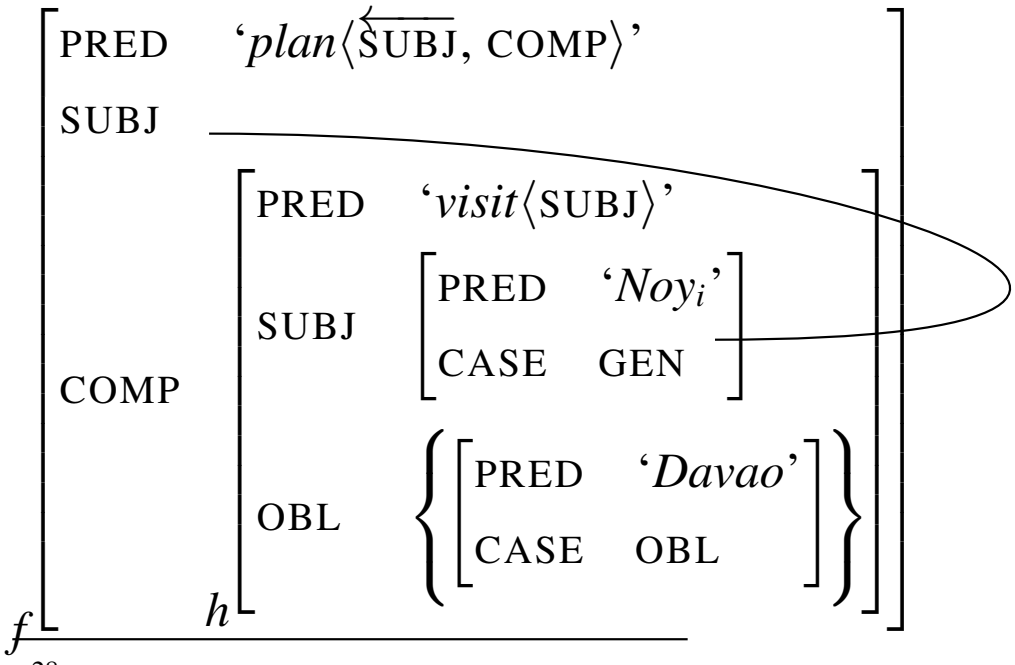
Genitive in embedded infinitival clause in Tagalog

How about this?

(61) *plano*[=*ng* *b‹um›isita* *ni=Noy* *sa=Davao* *bukas*]
plan=LK visit‹AF:INF› GEN=Noy OBL=Davao tomorrow
'Noy plans to go to Davao tomorrow'

Hypothesis 3: Optional backward control raising in Tagalog

- Anaphoric controller in the matrix clause can be functionally controlled by the embedding SUBJ (backward control raising[28])



[28] Susi Wurmbrand. "On forward and backward raising". In: *Proceedings of the 32nd West Coast Conference on Formal Linguistics*. Somerville, MA, 2015.

Finite COMP in Tagalog

mukha 'face' in Tagalog employs a finite COMP

(62) *mukha*[=*ng* *bi-bisita* *si=Noy* *sa=Davao* *bukas*]
face=LK AF:CONT-visit NOM=Noy OBL=Davao tomorrow
'It seems that Noy will go to Davao tomorrow'

Hypothesis 4: Obligatory backward raising in Tagalog

- *mukha* 'face' obligatorily triggers backward raising[29]

$$\begin{bmatrix} \text{PRED} & \text{`}face\langle \text{COMP} \rangle \overleftarrow{\text{SUBJ}}\text{'} \\ \text{SUBJ} & \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{`}visit\langle \text{SUBJ} \rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`}Noy\text{'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\ \text{OBL} & \left\{ \begin{bmatrix} \text{PRED} & \text{`}Davao\text{'} \\ \text{CASE} & \text{OBL} \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

[29] Susi Wurmbrand. "On forward and backward raising". In: *Proceedings of the 32nd West Coast Conference on Formal Linguistics*. Somerville, MA, 2015.

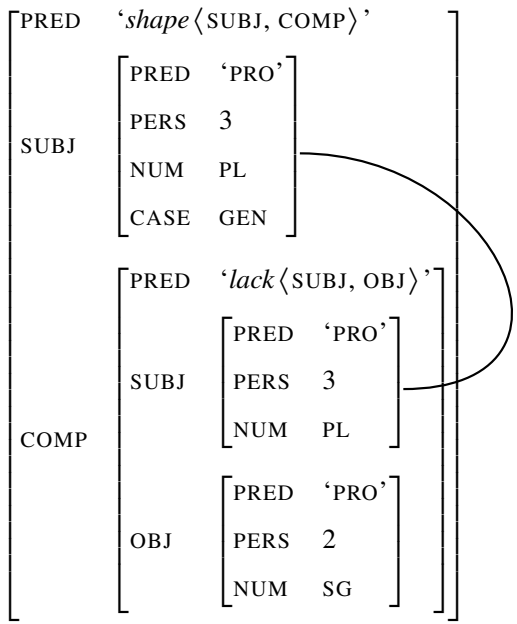
Copy raising in Egyptian Arabic

Egyptian Arabic MC (in a way) "repeats" the subject

(63) *šakl-uhum* [*waħašū-k*]
shape-POSS.3PL lack.PV.3PL-2SG.M
'It seems like you missed them! (*lit.* their shape, you missed them)'

Hypothesis 5: Copy raising in Egyptian Arabic

- *šakl* in Egyptian Arabic causes copy raising[30]



[30] Shaimaa ElSadek and Louisa Sadler. In: *Proceedings of the LFG15 Conference*. CSLI Publications, 2015.

Conclusion

This presentation has shown (from LFG22):

- Descriptive (theory-neutral) evidence for biclausal analysis of MC
- Syntactic evidence for anaphoric/functional control analysis
- LFG's merits to analyze MCs:
  - LFG readily allows for nominal predicates
  - COMP/XCOMP covering cross-linguistically diverse non-finite forms
  - Treating each module separately (syntax — (interface) — semantics)

New:

- Possible analyses for peculiar cases of MCs across languages
- Anaphoric/functional control analysis seems to hold
- Language-specific scrutiny is still much needed

Thank you!

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