

Polysynthesis and word-formation

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Introduction

An **isolating** language:

(1) ***Mandarin Chinese:***

wo mei mai shu

I NEG buy book

'I did not buy the book.'

Introduction

An **isolating** language:

(1) **Mandarin Chinese:**

wo mei mai shu

I NEG buy book

'I did not buy the book.'

A **polysynthetic** language:

(2) **Inuktitut:**

uqalima:gaʔta:qqauŋjittuŋa

uqalimaagaq-taaq-qqau-nngit-tunga

book-get-REC.PST-NEG-DECL.1S.S

'I did not buy the book (earlier today).'

Introduction

(3) ***Inuktitut:***

annulaksi-kkanni-nginna-jualu-gasu-lauqsima-guma-nngit-tsiaq-galuaq-tunga
imprison-again-really-a.lot-try-ever-want-NEG-EMPH-EMPH-DECL.1S.S
'I would never ever even want to try to end up in jail ever again even for a bit.'
(Johns, 2007)

Introduction

“This type is called the incorporative or polysynthetic. It tends to the excessive and abnormal agglomeration of distinct significant elements in its words; whereby, on the one hand, cumbrous compounds are formed as the names of objects, and a character of tedious and time-wasting polysyllabism is given to the language.” - William Dwight Whitney, 1867

Introduction

Geography of polysynthesis:

- ▶ **North/Central America:** Eskimo-Aleut languages, Algonquian languages, Nahuatl
...
- ▶ **South America:** Guarani, Quechua, various Amazonian languages ...
- ▶ **Asia/Oceania:** Ainu, Chukotko-Kamchatkan languages, Gunwinjuan languages,
various Papua New Guinean languages ...

Introduction

Today's goal: Develop a theory of morphosyntax (word-building/affixation and sentence-building) that accounts for languages like Mandarin Chinese **and** languages like Inuktitut.

Word-formation

To understand how polysynthetic words are formed, let's first discuss how complex (= **multimorphemic**) words are formed more generally.

Word-formation

(4) **French**

a. Nous **parlons** souvent français
we speak.1P often French
'We often speak French.'

*Nous souvent **parlons** français

b. Nous ne **parlons** pas français
we NE speak.1P not French
'We don't speak French.'

*Nous ne pas **parlons** français

Word-formation

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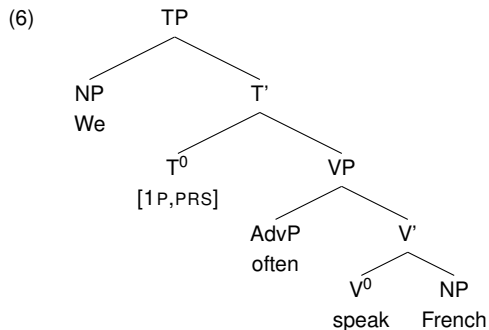
- c. ... ne pas **parler** français
NE not speak.INF French
'to not speak French'

*ne **parler** pas français

Word-formation

How do we derive French word order, given a (simplified) D-structure like in (6)?

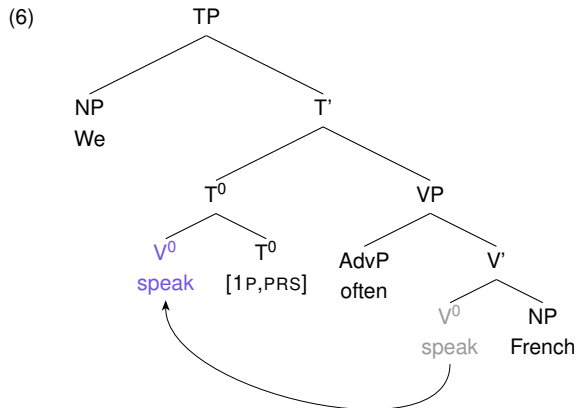
- (5) Nous **parlons** souvent français
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Word-formation

How do we derive French word order, given the D-structure in (6)?

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Word-formation

In addition to moving past the adverb, there's another consequence of V^0 -to- T^0 head movement...

- (7) a. Je parl-**e** 'I speak'
- b. Tu parl-**es** 'You (sg.) speak'
- c. Il/elle parl-**e** 'He/she speaks'
- d. Nous parl-**ons** 'We speak'
- e. ...

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Affixation!

Word-formation

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Word-formation

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- ▶ To do so, we need to establish that Inuktitut morphemes are **syntactic heads**—i.e. that Inuktitut has a **clausal syntax**.

Word-formation

Is the order of morphemes in Inuktitut surprising? Unsurprising?

(8) ***Inuktitut:***

- a. kaapiturunnaqqauvit?
kaapi-tuq-gunnaq-qqau-vit?
coffee-consume-can-REC.PST-INTERR.2S.S
'Were you able to drink coffee (earlier today)?'

Word-formation

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kaapi-tuq-gunnaq-qqau-vit?

coffee-consume-can-REC.PST-INTERR.2S.S

'Were you able to drink coffee (earlier today)?'

b. [OBJECT] - VERB] - MODAL] - TENSE] - CLAUSE TYPE]

Word-formation

And what do these data reveal?

(9) ***Inuktitut:***

- a. anigiaqaqqtuq
ani-giaqaq-qquuq-tuq
go.out-should-probably-DECL.3S.S
'She probably should go out.'

- b. aniquugiaqaqtuq
ani-qquuq-giaqaq-tuq
go.out-probably-should-DECL.3S.S
'She should probably go out.'

Word-formation

And what do these data reveal?

(10) ***Inuktitut***:

- a. anaanatsiakuluk
anaana-**tsiaq**-kuluk
mother-great-adorable
'adorable grandmother' (*cf. anaana-tsiaq* 'grandmother')

- b. anaanakuluttsiaq
anaana-**kuluk**-**tsiaq**
mother-adorable-great
'good, adorable mother'

Word-formation

The Mirror Principle (Baker, 1985): Morpheme order mirrors the hierarchy of syntactic projections.

Word-formation

Given all that we've said so far, can we use **head movement** to account for Inuktitut morpheme order? How?

(11) ***Inuktitut:***

kaapiturunnaqqauvit?

kaapi-tuq-gunnaq-qqau-vit?

coffee-consume-can-REC.PST-INTERR.2S.S

'Were you able to drink coffee (earlier today)?'

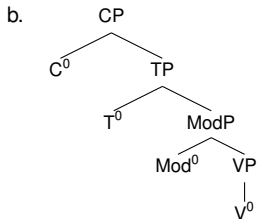
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- ▶ Let's ignore the object ('coffee') for now...

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Word-formation

Given all that we've said so far, can we use head movement to account for Inuktitut morpheme order? How?

- ▶ Let's ignore the noun ('coffee') for now. . .

(11) ***Inuktitut***:

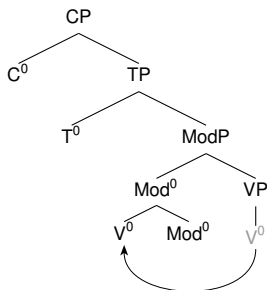
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'Were you able to drink coffee (earlier today)?'

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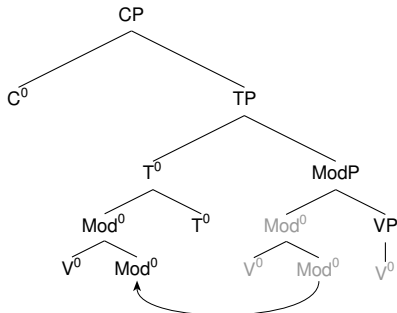
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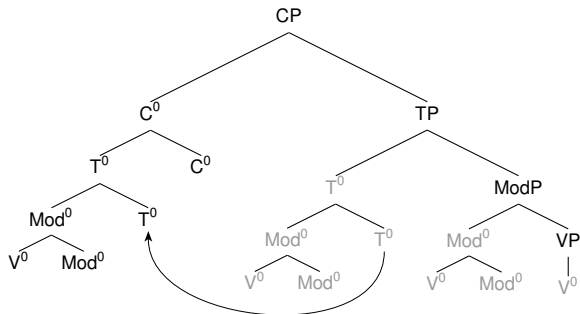
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coffee-consume-can-REC.PST-INTERR.2S.S

'Were you able to drink coffee (earlier today)?'

b.



Word-formation

Inuktitut vs. French:

(12) **French:**

- a. Nous **parlons** souvent français
we speak.1P often French
'We often speak French.'
- b. Nous **avons** souvent parlé français
we have.1P often spoken French
'We often spoke French.'
- c. *Nous **-ons** souvent **avoir-parlé** français
- d. *Nous **av-ons-parlé** souvent français

Noun incorporation

How do we “incorporate” the noun into our analysis so far?

(13) ***Inuktitut:***

kaapiturunnaqqauvit?

kaapi-tuq-gunnaq-qqau-vit?

coffee-consume-can-REC.PST-INTERR.2S.S

‘Were you able to drink coffee (earlier today)?’

Noun incorporation

Do the new data in (14-b-c) help?

(14) ***Inuktitut***:

a. kaapiturunnaqqauvit?

kaapi-tuq-gunnaq-qqau-vit?

coffee-consume-can-REC.PST-INTERR.2S.S

'Were you able to drink coffee (earlier today)?'

b. kaapiturunnaqqauvit **marruunik**?

kaapi-tuq-runnaq-qqau-vit

marruuk-nik?

coffee-consume-can-REC.PST-INTERR.2S.S two-OBL

'Were you able to drink two coffees (earlier today)?'

c. kaapiturunnaqqauvit **mamaqturmik**?

kaapi-tuq-runnaq-qqau-vit

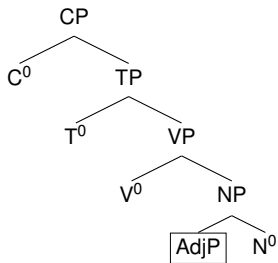
mamaq-tuq-mik?

coffee-consume-can-REC.PST-INTERR.2S.S tasty-PART-OBL

'Were you able to drink a tasty coffee (earlier today)?'

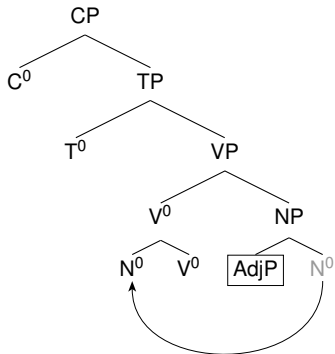
Noun incorporation

(15)



Noun incorporation

(15)



Noun incorporation and argument structure

Like Inuktitut, Mohawk is polysynthetic and has noun incorporation. (Unlike Inuktitut, Mohawk morpheme order is not very straightforward).

- ▶ Assuming N^0 -to- V^0 head movement in Mohawk too, are these data—in particular, (16-b-c)—surprising?

(16) **Mohawk:**

- wa'-k-nakt-hninu-'
FACT-1 SG-bed-buy-PUNC
'I bought a bed.'
- *wa'-t-ka-wir-ahs \wedge 'tho-'
FACT-DUP-NS-baby-cry-PUNC
Intended: 'The baby cried.'
- wa'-ka-wir- \wedge '-ne'
FACT-NS-baby-fall-PUNC
'The baby fell.'

(Baker, 1988)

Noun incorporation and argument structure

Two classes of intransitive verbs:

- (17) Cry Fall
 Laugh Die
 Sing Melt
 Smile Break
 Dance Freeze

Noun incorporation and argument structure

Some diagnostics (in English):

(18) ***Causative-inchoative alternations:***

- a. I broke the door.
- b. The door broke.

Noun incorporation and argument structure

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(18) ***Causative-inchoative alternations:***

- a. I broke the door.
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(19) ***Resultatives:***

- a. I broke the door open.
- b. The door broke open.

Noun incorporation and argument structure

Some diagnostics (in English):

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- a. I broke **the door**.
- b. **The door** broke.

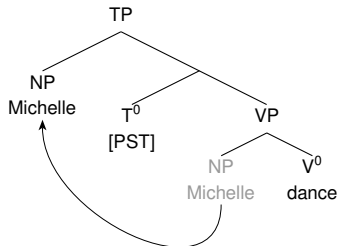
(19) ***Resultatives:***

- a. I broke **the door** open.
- b. **The door** broke open.
- c. *I cried tired.
- d. I cried **myself** tired.
- e. *I cried **myself**.

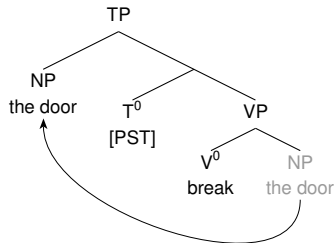
Noun incorporation and argument structure

Unergative vs. unaccusative verbs:

(20) a.



b.



Noun incorporation and argument structure

Back to Mohawk—how might we now account for this contrast?

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FACT-1 SG-bed-buy-PUNC
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Conclusion

“This type is called the incorporative or polysynthetic. It tends to the excessive and abnormal agglomeration of distinct significant elements in its words; whereby, on the one hand, cumbrous compounds are formed as the names of objects, and a character of tedious and time-wasting polysyllabism is given to the language.” - William Dwight Whitney, 1867

Conclusion

“This type is called the incorporative or polysynthetic. It tends to the excessive and abnormal agglomeration of distinct significant elements in its words; whereby, on the one hand, cumbrous compounds are formed as the names of objects, and a character of tedious and time-wasting polysyllabism is given to the language.” - William Dwight Whitney, 1867

Actually:

- ▶ Polysynthetic languages may be analyzed as using the **same word-forming** processes as found in non-polysynthetic languages.
- ▶ Polysynthetic languages also have **clausal syntax**—reflected in morpheme order.
- ▶ ... As well as other diagnostics, e.g. **unergative vs. unaccusative distinction**.

References I

- Baker, Mark. 1985. The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16:373–415.
- Baker, Mark. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.
- Johns, Alana. 2007. Restricting noun incorporation: root movement. *Natural Language and Linguistic Theory* 25:535–576.

Bonus 1: Suffixes and prefixes

In what ways are Inuktitut and Chamorro similar? In what ways are they different? How shall we derive the morpheme order in Chamorro?

(22) ***Inuktitut:***

kaapiturunnaqqauvit?

kaapi-tuq-gunnaq-qqau-vit?

coffee-consume-can-REC.PST-INTERR.2S.S

'Were you able to drink coffee (earlier today)?'

(23) ***Chamorro:***

Hu-na'-fan-otchu siha

1SG.S-CAUS-PL-eat them

'I made them eat.'

Bonus 2: German?

Is German also polysynthetic?

(24) **German:**
generalstaatsverordnetenversammlungen
general-staats-verordneten-versammlungen
'general states representatives meetings'

(25) **Inuktitut:**

a. uqalimaagaqarvik
uqalimaagaq-qaq-vik
book-have-place
'library'

b. uqalimaagaqarvingmuuttunga
uqalimaagaq-qaq-vik-muut-tunga
book-have-place-go.to-DECL. 1 S.S
'I am going to the library.'