

University of
Waterloo



The Effects of Stroke on Activities of Daily Living

Dr. Geneviève Desmarais
Post-Doctoral Fellow
Department of Kinesiology
University of Waterloo

Our collaborators



- Vessela Stamenova
- Dr. Eric A. Roy
- Richard Painter
- Susan Brown
- Dr. Michael Dixon
- Dr. Sandra Black
- Deborah Hébert
- Dr. Norman Park

Every day oopses

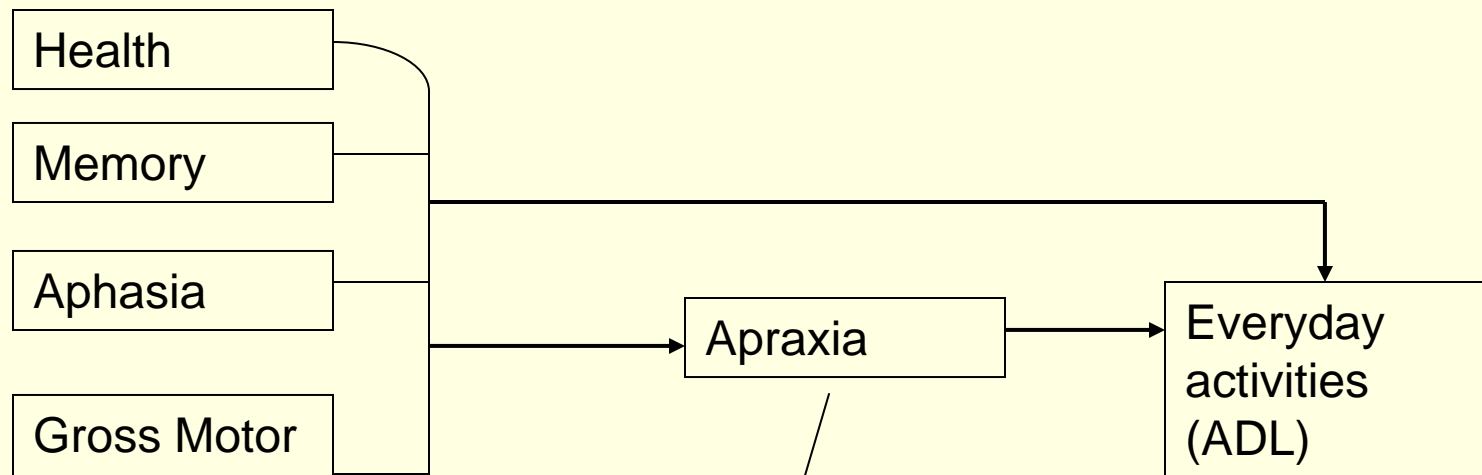
- Have you ever used a shoe to drive a nail?
- Have you ever put the milk carton in the cupboard instead of the fridge?
- Have you ever felt like throwing new gadgets out the window?
- Have you ever tried to pick up the same item off the floor 3 times?

Functional Abilities Program (FAP) for Seniors

- Collaborative clinical-research program
 - Winston Park Retirement Nursing Home
 - Oakwood Retirement Communities
 - Applied Health Sciences, UW
 - Component Program within RIA

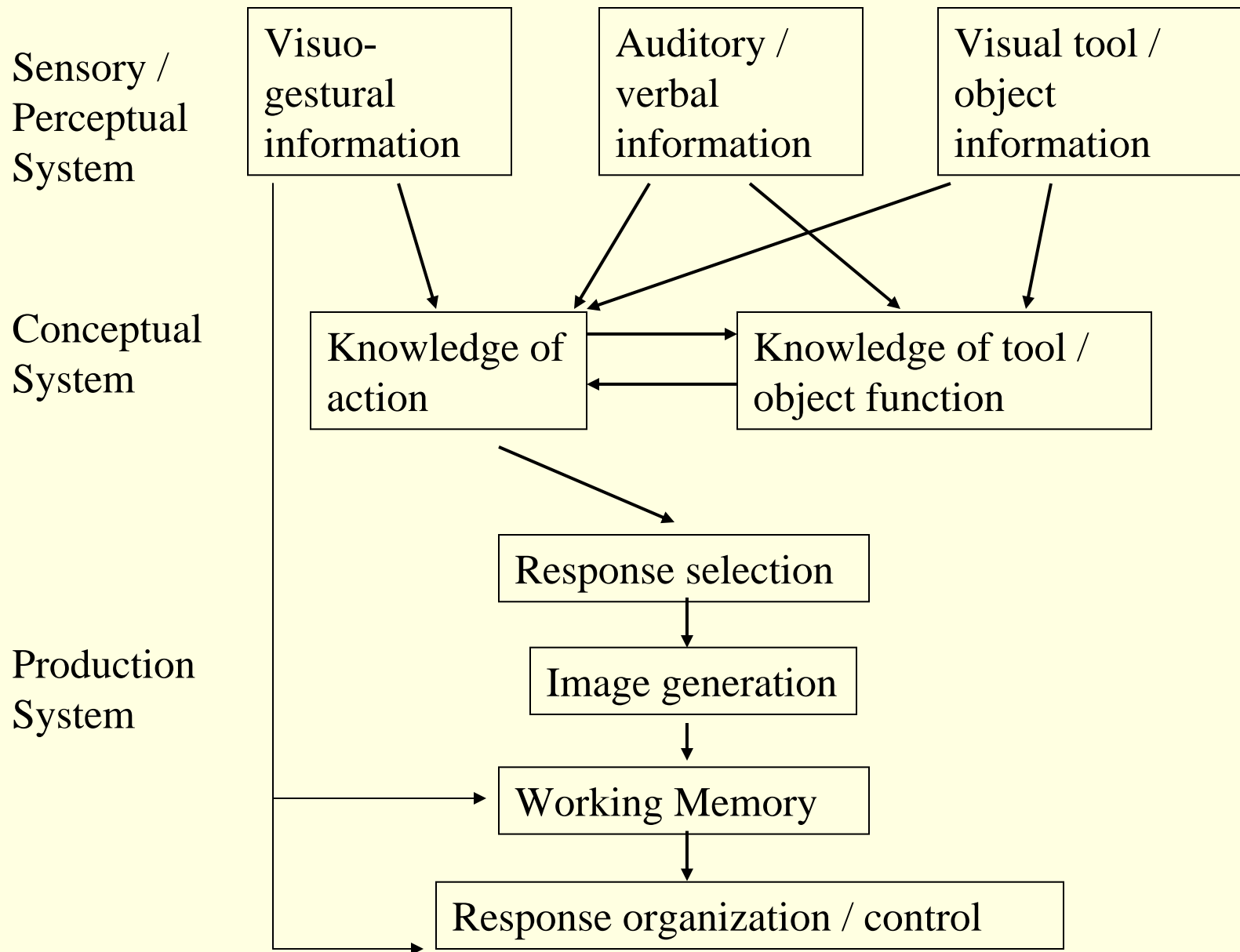
- Focus is on maintaining or improving independence in residents in long-term care facilities
 - Partly done through restorative care
 - Restorative feeding
 - Retraining activities of daily living
 - Restorative walking
 - ...

What's involved in making a cup of coffee...



Inability to perform learned actions despite
Good motor function
Good comprehension
Good cognitive function

Praxis System (Roy and Square, 1994)

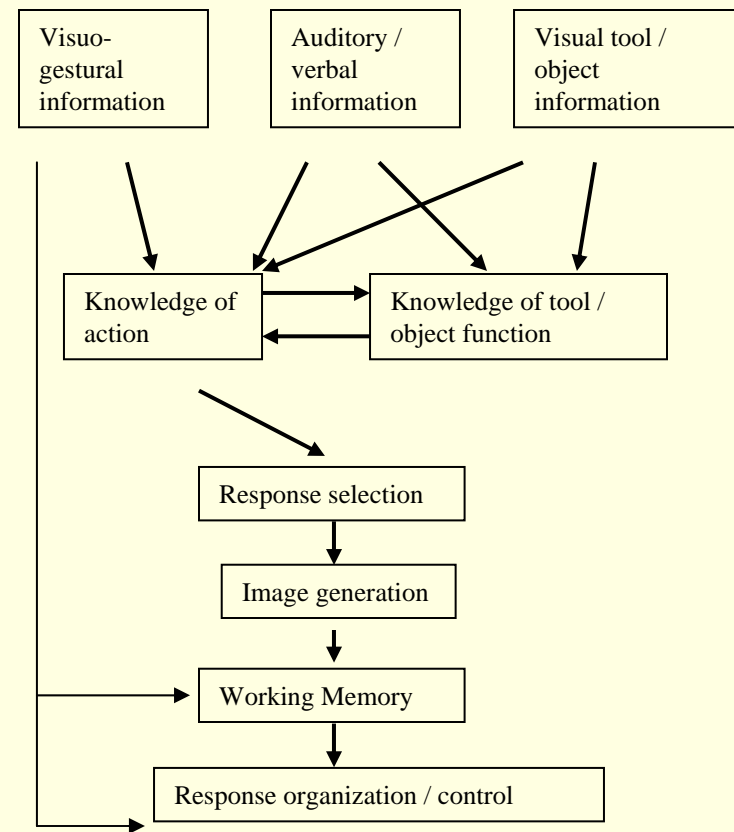


Today's two questions

- Can different deficits lead to problems with Activities of Daily Living (ADLs)?
- Will apraxia necessarily be associated with problems with ADLs?

Evaluating Apraxia

- Waterloo-Sunnybrook Apraxia battery
 - Object identification
 - Object function
 - Action production
- Apraxia behavioural checklist
 - Done with caregiver to evaluate the presence of common action production errors



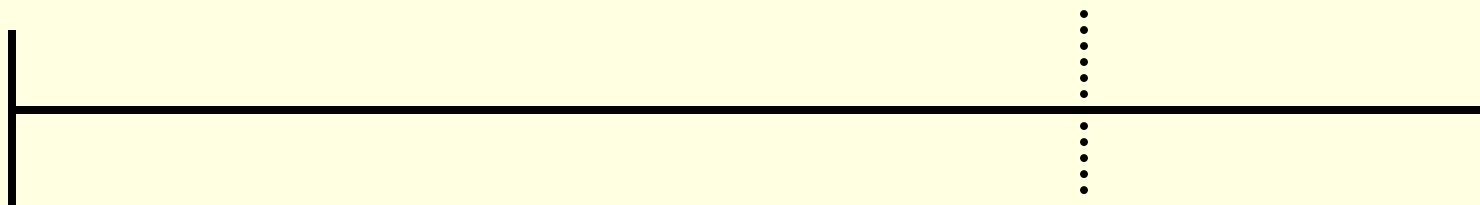
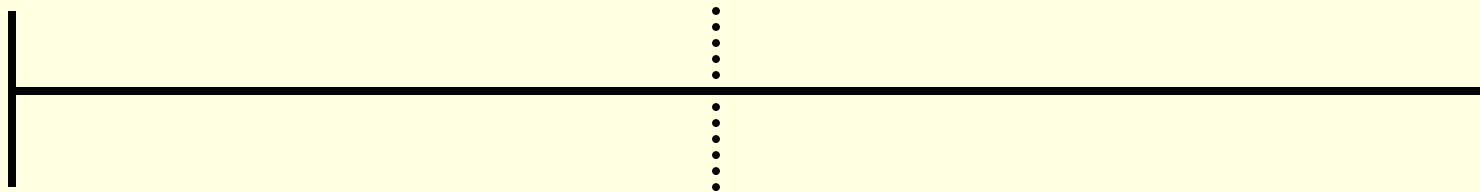
Evaluating Activities of Daily Living

- Naturalistic actions test
 - Make a cup of coffee
 - Make a sandwich
 - Prepare and mail a card
- Novel naturalistic actions test
 - Make a volcano
 - Make a bird feeder
 - Make an ear guitar
- Barthel index
 - Interview with participants/caregiver to evaluate physical independence

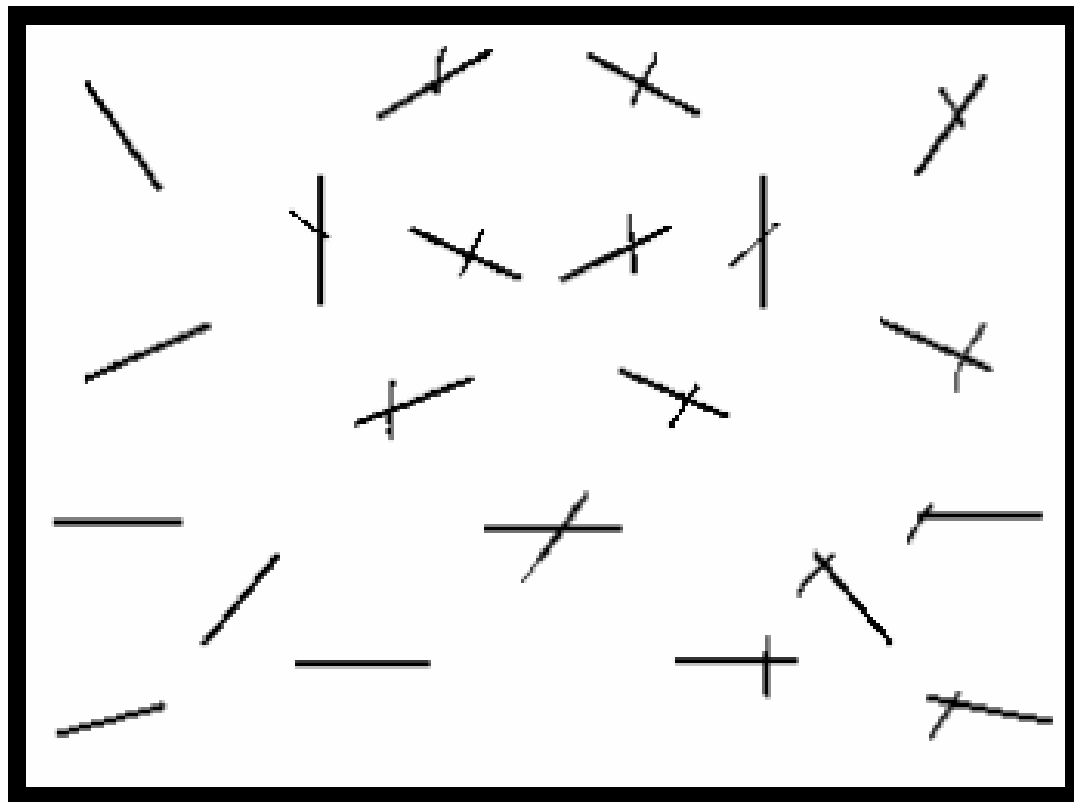
Test Battery

- General Health Questionnaire
- Modified Mini-Mental State Exam (3MS)
- Western Aphasia Battery
 - Comprehension section
- Attention
 - Line bisection
 - Line cancellation
 - Shape cancellation

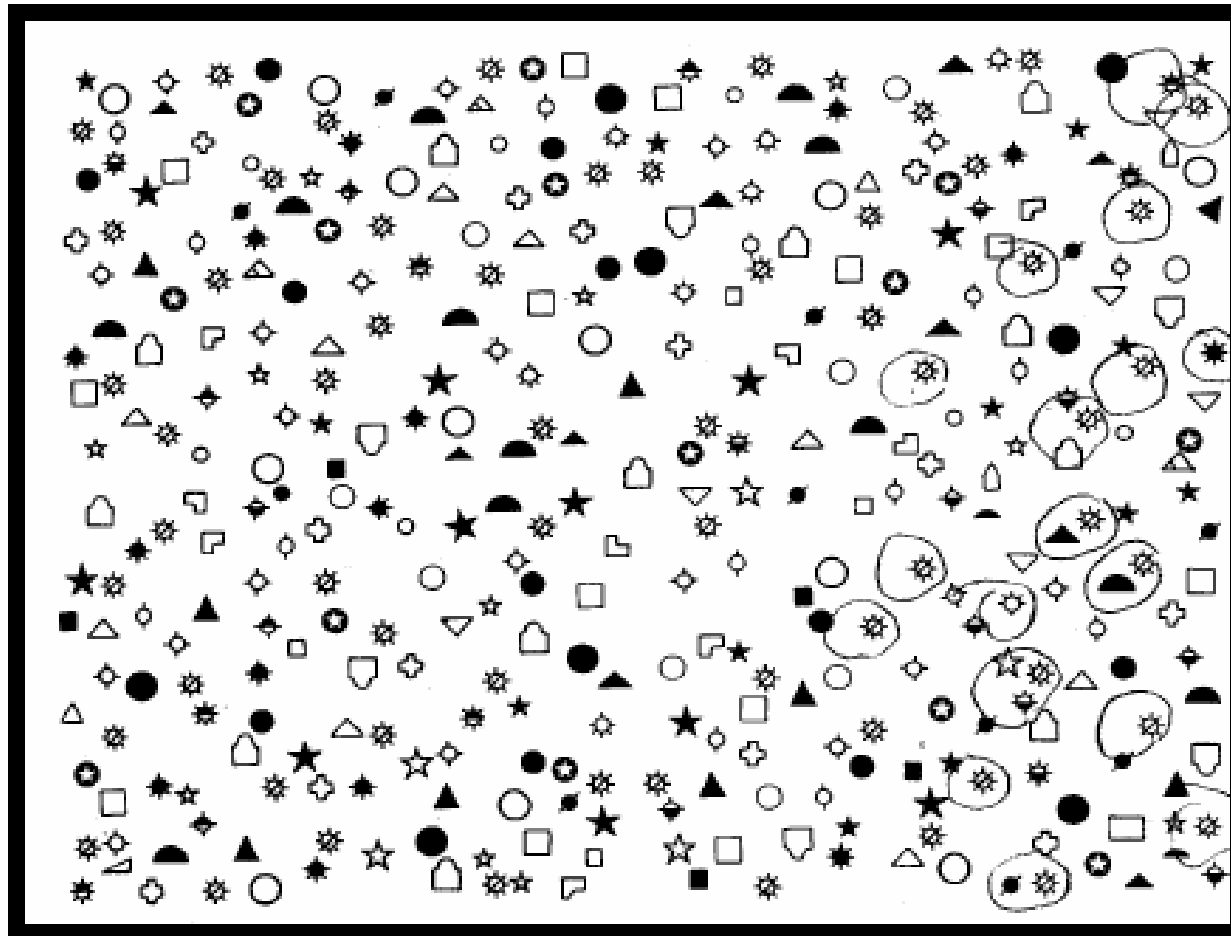
Line Bisection



Line cancellation



Shape Cancellation



TM2 and TM4

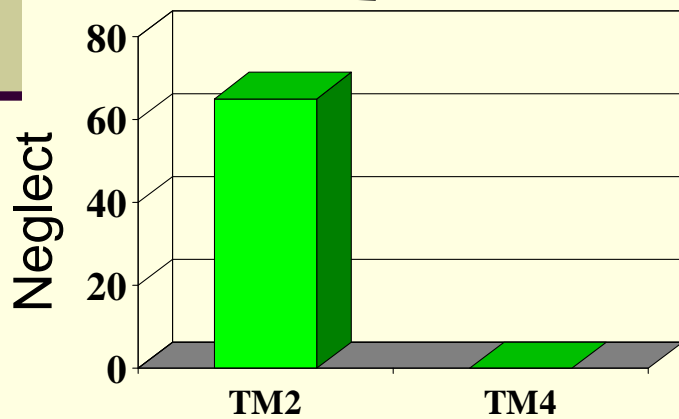
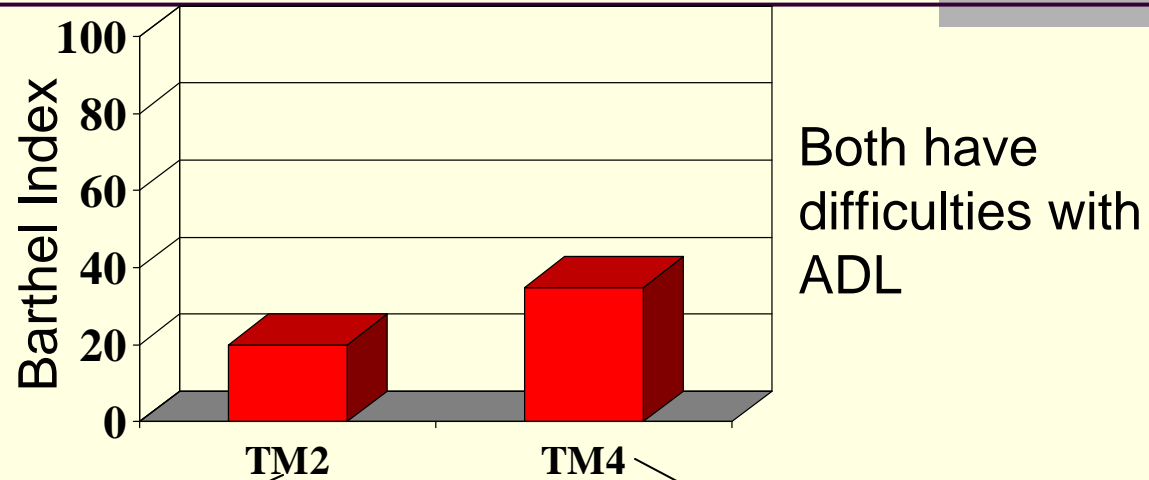
TM2

- 85 years old
- Right Hemisphere stroke
- 3MS: 84
- Aphasic (WAB = 57)
- Apraxia
 - Pantomime normal
- Neglect
 - Average deviation 65%
- Barthel index: 20

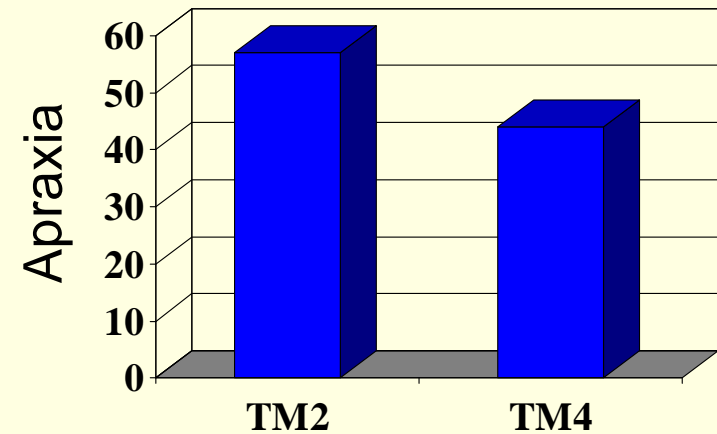
TM4

- 75 years old
- Left Hemisphere stroke
- Unable to respond to 3MS
- Aphasic (WAB = 48)
- Apraxia
 - Unable to pantomime with unaffected hand
- Neglect: normal performance
- Barthel index: 35

TM2 and TM4



TM2 suffers from neglect



TM2 suffers from apraxia

Today's two questions: answered

- Can different deficits lead to problems with Activities of Daily Living (ADLs)?
 - Deficit in **attention** alone can lead to problems with ADLs
 - Deficits in **praxis** alone can lead to problems with ADLs
 - Rehabilitation will need to be tailored to specific needs
- Will apraxia necessarily be associated with problems with ADLs?
 - NO
 - Deficit in attention led to problems with ADLs but not to apraxia
 - Tests of apraxia may not be enough to uncover problems with ADLs