



# Testing naming in Finnish persons with MS – a new project

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# Outline

- Previous research on language in MS
- Reasons for the current study
- The new project
- What's next?

# Language in MS: Previous research

- Many studies have looked at *naming* in MS (see, e.g. Friend, Rabin, Groninger, Deluty, Bever & Grattan, 1999; Kujala, Portin & Ruutiainen, 1996).
- PWMS make more visual, lexical and phonological errors compared to healthy controls -> problem in lexical retrieval? (Kujala et al., 1996).
- Problems in *verbal fluency* (Henry & Beatty, 2006).
- Both semantic and phonetic fluency are sensitive markers of cognitive problems in MS (Meta-analysis, Henry & Beatty, 2006).

# Language in MS: Previous research

- Many researchers have pointed out the especially the *higher language functions* may cause problems in MS, e.g. understanding ambiguous sentences and metaphors (Lethlean & Murdoch, 2000).
- *Discourse abilities* or *pragmatic abilities* have been studied very little so far, and we need more information about these in MS (Arrondo, Sepulcre, Duque, Toledo & Villoslada 2010).

# Reasons for the new study

# Contradictory results on naming in MS?

- Contradictory results: No difference in naming compared to healthy controls (Heikkola, 2017)
  - Total score
  - Correct answers without a cue
  - The number of semantic cues given
  - Correct answers with a semantic cue
- However, there was a difference between MS groups: persons with more severe MS (EDSS) performed better compared to persons with less severe MS

# Other problematic factors

- Many previous studies on naming have focused mainly on *nouns* (things)
  - > What about naming *verbs* (actions)?
- Also, is it enough to look at the *scores*? Should we also look at *reaction times*?
- *Pragmatic/discourse abilities*?
- *Cognitive fatigue*?

# The new project



# The bigger picture

Very little information about how normal aging affects language in healthy Finnish speakers  
- Prof. Anneli Pajunen

Naming and narrative language in persons with developmental disabilities  
- MA Iidastiina Valtasalmi

Naming and narrative language in persons with MS  
- Dr. Leena Maria Heikkola

# The little bit smaller picture

- The main aim of the project is to develop a new, standardized and validated test for clinical use for Finnish.
- Based on the International Picture Naming Project at [CRI-UCSD](#).
- Two versions of the CRI:
  - Appr. 800 pictures (both nouns and actions) – non time-constrained.
  - The shorter time-constrained version (100 pictures, 70 nouns + 30 actions) will be used in the MS study.

# The naming test: Variables

- Possible quantitative/psycholinguistic variables:
  - *RT*
  - *Naming agreement*
  - *Error types*
- Possible qualitative/linguistic variables:
  - *Specificity* (hyponyms, hyperonyms)
  - *Geographic/social/phonetic variation*
  - *Semantic categories* (e.g. fruit, animals, things, human actions etc.)



# The new project: Preliminary methodology

- **Participants:** 100 persons with MS (disease severity, disease type, age, memory functions etc.)
- **Data collection** (not just naming):
  - CERAD (memory functions)
  - CRI-USCD Naming test for Finnish (nouns and actions)
  - Word definition task (see Pajunen, Itkonen, & Vainio, 2015)
  - Familiarity task (see Pajunen, & Itkonen, 2019)
  - Spatial perception (ball task, see, Levelt, 1981, 1982)
  - Narrative task (see, Tajuma, & Duffield, 2012)
  - Cognitive fatigue (FSS, PVSAT, fatigue related to speech production)



# The new project: Analysis

- **Analysis:**
  - Comparison between different MS groups
  - Comparison between the different MS age groups
  - Comparison with matched healthy controls (n=100) and persons with developmental disabilities (n=100)
  - Comparison between naming in nouns and verbs
  - Correlations between naming and narrative language
  - Correlations between naming / narrative language and cognitive fatigue
  - Something else?

# What's next?

- Finalizing the details and research plan for the MS study
- Meeting with researchers in Tampere about the bigger project
- Applying for ethical permits (the ethical committees at Åbo Akademi University and the regional hospital district, Varsinais-Suomen sairaanhoitopiiri)
- Cooperation with Masku neurological rehabilitation center: data collection, fall 2020.

# Bibliography

- See Heikkola, 2017, for references.