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# Answering negative questions in American Sign Language

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# Answering negative questions

## Polarity-based System (e.g. Swedish)

Yes/no expresses  
**positive/negative polarity.**

- (1) *Amy*: Är du inte trött?  
'Are you **not** tired?'
- a. *Zoe*: Nej (jag är inte trött).  
(Lit.) 'No, (I am **not**).'
- b. *Zoe*: Jo.  
(Lit.) 'Yes, (I am).'

## Truth-based System (e.g. Korean, Japanese)

Yes/no **(dis)confirms** the truth of  
the negative proposition.

- (2) *Amy*: an himtule?  
'Are you **not** tired?'
- a. *Zoe*: ung (an himtule).  
(Lit.) 'Yes, (I am **not** tired).'
- b. *Zoe*: ani (himitul-e).  
(Lit.) 'No, (I am tired).'

(Pope 1972, Holmberg 2015)

# The English Answering System

✓ *Yes/no* can express **positive/negative polarity**.

(3) *Amy*: Are you not tired ?

a. *Zoe*: No, I am not.

b. *Zoe*: Yes, I am.

✓ *Yes/no* **can (dis)confirm** the truth of the negative proposition.

(4) *Amy*: Are you not tired ?

a. *Zoe*: Yes, I am not.

b. *Zoe*: No, I am.

# Goals of today's talk

- How does ASL fit into the typological picture? (No previous work.)
- Compare the answering of negative polar questions
  - ◆ At the discourse level
  - ◆ Within the same clause

# Roadmap

- Background on ASL
- Answering negative questions in ASL
- New Insights on the semantics/syntax/pragmatic interface in sign languages
- The proposal

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# ASL polar questions

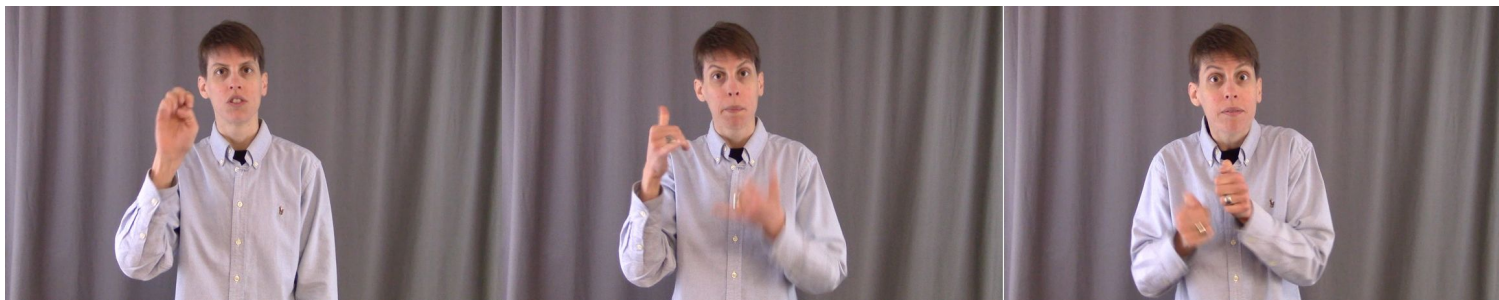
Same word order but **different non-manual marking**.

(5) a. ZOE PLAY VIDEO GAME.

'Zoe plays video games.'

b. ZOE PLAY VIDEO GAME<sup>brow-raise ?</sup>

'Does Zoe play video games?'



# Negation in ASL

- **Two components:** Manual signs & Non-manual markers

(6) a. JOHN NOT headshake BUY HOUSE  
'John is not buying a house.'

(Neidle et al. 2000)

b. JOHN NOT BUY HOUSE headshake  
'John is not buying a house.'

- **Non-manual negation alone** can negate a sentence.

(7) a. \*JOHN NOT BUY HOUSE

(Neidle et al. 2000)

b. JOHN BUY HOUSE headshake  
'John is not buying a house.'



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# Discourse Level

*Amy:* ZOE PLAY VIDEO GAME  $\overline{\text{NEVER}}$ <sup>headshake</sup>  
'Zoe never plays video games.'

*Ben (to Zoe):* IX<sub>Zoe</sub>  $\overline{\text{NEVER}}$ <sup>brow-raise ?</sup>  
'You never play video games?'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can agree** with the polarity of the question.

(8) *Zoe:*  $\overline{\text{NO}}$ <sup>headshake</sup>, IX<sub>Zoe</sub>  $\overline{\text{NEVER}}$ <sup>headshake</sup>  
'No, I never play video games.'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(9) *Zoe:*  $\overline{\text{NO}}$ <sup>headshake</sup>, IX<sub>Zoe</sub> ONCE-IN-A-WHILE  
'No, I play video games once in a while.'

# At the level of the discourse



# Below discourse level: Question-Answer clauses

The **same signer** produces the Q-constituent as well as the A-constituent, evidence that each behave as an embedded clause (Caponigro and Davidson 2011)

(10) [<sub>Q-constituent</sub> AMY BUY WHAT<sup>brow-raise</sup> ], [<sub>A-constituent</sub> BOOK]  
'What Amy bought is a book.'

(Caponigro & Davidson 2011)

(11) [<sub>Q-constituent</sub> I LAUGH<sup>brow-raise</sup> ], [<sub>A-constituent</sub> NO<sup>headhake</sup>]  
'I was not laughing.'



# Answering negative questions in QACs

Amy: ZOE PLAY VIDEO GAME  $\overline{\text{NEVER}}$ <sup>headshake</sup>

'Zoe never plays video games.'

\*  $\overline{\text{NO}}$ <sup>hs</sup> **cannot agree** with the polarity of the question.

(12) Zoe: \* $[\text{IX}_{\text{Zoe}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}$ <sup>brow-raise</sup>], [ $\overline{\text{NO}}$   $\overline{\text{NEVER}}$ <sup>headshake</sup>]

('I never play video games.')

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(13) Zoe:  $[\text{IX}_{\text{Zoe}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}$ <sup>brow-raise</sup>], [ $\overline{\text{NO}}$ <sup>headshake</sup> ONCE-IN-A-WHILE]

'I do play video games once in a while.'

# Answering negative questions in QACs



# Interim Summary

	At the discourse level	In Question-Answer clauses
$\overline{\text{NO}}^{\text{hs}}$ <b>can agree</b> with the (negative) polarity of the question.	✓	*
$\overline{\text{NO}}^{\text{hs}}$ <b>can disconfirm</b> the truth of the negative proposition.	✓	✓

*Tested with:* NEVER, NOTHING, NONE

# Positive answers

*Amy:* ZOE PLAY VIDEO GAME NEVER<sup>headshake</sup>  
'Zoe never plays video games.'

*Ben (to Zoe):* IX<sub>Zoe</sub> NEVER<sup>brow-raise ?</sup>  
'You never play video games?'

➤ **Variation** at the level of the discourse

(14) a. *Zoe:* % YES<sup>head nod</sup>, IX<sub>Zoe</sub> NEVER<sup>headshake</sup>  
'Yes, I never play video games.'

b. *Zoe:* % YES<sup>head nod</sup>, IX<sub>Zoe</sub> ONCE-IN-A-WHILE  
'Yes, I play video games once in a while.'

➤ In **QACs**, YES<sup>hn</sup> **cannot confirm** the truth of the negative proposition.

(15) a. *Zoe:* \* [IX<sub>Zoe</sub> PLAY VIDEO GAME NEVER<sup>br</sup>], [YES<sup>hn</sup> NEVER<sup>hs</sup>] ('I never play video games.')

b. *Zoe:* % [IX<sub>Zoe</sub> PLAY VIDEO GAME NEVER<sup>br</sup>], [YES<sup>hn</sup> ONCE-IN-A-WHILE] 'I do play video games once in a while.'



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# Question-Answer Clauses

What is the structure of QACs ?

- QACs are Question-Answer pairs at the discourse level (Hoza et al. 1997).
- QACs form a syntactic and a semantic unit.
  - ◆ ASL equivalent of pseudoclefts (Wilbur 1994, 1996)
  - ◆ Embedded question-answer pairs (Caponigro & Davidson 2011)

# Q-constituent is not a discourse level question

- **No doubling of the *wh*-word**, as in embedded questions.  
(Petronio & Lillo-Martin 1997, Wilbur 1994)

(16) JOHN BUY WHAT YESTERDAY WHAT?  
'What did John buy yesterday.'

- (17) a. \*HE ASK JOHN BUY WHAT YESTERDAY WHAT.  
(‘He asked what John bought yesterday.’)  
b. \*JOHN BUY WHAT YESTERDAY WHAT, BOOK.  
(‘What John bought yesterday was a book.’)

- **Different non-manual marking** of the Q-constituent. (Wilbur 1994)

Matrix Constituent Interrogative	Q-constituent of a QAC
Brow furrowing	Brow raising

# Polar QACs also differ from discourse level pairs

➤ **No doubling of the verb**, as in embedded questions.

(18) a YOU LIKE SALAD LIKE ?

'Do you like salad ?'

b. \*MOM WONDER BROTHER LIKE SALAD LIKE.

('Mom wonders whether her brother likes salad.')

(Davidson & Caponigro 2016)

(19) \*<sub>1</sub>[IX, LIKE SALAD LIKE], [NO HATE]

('I do not like salad.')

➤ **Negative answers** are more **restricted**.

# Embedded question-answer pairs

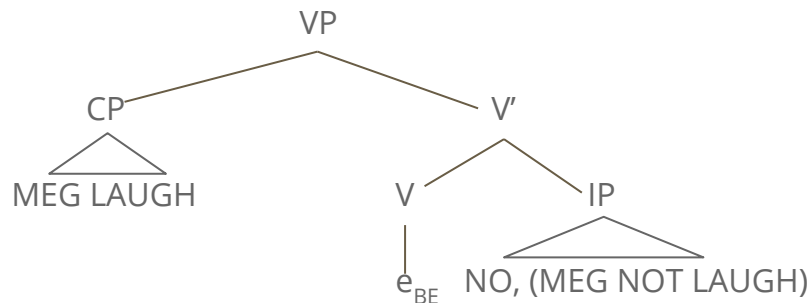
- Pseudocleft analysis excludes structures involving polar questions.

(20) [What John bought] was [a book].

(21) a. \*[Whether John bought a book] is [no/he didn't].

b. \*[Should John get a car] is [yes/he should].

- Polar QACs are **embedded question-answer pairs** !



(Caponigro & Davidson 2011)

# Sign language typology: Two systems of negation

**Non-manual Dominant**  
(e.g. ASL, DGS)

**Non-manual NEG is required**  
to negate a sentence.

(22) *American Sign Language* (Neidle et al. 2000)

- a. \*JOHN NOT BUY HOUSE
- b. JOHN BUY HOUSE<sup>headshake</sup>  
'John is not buying a house.'

**Manual Dominant**  
(e.g. LIS, TID)

**Manual NEG is required**  
to negate a sentence.

(23) *Italian Sign Language* (Geraci 2006)

- a. \*PAOLO CONTRACT SIGN<sup>headshake</sup>
- b. PAOLO CONTRACT SIGN NOT<sup>headshake</sup>  
'Paolo didn't sign the contract.'

(Zeshan 2006)

# Assertions vs. Questions

➤ Assertions: **Negative headshake is obligatory.**

(24) a. ZOE PLAY VIDEO GAME NEVER.<sup>headshake</sup>  
'Zoe never plays video games.'

b. \*ZOE PLAY VIDEO GAME NEVER.

➤ Polar questions: **Negative headshake is not obligatory.**

(25) I<sub>Zoe</sub> NEVER.<sup>brow-raise ?</sup>  
'You never play video games?'

# Double negation readings

- ASL usually shows **strong negative concord** (Fischer 2006, Wood 1999).

(26) IX<sub>1</sub> **NOT**<sup>headshake</sup> HAVE HOMEWORK **NOTHING**<sup>headshake</sup>  
'I don't have any homework.'

- Negative Q-A pairs provide a way to express **Double Negation readings**.

(27) *Ben (to Zoe):* IX<sub>Zoe</sub> **NEVER**<sup>brow-raise</sup> ?                      *Zoe:* **NO**<sup>headshake</sup> , IX<sub>Zoe</sub> ONCE-IN-A-WHILE  
'You never play video games?'                      'No, I play video games once in a while.'

(28) *Zoe:* [IX<sub>Zoe</sub> PLAY VIDEO GAME **NEVER**<sup>brow-raise</sup>], [**NO**<sup>headshake</sup> ONCE-IN-A-WHILE]  
'I do play video games once in a while.'



# Double negation readings

➤ **DN readings** available when answering negative questions in other **NC languages**.

(29) Cine **nu** a venit ?  
who not has come  
'Who didn't come ?

*Romanian*

a. **Nimeni.**  
'Nobody came ... You're the first one here.'

*Negative Concord (NC) reading*

b. **Nimeni.**  
'Nobody didn't come ... Everybody's here.'

*Double Negation (DN) reading*

(Fălăuș & Nicolae 2016)

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# What we have to account for

	At the level of the discourse	In Question-Answer clauses
$\bar{N}\bar{O}^{hs}$ <b>can agree</b> with the (negative) polarity of the question.	✓	*
$\bar{N}\bar{O}^{hs}$ <b>can disconfirm</b> the truth of the negative proposition.	✓	✓

# Restrictions on embedding ?

When embedded,  $\overline{\text{NO}}^{\text{hs}}$  can convey both interpretations.

*Ben (to Zoe):* AMY  $\text{IX}_{\text{AMY}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}^{\text{brow-raise}}$  ?  
'Does Amy never play video games ?'

✓  $\overline{\text{NO}}^{\text{hs}}$  **can agree** with the polarity of the question.

(30) *Zoe:* I THINK  $\overline{\text{NO}}$ ,  $\text{IX}_{\text{AMY}}$   $\overline{\text{NEVER}}^{\text{headshake}}$   
'I think that she never plays video games.'

✓  $\overline{\text{NO}}^{\text{hs}}$  **can disconfirm** the truth of the negative proposition.

(31) *Zoe:* I THINK  $\overline{\text{NO}}^{\text{headshake}}$ ,  $\text{IX}_{\text{AMY}}$  ONCE-IN-A-WHILE  
'I think that she does play video games once in a while.'

# Answers to polar questions

- Answers to polar questions are derived by **ellipsis**.

(32) *Ben*: ZOE PLAY VIDEO GAME ?

'Does Zoe play video games?'

*Amy*: [<sub>CP</sub> YES [<sub>TP</sub> ~~ZOE PLAY VIDEO GAME~~]]

'Yes, Zoe plays video games.'

- Answers to polar questions are a special case of **fragment answers**.

(Holmberg 2015, Kramer & Rawlins 2009, a.o.)

# Deriving the two readings

➤  $\overline{\text{NO}}^{\text{hs}}$  is **not inherently negative**: it has to be licensed by another negation.

(33) *Ben*:  $\text{IX}_{\text{ZOE}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}^{\text{brow-raise ?}}$   
'You never play video games?'

a. *Zoe*: [ $\overline{\text{NO}}^{\text{hs}}$  [ $\text{IX}_{\text{ZOE}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}^{\text{hs}}$ ] ]

'No, I never play video games.'

*NC reading*

b. *Zoe*: [ $\text{Op } \neg$   $\overline{\text{NO}}^{\text{hs}}$  [ $\text{IX}_{\text{ZOE}}$  PLAY VIDEO GAME  $\overline{\text{NEVER}}^{\text{hs}}$ ] ]

'No, I sometimes play video games.'

*DN reading*

➤ **Condition on covert Negation** (Fălăuș & Nicolae 2016):

(34) A covert negation operator can only surface if the vP is not spelled-out.

# Focusing the A-constituent of a QAC

- Question-Answer Clauses place in **focus the A-constituent** (Caponigro & Davidson 2011, Wilbur 1994,1996).
- Focus triggers the insertion of Op  $\neg$ .

(35) *Amy*: ZOE PLAY VIDEO GAME NEVER<sup>headshake</sup>  
'Zoe never plays video games.'

*Zoe*: [IX<sub>Zoe</sub> PLAY VIDEO GAME NEVER<sup>brow-raise</sup>], [FocP Op  $\neg$  NO<sup>headshake</sup> [IX<sub>ZOE</sub> PLAY VIDEO GAME NEVER<sup>hs</sup>]]  
'I do play video games once in a while.'

# Focusing negative elements across languages

- **Double Negation readings** arise in other NC languages when neg-words are focused.

(36) **No** a telefonato a **NESSUNO** !  
'I didn't call nobody.'

*Italian*

- The focused neg-word covertly moves over *no* and is licensed by  $Op_{\neg}$ .

(37) [<sub>FocP</sub>  $Op_{\neg}$  **NESSUNO**<sub>i</sub> [<sub>TP</sub> **no** a telefonato t<sub>i</sub>]]

(Zeijlstra 2004)



# Conclusion

- ASL, as English, does not strictly follow the Truth-based system or the Polarity-based system.
- ASL, as other NC languages, allows DN readings when  $\overline{NO}^{hs}$  is used as a fragment answer to a negative question.
- QACs are embedded question-answer pairs that place in focus the A-constituent (Caponigro & Davidson). Focus triggers the insertion of  $Op \neg$  (Zeijlstra 2004).
- *Prediction:* Any sign language with three answer particles ? Only the third answer particle should be used in response to negative QACs.

# Acknowledgments

## Many thanks to ...

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- ◆ the audience of the Harvard's Meaning and Modality Lab for feedback.

# Annex

# NOTHING - At the level of the discourse

*Amy*: ZOE LUCKY, IX<sub>Zoe</sub> HOMEWORK  $\overline{\text{NOTHING}}$ <sup>headshake</sup>  
'Zoe is lucky, she doesn't have any homework.'

*Ben (to Zoe)*: IX<sub>Zoe</sub>  $\overline{\text{NOTHING}}$ <sup>brow-raise ?</sup>  
'You don't have any homework?'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can agree** with the polarity of the question.

(1) *Zoe*:  $\overline{\text{NO}}$ <sup>headshake</sup>,  $\overline{\text{NOTHING}}$ <sup>headshake</sup>  
'No, I don't have any homework.'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(2) *Zoe*:  $\overline{\text{NO}}$ <sup>headshake</sup>, HAVE  
'No, I do have some homework.'

# NOTHING - At the level of the discourse



# NOTHING - At the level of the discourse



# NOTHING - In Question-Answer Clauses

Amy: ZOE LUCKY, IX<sub>Zoe</sub> HOMEWORK  $\overline{\text{NOTHING}}$ <sup>headshake</sup>

'Zoe is lucky, she doesn't have any homework.'

\*  $\overline{\text{NO}}$ <sup>hs</sup> **cannot agree** with the polarity of the question.

(3) Zoe: \* $[\text{IX}_{\text{Zoe}} \text{HOMEWORK } \overline{\text{NOTHING}}^{\text{brow-raise}}]$ ,  $[\overline{\text{NO}} \text{NOTHING}]^{\text{headshake}}$

('I don't have any homework.')

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(4) Zoe:  $[\text{IX}_{\text{Zoe}} \text{HOMEWORK } \overline{\text{NOTHING}}^{\text{brow-raise}}]$ ,  $[\overline{\text{NO}}^{\text{headshake}} \text{HAVE}]$

'I do play video games once in a while.'

# NOTHING - In Question-Answer Clauses





# NONE - At the level of the discourse

*Amy:* ZOE IX<sub>Zoe</sub> EXPERIENCE  $\overline{\text{NONE}}$ <sup>headshake</sup>  
'Zoe doesn't have any experience (with interpreting).'

*Ben (to Zoe):* IX<sub>Zoe</sub>  $\overline{\text{NONE}}$ <sup>brow-raise ?</sup>  
'You don't have any experience?'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can agree** with the polarity of the question.

(5) *Zoe:*  $\overline{\text{NO}}$ <sup>headshake</sup>,  $\overline{\text{NONE}}$ <sup>headshake</sup>  
'No, I don't have any experience (with interpreting).'

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(6) *Zoe:*  $\overline{\text{NO}}$ <sup>headshake</sup>, IX<sub>Zoe</sub> ONCE-IN-A-WHILE  
'No, I do have some experience (with interpreting).'

# NONE - In Question-Answer Clauses

Amy: ZOE IX<sub>Zoe</sub> EXPERIENCE  $\overline{\text{NONE}}$ <sup>headshake</sup>

'Zoe doesn't have any experience (with interpreting).'

\*  $\overline{\text{NO}}$ <sup>hs</sup> **cannot agree** with the polarity of the question.

(7) Zoe: \* $[\text{IX}_{\text{Zoe}} \text{EXPERIENCE } \overline{\text{NONE}}^{\text{brow-raise}}]$ ,  $[\overline{\text{NO}} \overline{\text{NONE}}^{\text{headshake}}]$

('I don't have any experience (with interpreting).')

✓  $\overline{\text{NO}}$ <sup>hs</sup> **can disconfirm** the truth of the negative proposition.

(8) Zoe:  $[\text{IX}_{\text{Zoe}} \text{EXPERIENCE } \overline{\text{NONE}}^{\text{brow-raise}}]$ ,  $[\overline{\text{NO}}^{\text{headshake}} \text{HAVE}]$

'I do have some experience (with interpreting).'

# NEVER - Discourse level



# POSITIVE QUESTION




# POSITIVE QAC



# Krifka (2013)

- *No* is an **anaphoric element** which can pick up either discourse referent, *d* or *d'*.

[<sub>ActP</sub> is-QUEST [<sub>NegP</sub> she not [<sub>TP</sub> t<sub>she</sub> t<sub>is</sub> tired] ] ]                      'Is she not tired?'



The diagram shows the syntactic structure of the question 'Is she not tired?'. The structure is represented as [<sub>ActP</sub> is-QUEST [<sub>NegP</sub> she not [<sub>TP</sub> t<sub>she</sub> t<sub>is</sub> tired] ] ]. Two light blue arrows point from the discourse referents 'd' and 'd'' to the corresponding elements in the structure. The arrow for 'd' points to the 'she' element in the NegP, and the arrow for 'd'' points to the 'not' element in the NegP.

[[no]] = ASSERT ( $\neg$  *d'*)

'No, she is not.'

[[no]] = ASSERT ( $\neg$  *d*)

'No, she is.'

- Two pragmatic markedness constraints generate the preferred answers.
- *What would it mean for ASL ?* While both *d* and *d'* are accessible at the discourse level, *d* is the only accessible discourse referent in QACs.

# Holmberg (2015)

- *No* assigns the value [-Pol] to the polarity feature heading the sentence.

Is [+/- Pol] she tired ?


No, [<sub>PolP</sub> she [-Pol] is tired]




- The two readings are due to the existence of **two positions for negation**.

Is [+/- Pol] she not tired ?

[<sub>CP</sub> no [<sub>PolP</sub> she is [-Pol] [<sub>VP</sub> not [<sub>VP</sub> tired] ] ] ]      'No, she is.'



[<sub>CP</sub> no [<sub>PolP</sub> she is [-Pol] [<sub>NegP</sub> not [<sub>VP</sub> tired] ] ] ]      'No, she is not.'



- *What would it mean for ASL* ? Only low negation is allowed in QACs.