



Pantomime & Aphasia

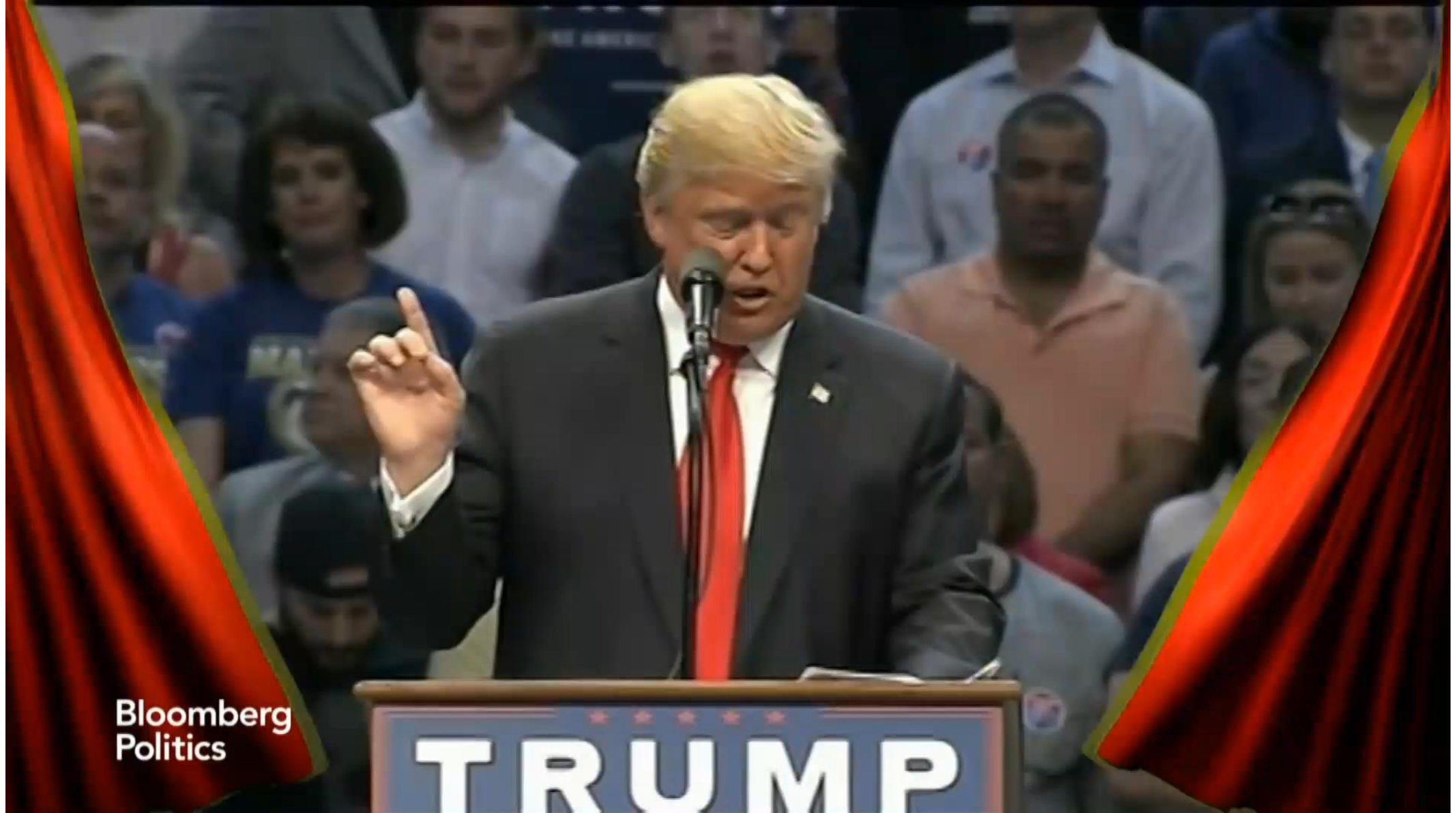
Karin van Nispen

Mieke van de Sandt-Koenderman & Emiel Krahmer

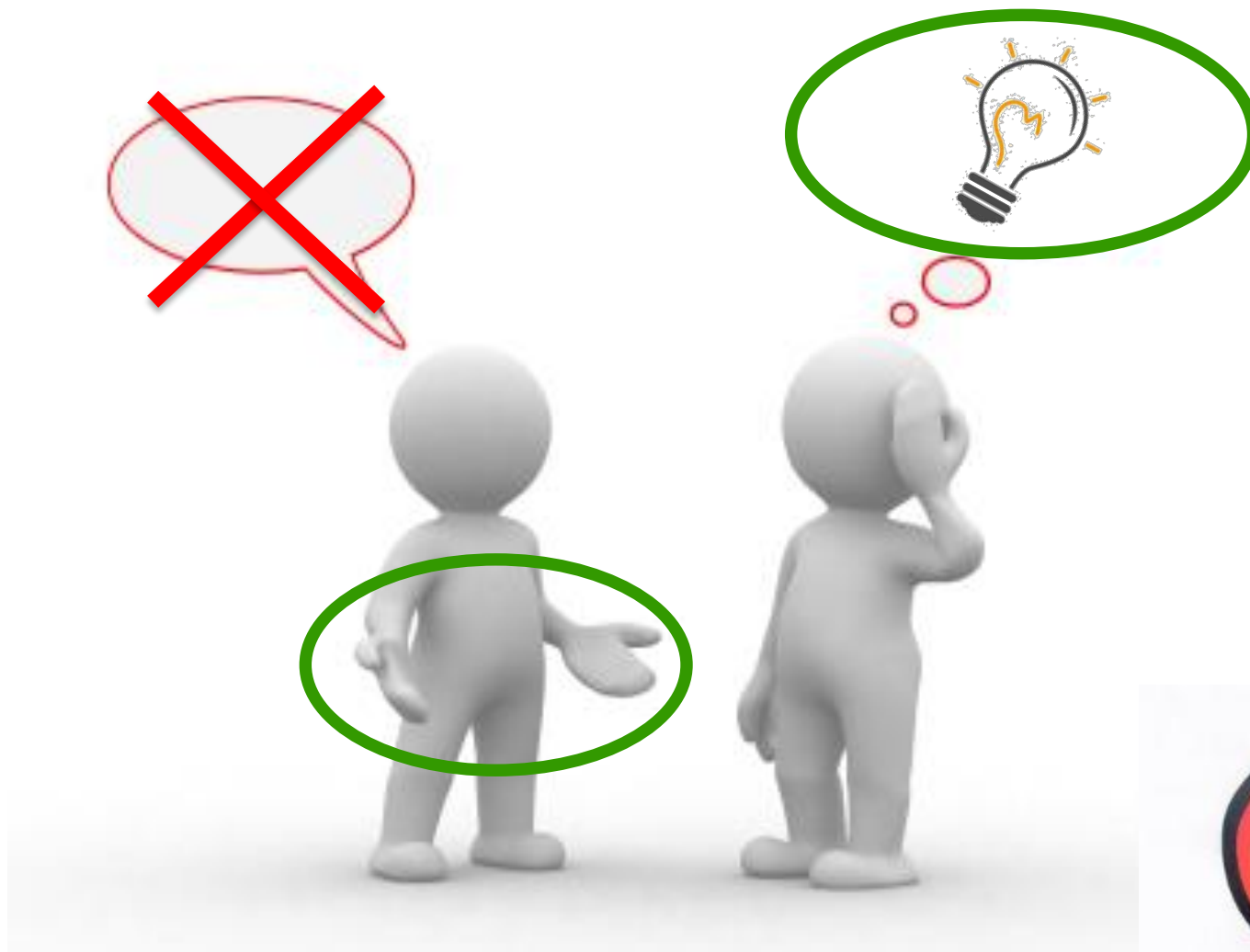
Part 1: Introduction

Part 2: Pantomime

Part 3: Clinical implications



Bloomberg
Politics

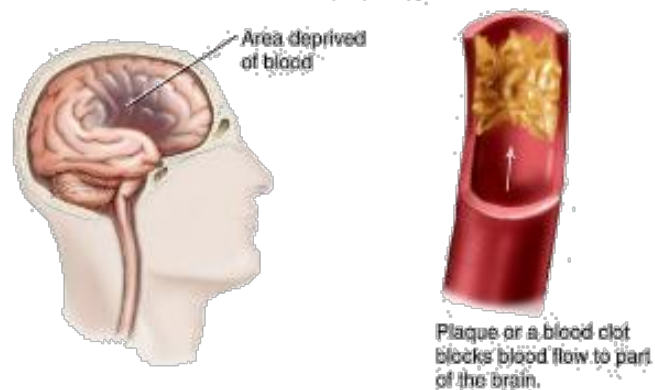


What is aphasia?

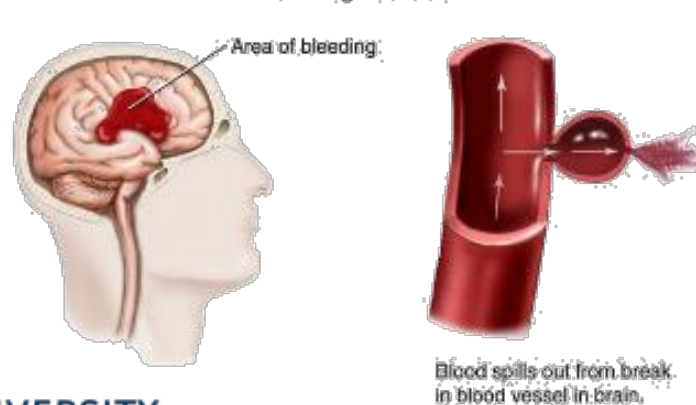
Aphasia = an acquired linguistic disorder, caused by focal brain injury

Types of Stroke

Ischemic Stroke



Hemorrhagic Stroke



What is aphasia?

Aphasia = an acquired linguistic disorder, caused by focal brain injury



What is aphasia?

Aphasia = an acquired linguistic disorder, caused by focal brain injury

People with aphasia (PWA) have difficulty with

- speaking
- understanding speech
- reading
- writing







Gesture therapy

- Train specific gestures

(e.g. Caute et al., 2013; Marshall et al., 2013; Rose 2006)



Not just gesture



Co-speech
gesture



Pantomime



Sign

Demands for PWA

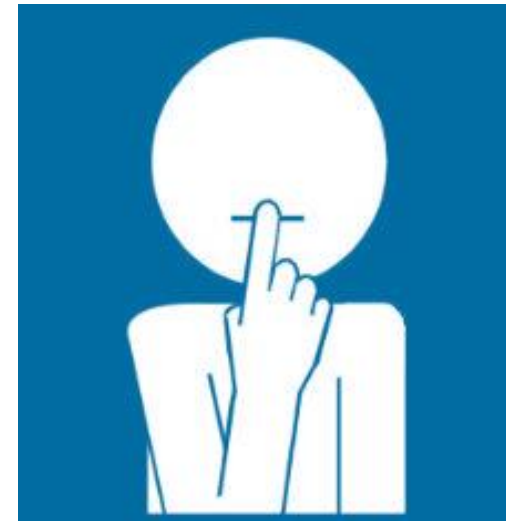
Co-speech gesture



- Spontaneous
- Interpretation (partly) based on speech
- Production process connected to speech



Pantomime



- Conscious
- Has to carry all meaning in message
- Independent from speech



Part 2: Pantomime

a) **NBDP**

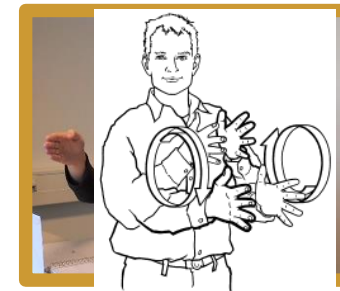
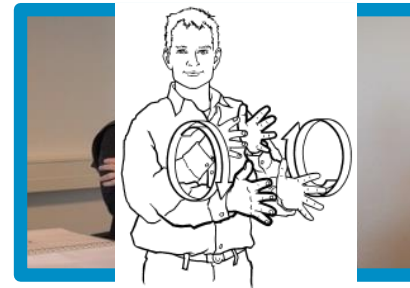
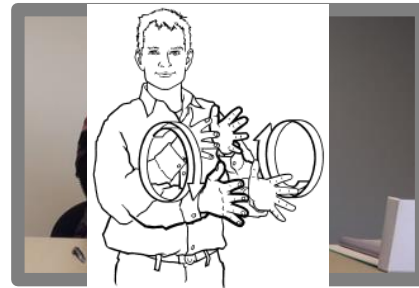
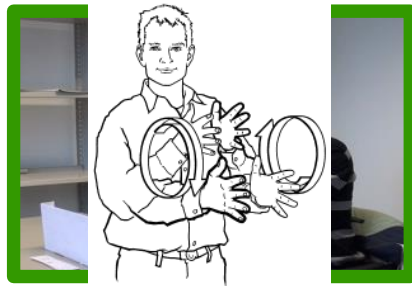
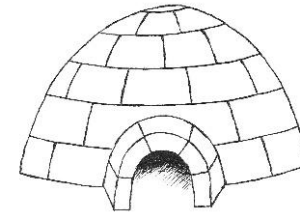
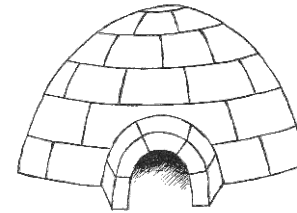
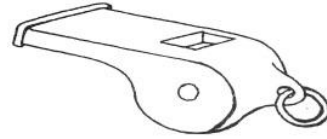
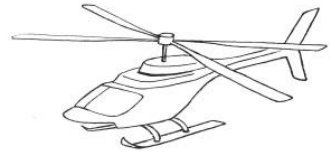
b) PWA techniques

c) PWA Comprehensibility

van Nispen et al., (submitted).



Study 2a: NBDP



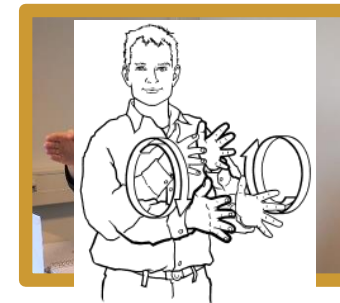
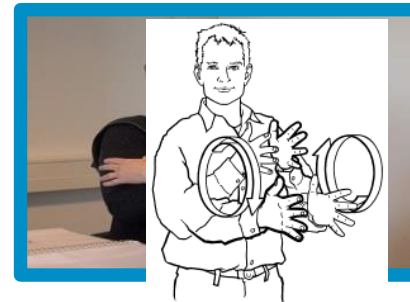
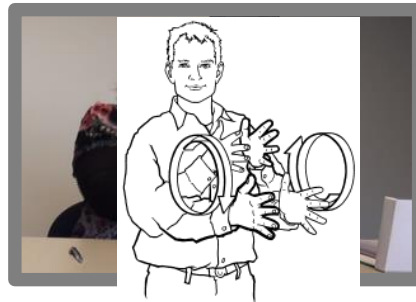
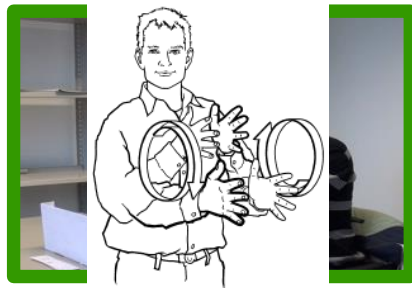
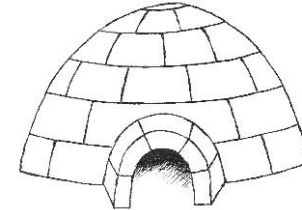
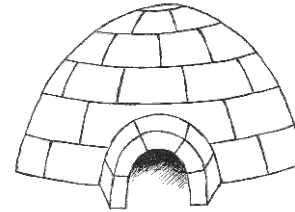
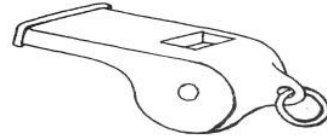
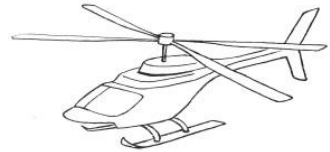
Object

Handling

Enact

Shape

Study 2a: NBDP



| Object | | Handling | | Enact | | Shape | |
|--------|------|-----------|------|--------|-----|-------|------|
| Snail | 100% | Accordion | 100% | Igloo | 90% | Tree | 100% |
| Bed | 90% | Broom | 100% | Cactus | 85% | Globe | 100% |
| Mask | 90% | Dart | 100% | | | Camel | 95% |
| | | | | | | | |

20 participants
60 objects



Ortega (2014)
Padden (2013; 2015)

Part 2: Pantomime

a) NBDP

b) PWA techniques

c) PWA comprehensibility

van Nispen et al., (2016). *Journal of Speech Language and Hearing Research*.

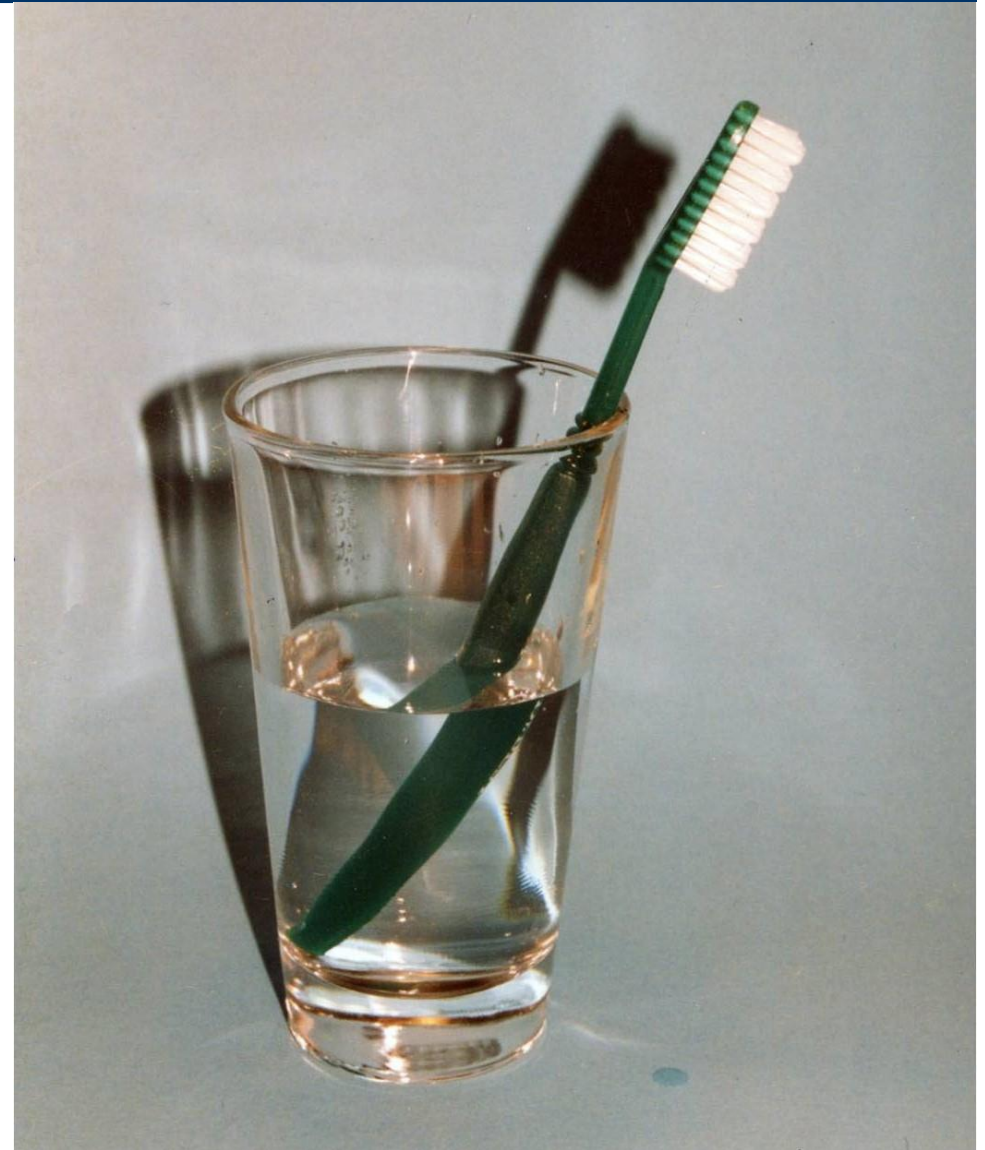
Still possible?

- Paresis
 - Right vs. Left hand?
 - Comprehensibility, no influence
(Hogrefe et al., 2013)
 - Number, no influence
(Kong et al., 2015)



Still possible?

- Paresis
- Ideomotor Apraxia (Hogrefe et al, 2012, 2013)



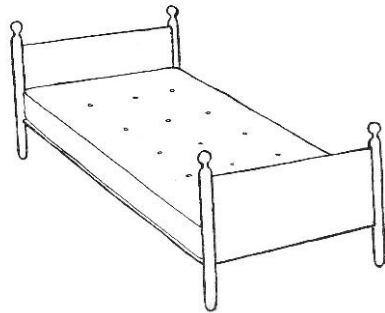
Still possible?

- Paresis
- Apraxia
- Semantics
 - (Cocks et al., 2013; Hogrefe et al., 2011)
 - Other communication modes
 - (Fucetola et al., 2006, van de Sandt-Koenderman et al., 2007)

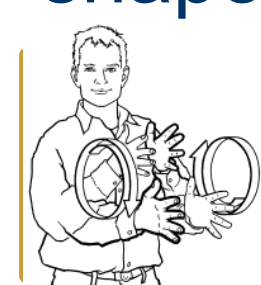
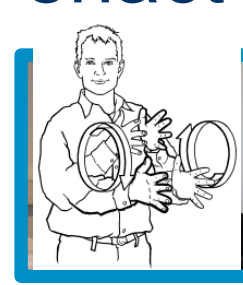
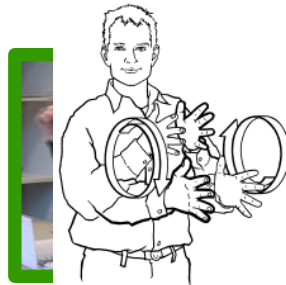
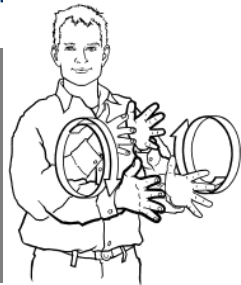
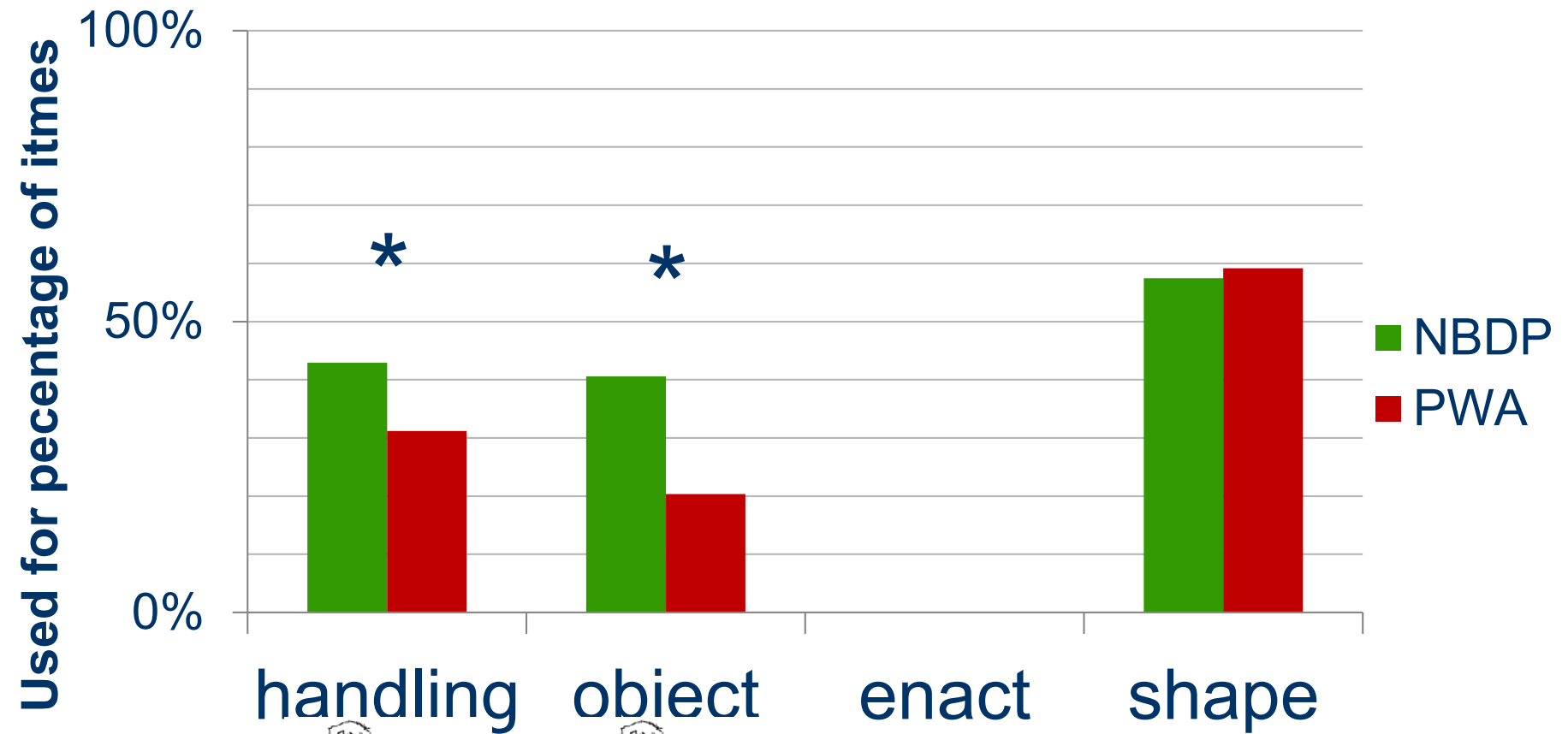


Method

- 20 NBDP
 - 10 left hand only
- 38 PWA
- **Pantomime** 30 objects from the Boston Naming Task, BNT (Kaplan et al, 1983)



Results



Results

NBDP



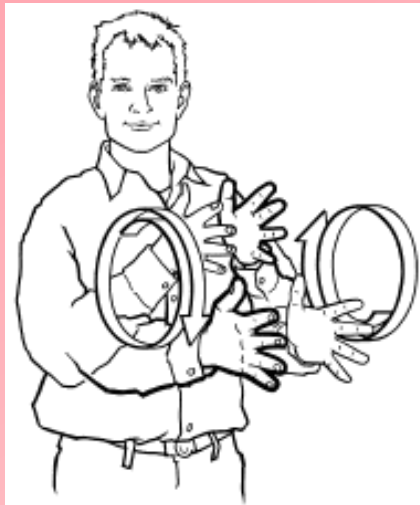
2 hands



1 hand

Results

PWA



No Apraxia

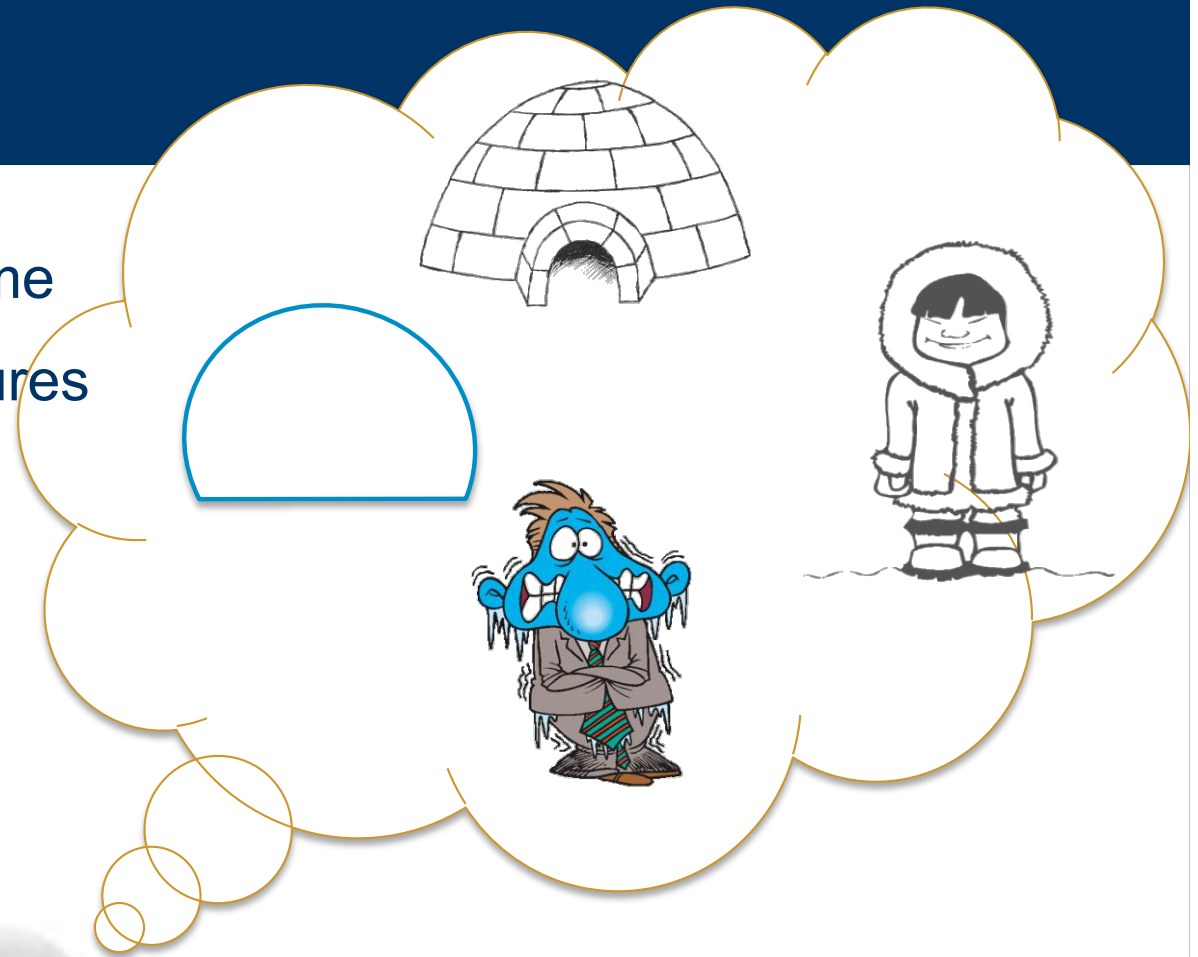


**Apraxia +
Semantic impairment**

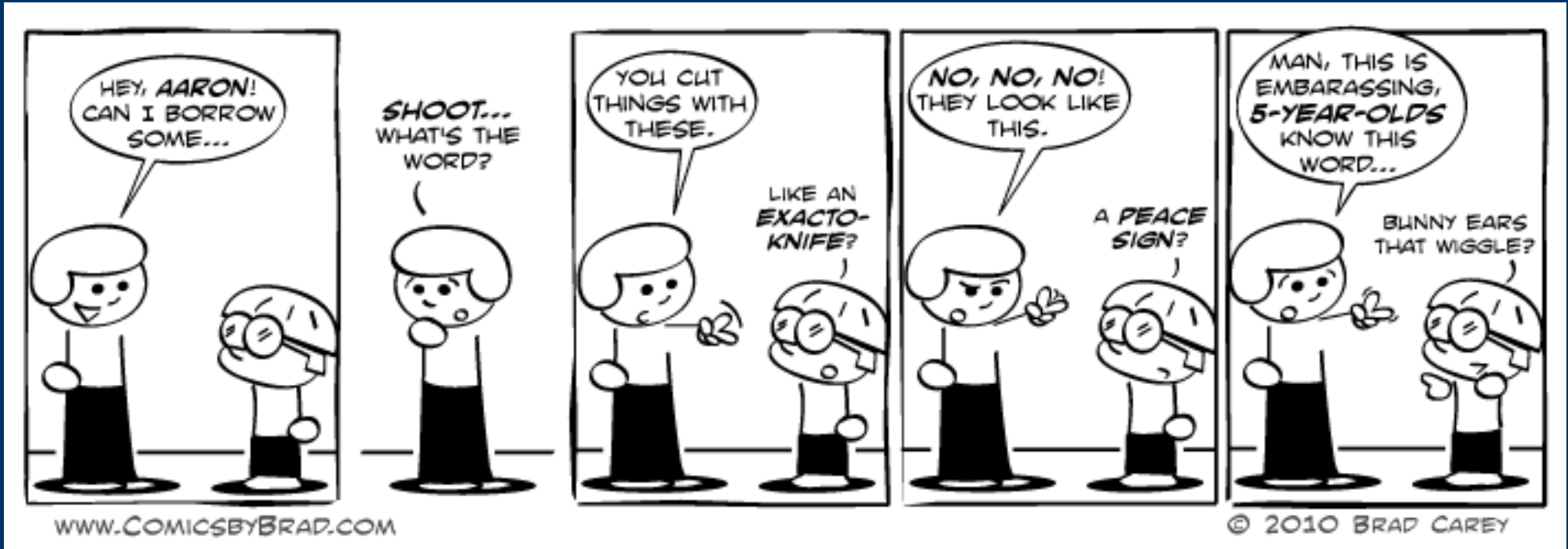
| Correlations | Handling | Object |
|--------------|----------|--------|
| Apraxia | .78*** | .47** |
| Semantics | .37* | .32* |

Discussion

- PWA can produce pantomime
- Selection of distinctive features
 - Apraxia
 - Semantics
- No influence of paresis



What about comprehensibility?



Part 2: Pantomime

- a) NBDP
- b) PWA techniques
- c) **PWA comprehensibility**

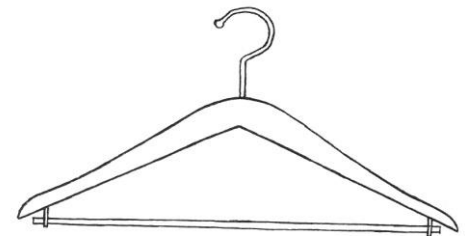
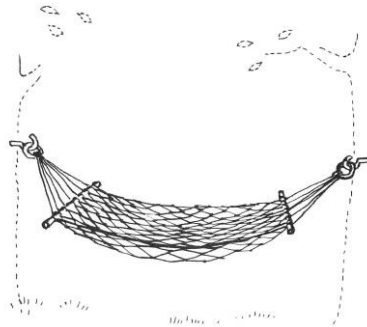
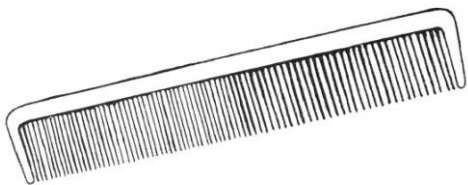
van Nispen et al., (accepted pending minor revisions). *International Journal of Language and Communication Disorders*.

How to measure comprehensibility?



Comprehensibility

273 judges



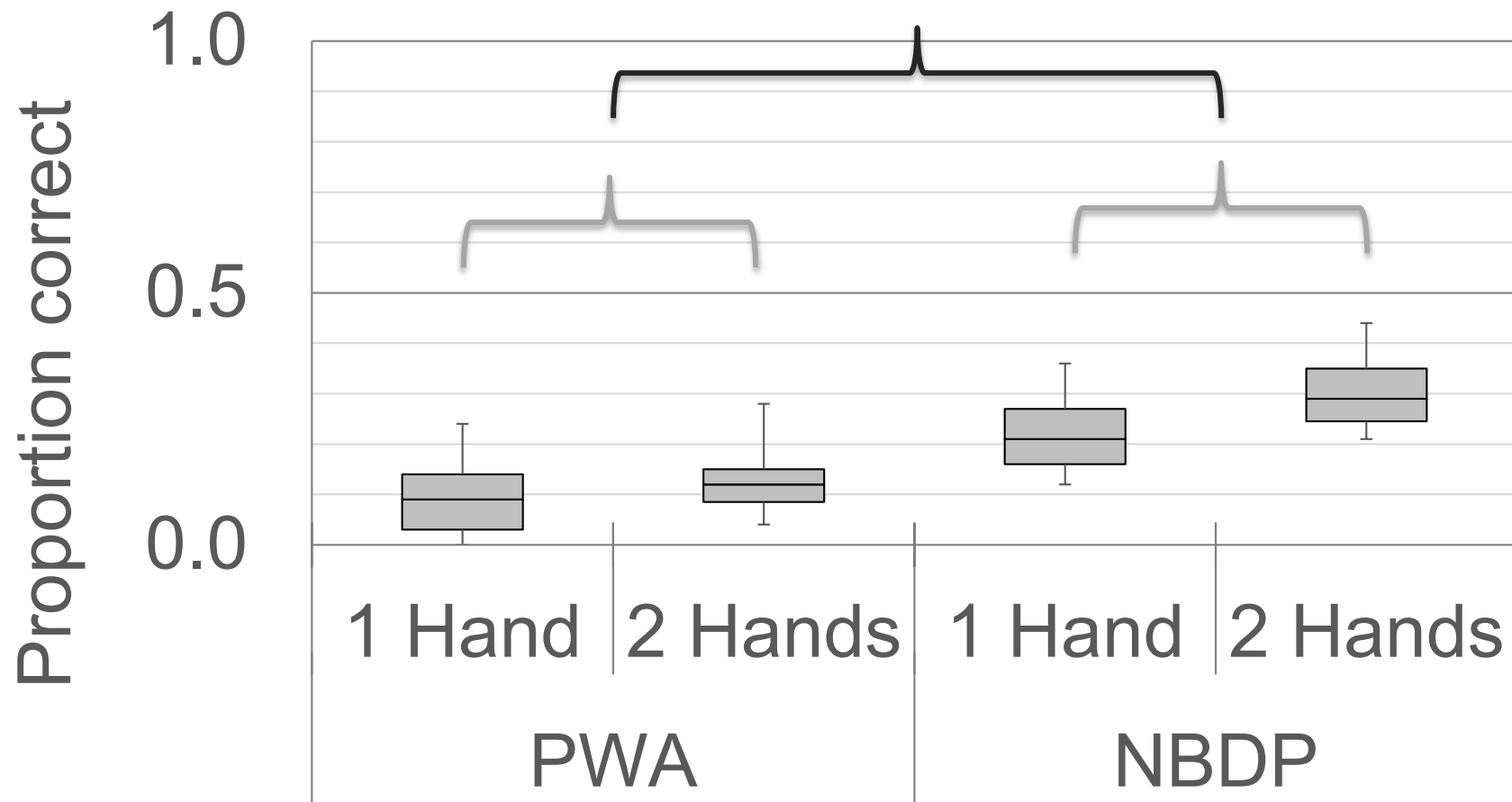
Comprehensibility

273 judges

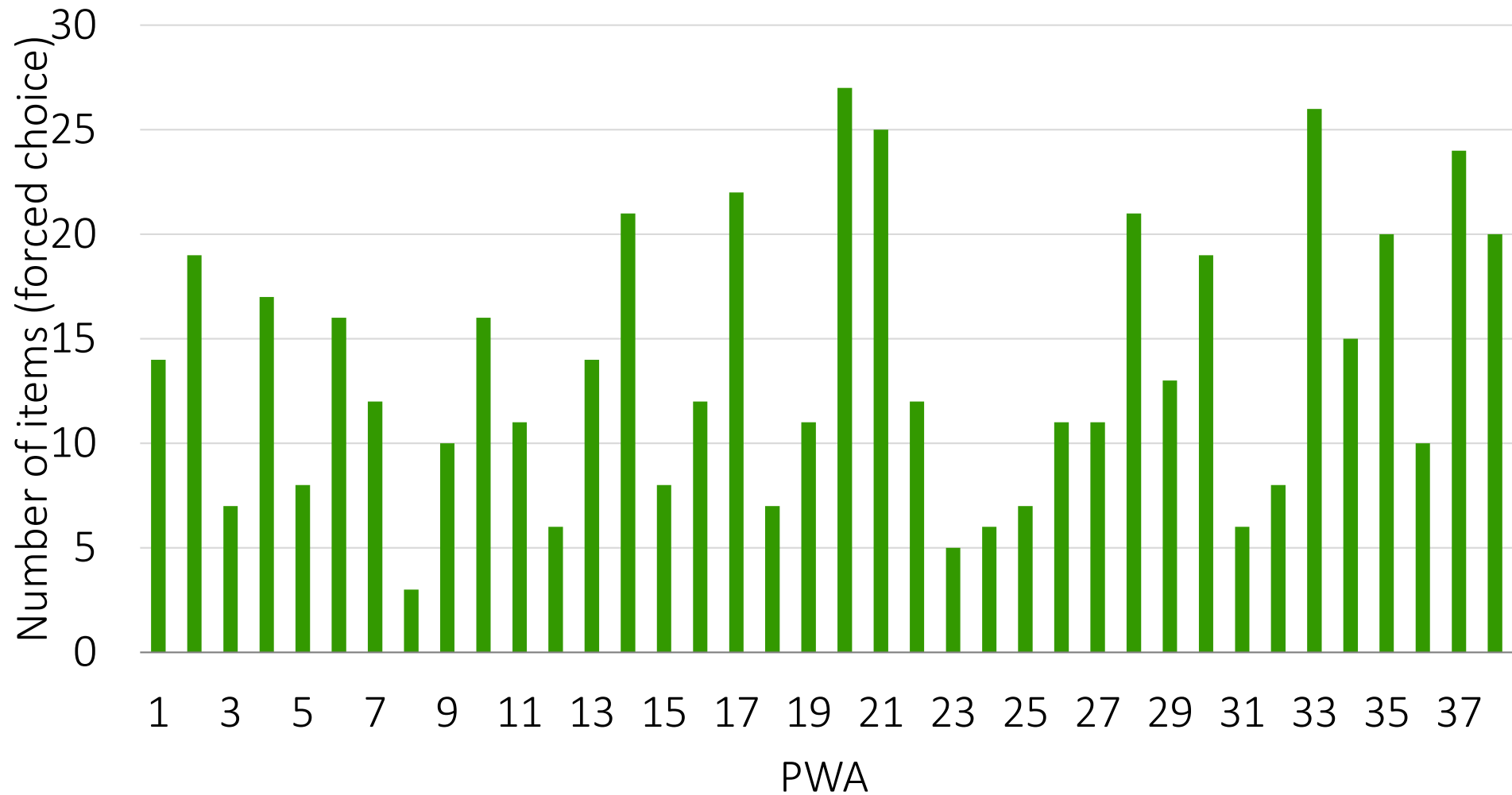


What is this person gesturing?

.....



Information in **pantomime** only



Discussion

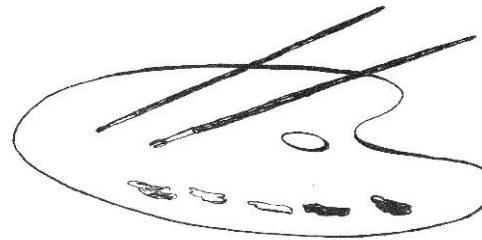
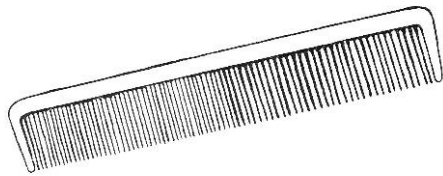
- Gesture / pantomime is informative, but ambiguous
- Useful for communication of PWA

Part 3: (Clinical) Implications

Take home messages

1. Pantomime (& Co-speech gesture) can add to speech

- Both for severe and mild aphasia



- Combination with speech is extra informative



“I can’t walk”

2. Co-speech vs. Pantomime

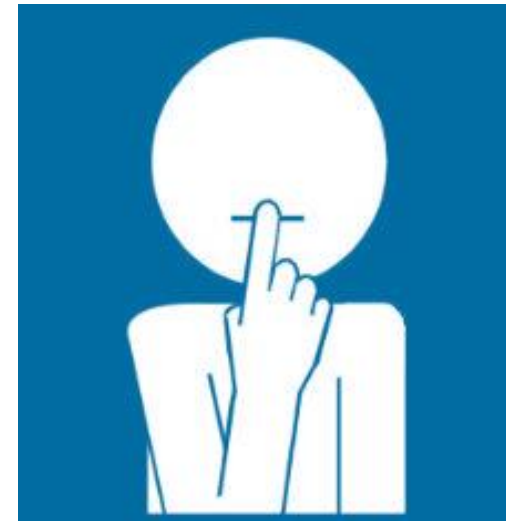
Co-speech gesture



- Spontaneous
 - Interpretation (partly) based on speech
 - Production process connected to speech
- Spontaneous communication



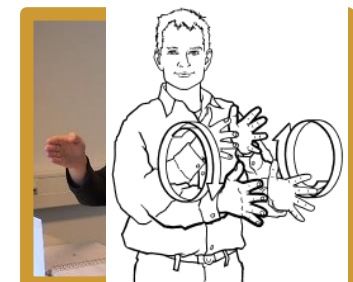
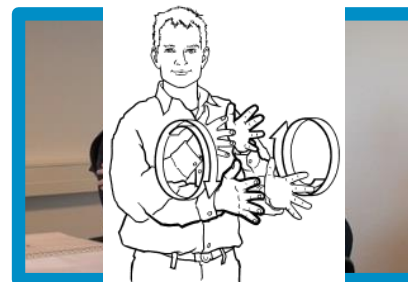
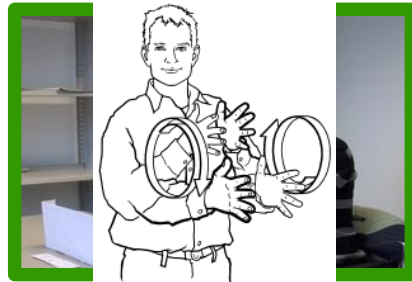
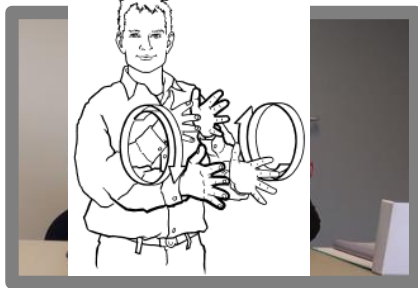
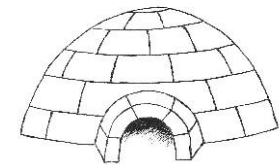
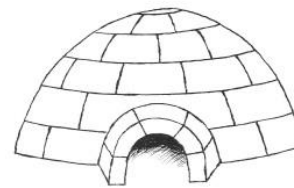
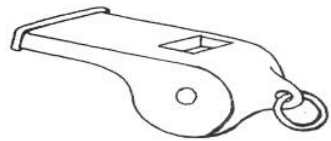
Pantomime



- Conscious
 - Has to carry all meaning in message
 - Independent from speech
- Gesture therapy



3. Different representation techniques



Handling

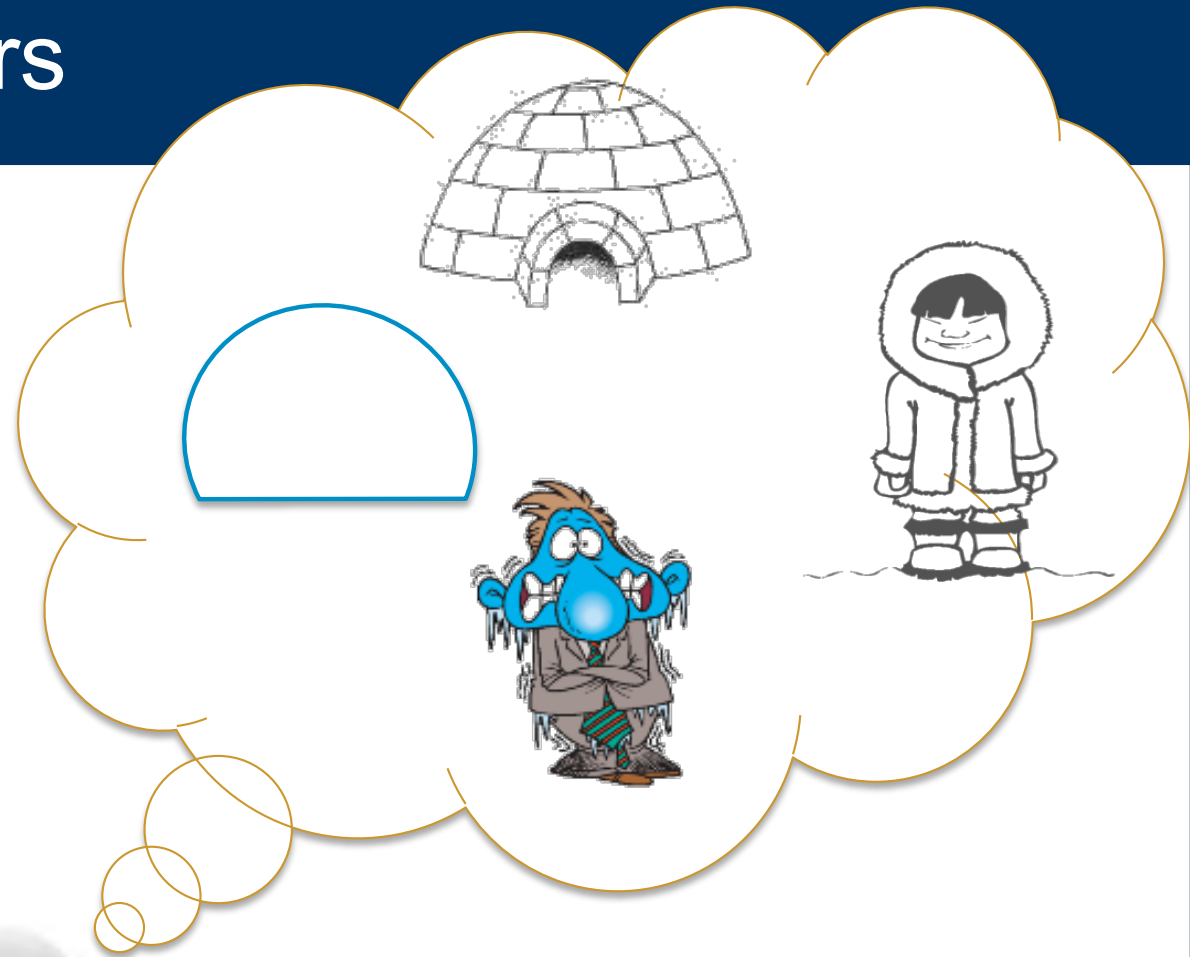
Object

Enact

Shape

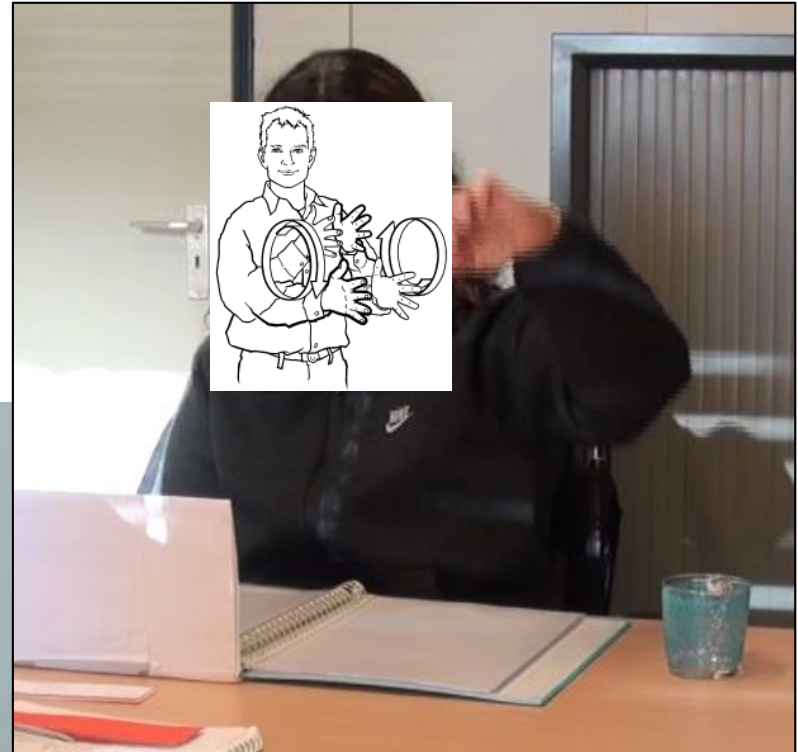
4. Influencing factors

- Apraxia
- Semantic disorder
- But not paresis!



5. Pay attention to gesture

- Interlocutors
 - Ask questions
- PWA



“Is uh five..... uh four years”





Questions?