

Two types of nonconcatenative morphology in signed languages

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Roadmap

- Background: Aronoff et al (2005)
- Proposal: Two Types of Non-concatenative Morph.
- Argument: Phonological Constraints
- Predictions: a) Iconcity and b) Linguistic Innovation
- Summary: Revisiting Aronoff et al (2005)

- **Background:** **Aronoff et al (2005)**
- **Proposal:** Two Types of Non-concatenative M.
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- **Predictions:** a) Iconcity and b) Linguistic Innovation
- **Summary:** Revisiting Aronoff et al (2005)

Simultaneous M. (Nonconcatenative M.)	Sequential M. (Concatenative M.)
Universal across SLs	Specific to individual SLs
Related to spatial cognition	Not related to spatial cognition
Motivated	Arbitrary
Not related to free words	Grammaticized from free words
Semantically coherent	Less semantically coherent
Productive	Limited productivity
Less individual variation	Considerable individual variation
Examples: Verb agreement and classifier constructions	Examples: Derivational affixes

- Core Issue: To which category do other morphological processes belong?
 - Numeral incorporation
 - Aspectual modulations
 - Nominal number and verbal number
 - Adverbial modifications

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- Type 1: All morphemes within a sign have a fixed realization

- Type 2: At least one morpheme within a sign does not have a fixed realization

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Argument:

The two types interact with *phonological constraints* differently

Test: Data

- Forms elicited with non-verbal stimuli in DGS (German SL) and ASL with special focus on numeral incorporation and verb agreement
- Three native Deaf signers per SL
- Focus on patterns within each *individual* signer (due to a range of possible sociolinguistic factors)
- Data coded for a) phonological parameters of signs and b) divergences from target form

Type 1: Numeral Incorporation

- All morphemes within a sign have a **fixed** realization

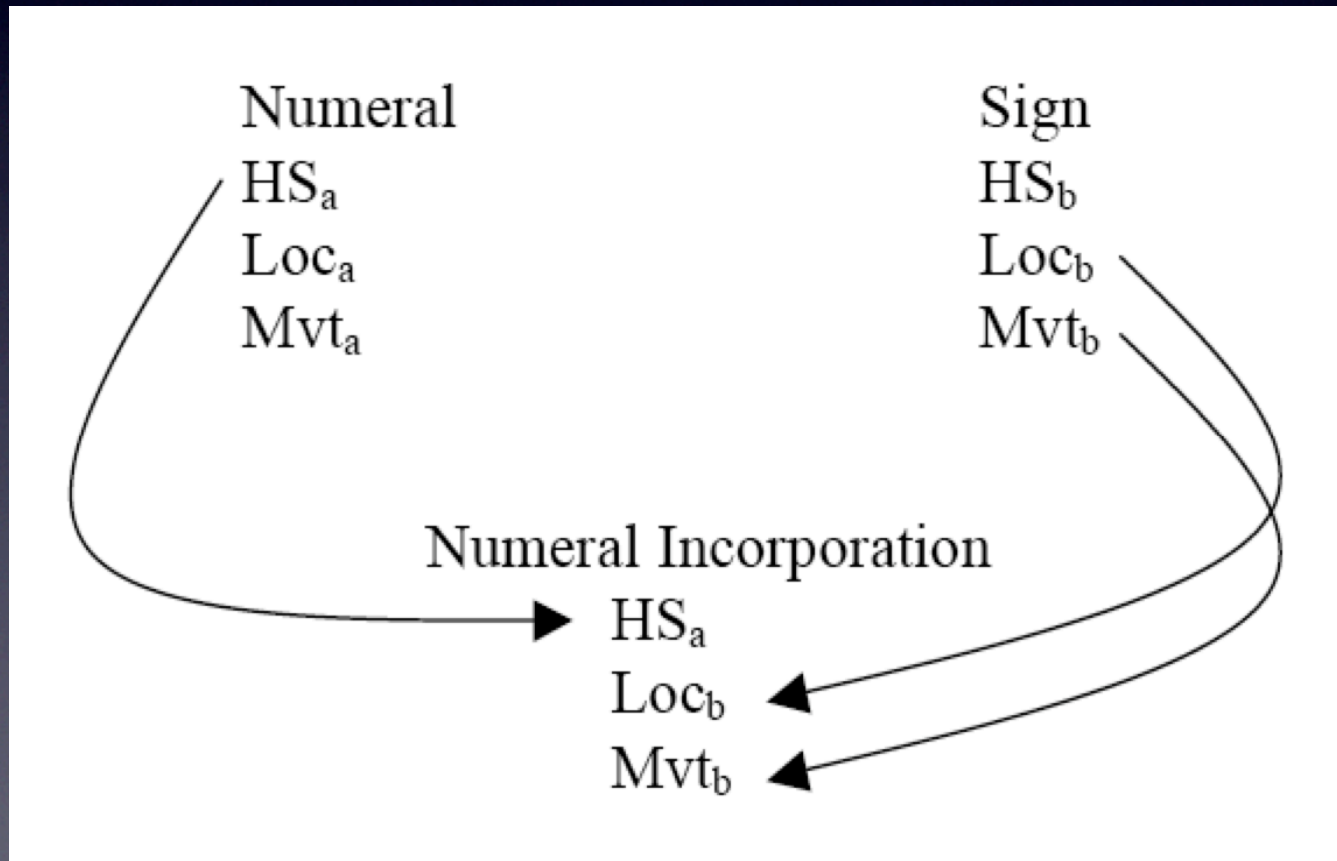
Combines two morphemes with fixed specification:

numeral -> fixed handshape

lexical item -> fixed location, orientation, movement

Type 1: Numeral Incorporation

- All morphemes within a sign have a **fixed** realization



Type 1: Numeral Incorporation

- All morphemes within a sign have a **fixed** realization

ASL:

- numerals ONE through NINE may be incorporated
- numerals TEN and above are not
- have a particular hand-internal movement
- if overlaid with movement of lexical item, results in *complex* movement that is marked

=> Degree of complexity

- compare with DGS ZEHN+WOCHE (*ten weeks*)

Type 1: Numeral Incorporation

- All morphemes within a sign have a **fixed** realization

DGS:

lexical items like WOCHE 'week' may incorporate numerals

other lexical items like MINUTE 'minute' do not

- have a particular handshape ('F')
- handshape is marked and cannot be rewritten

=> *preservation of lexical specification*

Type 1: Numeral Incorporation

- All morphemes within a sign have a **fixed** realization

Two kinds of phonological constraints on numeral incorporation:

a) constraint against high **degree of complexity** (markedness)

b) constraint **preserving marked lexical specifications**
(faithfulness)

Similar to language-internal constraints seen in other languages
=> not necessarily modality-specific

Type 1: Other Morphological Processes

- All morphemes within a sign have a **fixed** realization

- aspectual modulations
- nominal number
- verbal number
- adverbial modifications

=> constraint against high **degree of complexity**
(markedness)

Type 1: Other Morphological Processes

- All morphemes within a sign have a **fixed** realization

- **aspectual modulations**

- nominal number

- verbal number

- adverbial modifications

not possible to overlay form of some aspectual morphemes (e.g. continuative) with movement of verbs that is already repeated

=> constraint against high **degree of complexity**
(markedness)

Type 1: Other Morphological Processes

- All morphemes within a sign have a **fixed** realization

- aspectual modulations
- **nominal number**
- verbal number
- adverbial modifications

availability of reduplication constrained by the form of the noun (see Pfau and Steinbach)

=> constraint against high **degree of complexity**
(markedness)

Type 1: Other Morphological Processes

- All morphemes within a sign have a **fixed** realization

- aspectual modulations
- nominal number
- **verbal number**
- adverbial modifications

not possible to overlay the multiple arc with lexicalized repeated movement

=> constraint against high **degree of complexity**
(markedness)

Type 1: Other Morphological Processes

- All morphemes within a sign have a **fixed** realization

- aspectual modulations
- nominal number
- verbal number
- **adverbial modifications**

not possible to overlap two non-manual markers on the mouth

=> constraint against high **degree of complexity**
(markedness)

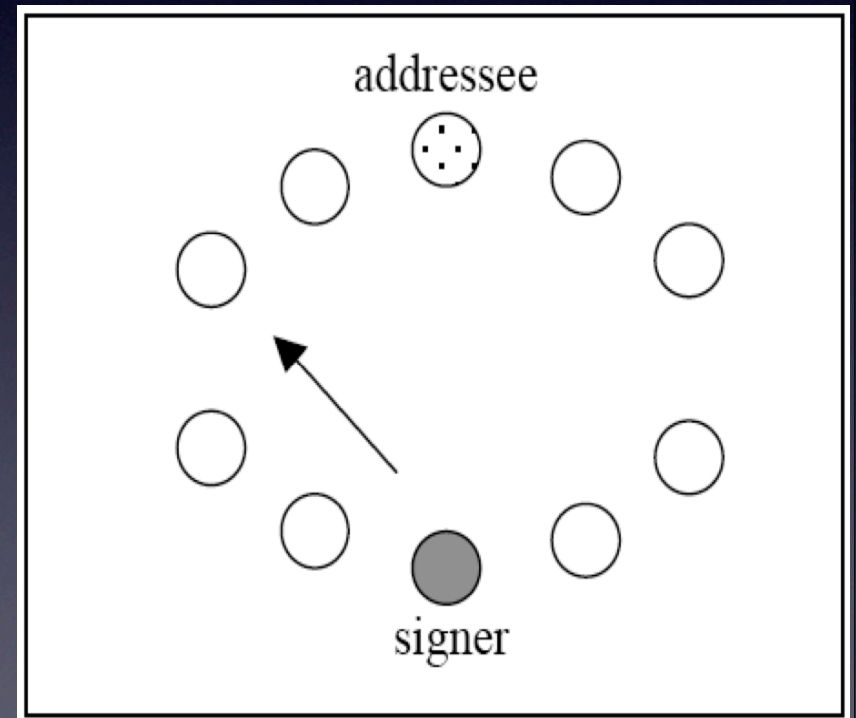
Type 2: Verb Agreement

- At least one morpheme within a sign does not have a fixed realization

Marks agreement between the verb and subject and object with respect to person features:

verb -> fixed handshape, location, manner of movement

person -> (not fixed) orientation / direction of movement



Type 2: Verb Agreement

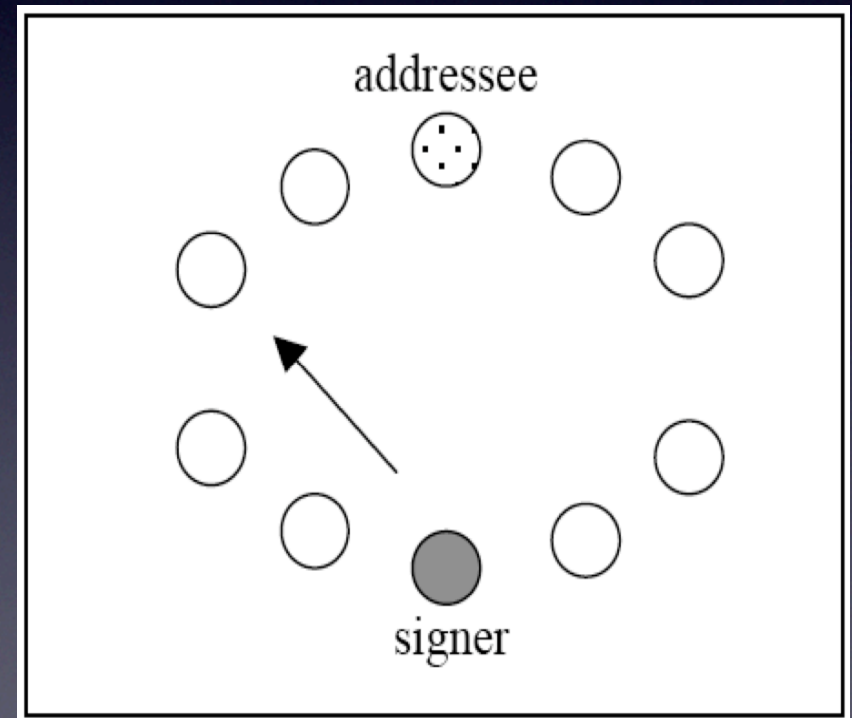
- At least one morpheme within a sign does not have a fixed realization

ASL: 'she-VERB-him' form

HELP realizes this form

GET-HOLD-OF does not realize this form due to strain on arm
(solution: switch dominance)

=> degree of articulation



Type 2: Verb Agreement

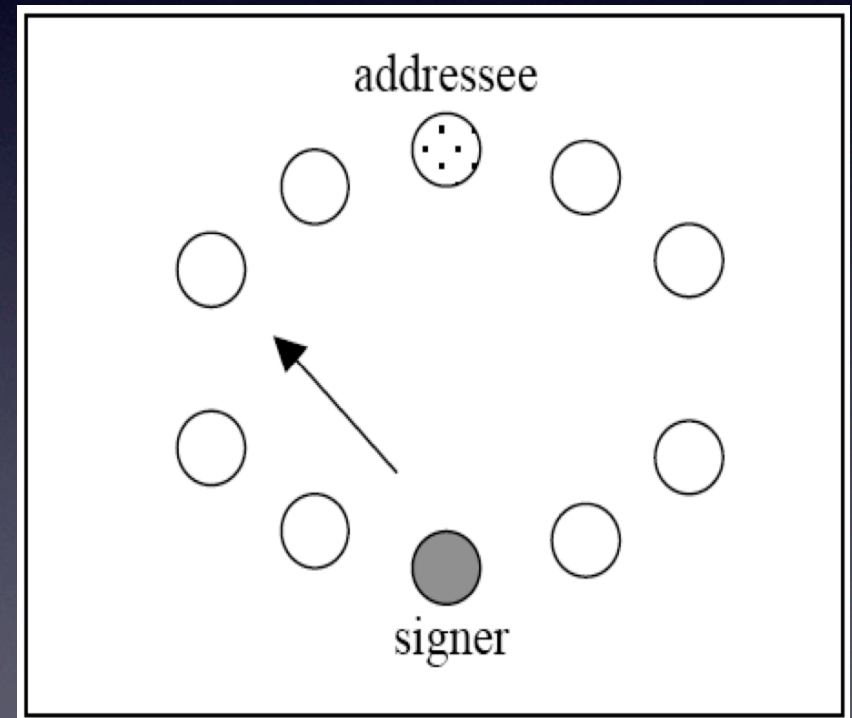
- At least one morpheme within a sign does not have a fixed realization

ASL: 'I-VERB-you-all' form

TEST realizes this form by crooking the index finger *repeatedly* as it is moved in an arc near the addressee

ASK realizes this form by crooking the index finger once as it is moved in an arc near the addressee

=> *degree of complexity*



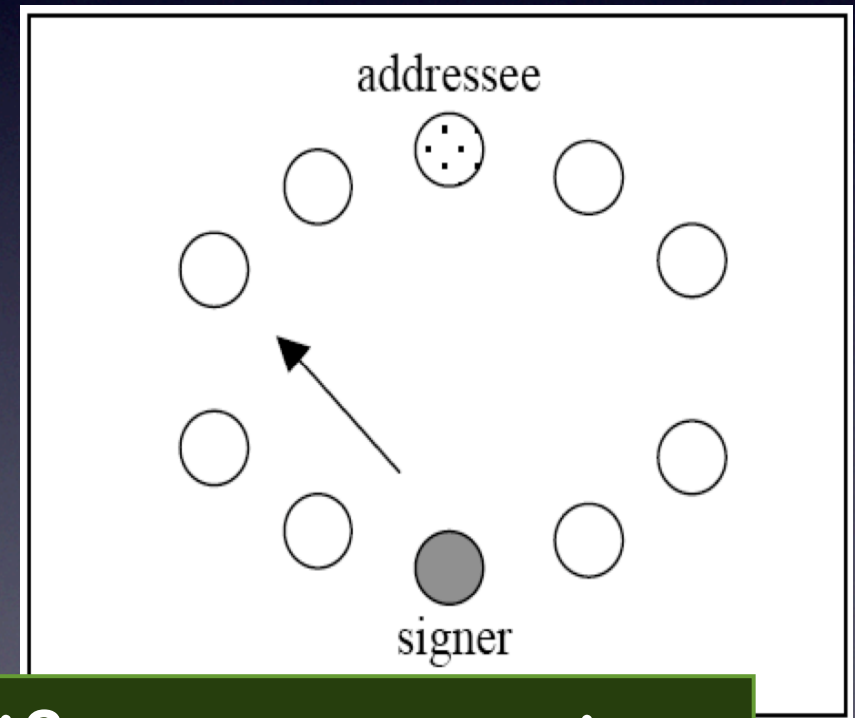
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ASK realizes this form by crooking the index finger once as it is moved in an arc near the addressee



Also applies to some classifier constructions

Type 2: Summary

- At least one morpheme within a sign does not have a fixed realization

Two kinds of phonological constraints:

a) constraint against complex movement – (*degree of complexity*)

=> seen in Type 1

b) constraint rooted in the limits of articulatory system, e.g. against hyper-pronation – (*degree of articulation*)

=> not seen in Type 1

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Iconicity

- Sequential morphology: may have iconic roots, but relatively reduced (*degenerated*)
- Type 1 morphology: tend be iconic (e.g. in showing temporal progression) but not depend on interface with gestural space (*imagistic/degenerated*)
- Type 2 morphology: depends on interface with spatial conceptual structure (and expressed through interface with gestural space) (*diagrammatic/imagistic*)

Linguistic innovation

- Sequential morphology: emerge as morphemes with *complete* lexical specifications, which can undergo grammaticization
- Type 1 morphology: emerge as morphemes with *partial* lexical specifications, which can undergo further grammaticization
- Type 2 morphology: emerge through linguistic innovation (Supalla 2002, Rathmann and Mathur 2008) and remain constant over time

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Type 2 Nonconcatenative	Type 1 Nonconcatenative	Sequential Concatenative
Subject to constraints on degree of articulation	Not subject to constraints on degree of articulation	Not subject to constraints on degree of articulation
Related to spatial cognition	Not related to spatial cognition	Not related to spatial cognition
Diagrammatic/imagistic iconicity	Imagistic/degenerated iconicity	Degenerated iconicity
Emerges through linguistic innovation	Appears through grammaticization of process	Grammaticized from free words
Universal across SLs	Less language-specific variation	More language-specific variation
Unique to SLs	Not necessarily unique to SLs	Not unique to SLs
Examples: Verb agreement and classifier constructions	Examples: Num. inc., aspect, number, adv. mod.	Examples: Derivational affixes