Transparency of signs in a Flemish Key Word Signing system

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from Loncke, Nijs & Smet (1998)

Introduction

Key Word Signing (KWS)

= means of Augmentative and Alternative Communication (AAC),
in which key words in a spoken sentence are simultaneously supported by manual signs

- used frequently in people with intellectual disabilities (ID) and communication disorders
- advantages[1]:
  - unaided
  - natural form of communication
  - multimodality
  - slows down speech rate
  - simplifies language input
  - visually close to referent (**iconic**) (figure 1)

→ what is the iconicity of the signs of our Flemish KWS-system?

→ which influence does iconicity has on sign acquisition and recall?

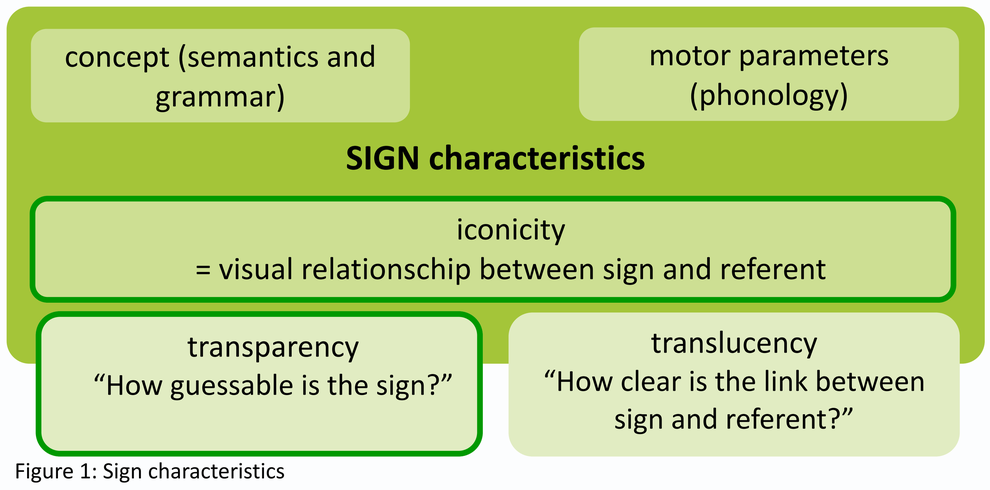

Figure 1: Sign characteristics

Aim

To determine the transparency of the 500 basic signs of a Flemish KWS-system in normally developing adults

to be able to study the influence of the transparency on sign acquisition and recall in adults with ID

Table 1: Iconicity-model

Motor Parameter \ Visual relationship	Action	Association	Cultural	Deictic	Manipulation	Shape	Initial
Movement	x	x	x	x	x	x	
Handshape	x	x	x	x		x	x
Location		x	x	x			
Mimics		x					

Method

Material, participants and protocol:

- video clips of 500 basic signs, split screen frontal/profile (figure 2)
- randomised in 10 lists of 50 signs, each sign shown twice
- each list shown to group of 11 to 28 undergraduate students Speech Language Pathology and Educational Sciences (total of 171 students, 91% female, age 17-26 with median = 18, no experience with KWS or sign language)
- "Write down, in one word, what you think the sign means."
- answer is considered correct if = gloss or synonym

Figure 2: Screenshot of sign TREE

Processing results:

- **quantitative**:
  - transparency of sign = % of students who guess meaning correctly
  - amount of transparent signs = sign is transparent if ≥ 50% of students guess correctly (criterion Van Uden[2])
  - transparency of KWS-system = mean transparency of all 500 signs
- **qualitative**:
  - analysis of false answers with iconicity-model (table 1), based on models of Pietrandrea[3] and Taub[4]

Results

Quantitative (figure 2)

- 21,2% of all signs (106 of 500): transparent
- 49,4% of all signs (247 of 500): non-transparent (no one guessed correctly)
- mean transparency of remaining 29,4% of signs = 19% (SD 14%)
- mean transparency of all 500 signs = 21,7% (SD 31,5%)

Qualitative (figure 3)

- 58% of all false answers based on parameter "movement"
- 48% of all false answers based on same parameter as correct answer

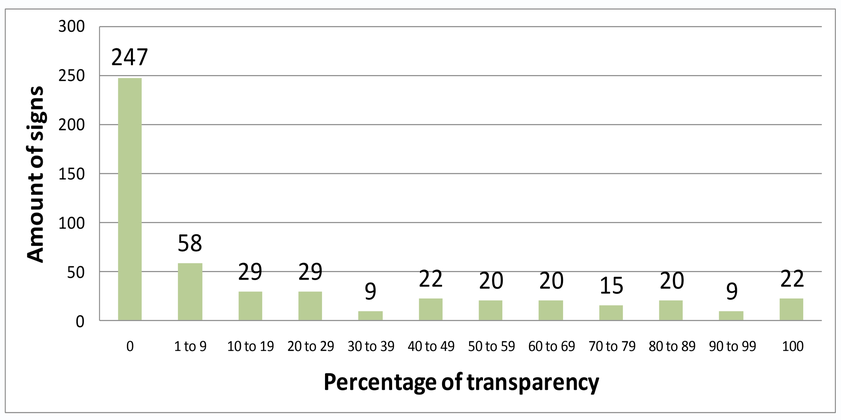

Figure 2: Amount of signs for different percentages of transparency

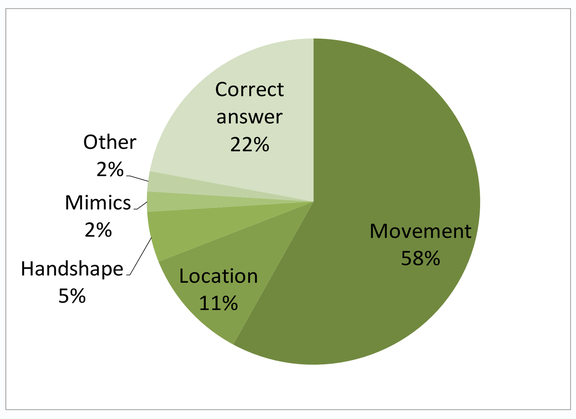

Figure 3: Distribution of false answers according to iconicity-model

Discussion

The mean transparency seems rather low for a KWS-system (transparencies of 41-49% found in other systems such as AmerInd[5,6]), possible explanations:

- other KWS-systems have less signs (AmerInd has only about 100 signs)
- many signs from our Flemish KWS-system are identical to signs from Flemish Sign Language
- transparencies in sign languages are typically lower than in KWS-systems (10-25%[7])

Even if a sign is not labeled correctly, the parameter carrying the meaning is often recognised. This might be linked to the translucency of a sign.

Conclusion

Transparency of our Flemish KWS-system is quite low, and half of the signs are non-transparent. This might have clinical implications on the selection of signs for use with adults/children with ID.

- Should we focus on the more transparent signs?
- Or is the impact of transparency on sign learnability not that important?
- Maybe translucency is of greater relevance?

Directions for further research:

→ find out translucency of the 500 basic signs

→ study the influence of transparency and translucency on sign acquisition and recall

References & Acknowledgements

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Thanks to:

- Audrey Vercruysse and Marlies Vervloet, for help collecting data
- The "Steunfonds Marguerite-Marie Delacroix", for financial support

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