

**Language
is**



the key to quality of life

Overview of what I would like to share with you today

- Language in healthy ageing:
- How is language affected in healthy ageing? Development versus deterioration!
- Two contrasting views regarding language and other cognitive functions/skills in healthy ageing:
 - 1) 'Cognitive decline'
 - 2) 'The myth of cognitive decline'
- Language following brain damage: 'Aphasia'
- Principles of experience-dependent neuroplasticity (Kleim & Jones, 2008)
- Some Dos and Don'ts

1) Cognitive decline

Researchers assert that cognitive–processing capacities which pertain to language decline across the lifespan, particularly in healthy older persons:

- Word–finding/–retrieval: reduced number of items named correctly on confrontation/picture naming tasks
- difficulties understanding more complex sentences in comprehension tasks
- fewer correctly recalled items on a paired associate learning task, etc.

Development: More elaborated discourse
Larger vocabulary

Memory ?
‘Noise’ ?

2) ‘The myth of cognitive decline’:

Analyses of the cognitive processing abilities of older persons must take into account all the experiences and the information older persons have accumulated in their memory or mental lexicon, and the manner in which **learning** takes place.

Slower responses reflect a growing search problem due to a person’s increased information–processing load inherent from a lifetime of learning. The amount and range of knowledge and skills acquired throughout the lifespan results in an increase in the overall amount of information to be processed at any one given time.

“Slower latencies reflect learning, not ‘decline’ “

(Ramscar, Hendrix, Shaoul, Milin & Baayen, 2014)

Aphasia

“Aphasia refers to the disturbance of any or all of the skills, associations and habits of spoken or written language, produced by injury to certain brain areas which are specialized for these functions“

(Goodglass & Kaplan, 1972, 1983)

Causes of aphasia:

- 1) Stroke (CVA): Ischemia(= insufficient blood flow), thrombosis (= blood clot), hemorrhage (=a bleed), embolus(=free-floating mass creating a blockage),
- 2) Brain tumor, 3) Trauma, 4) Infection

All aphasics have word-finding difficulties!

All language modalities usually similarly affected with regard to types of difficulties

4 main types of aphasia:

Broca's: 'telegraphic' speech (function words omitted /substituted); agrammatic sentence production; verb retrieval and comprehension of complex syntactic structures impaired

Wernicke's: language comprehension severely impaired; fluent speech production: paragrammatism; phonological and/or semantic errors (=paraphasias/jargon)

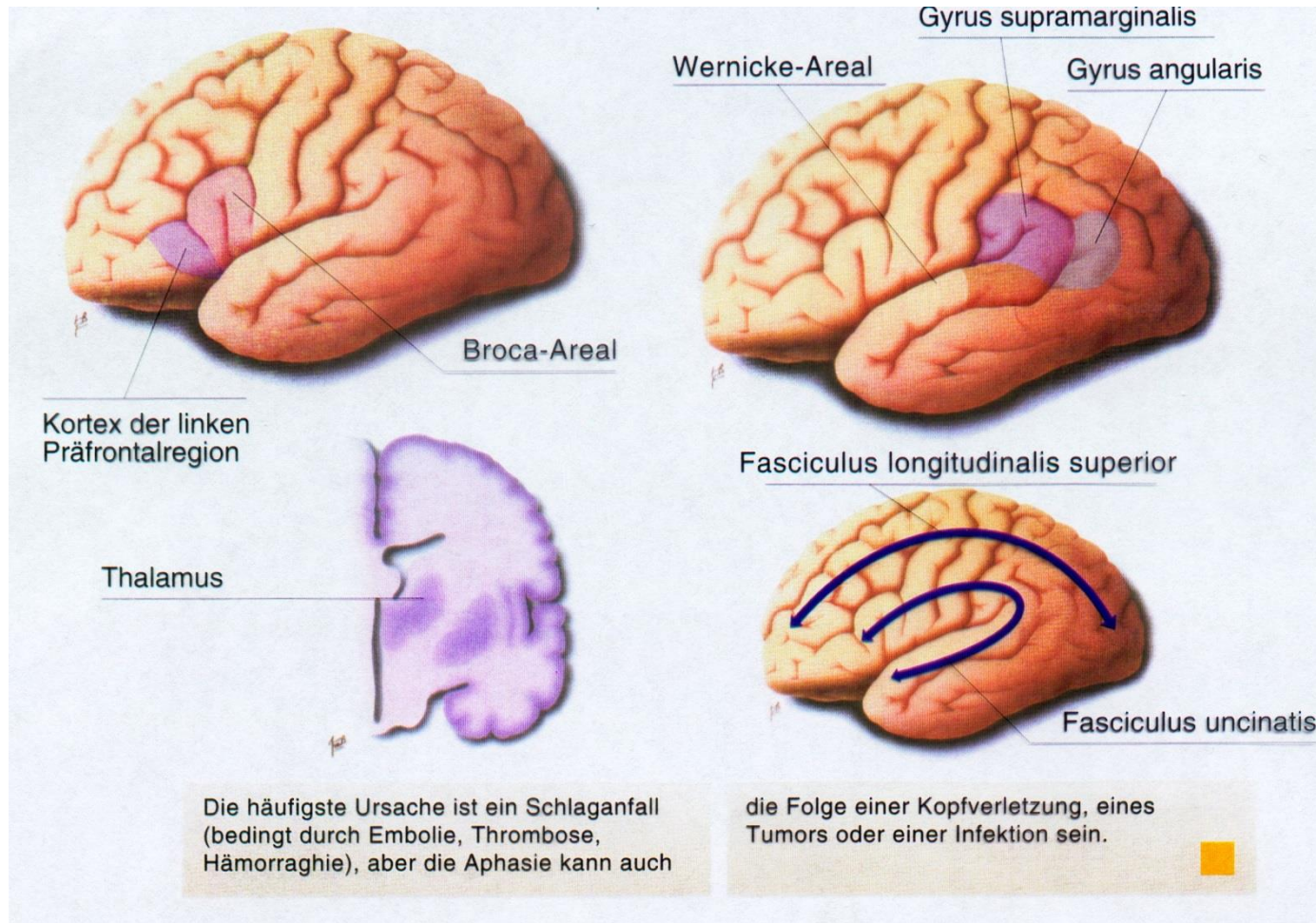
Anomic: Word-finding/-retrieval most impaired; fluent speech production

Global: Most severe form; all language modalities impaired to a greater extent

(Conduction aphasia, transcortical motor aphasia, transcortical sensory aphasia)

PPA!

Lesions resulting in aphasia



Aphasia therapy

Goal: improved (language) performance on treated items and

Facilitation – transfer – carryover –
generalization of therapy effects to: untreated
items – other modalities – spontaneous speech

Ultimate goal: enhanced (verbal and/or nonverbal)
communication resulting in a better quality of life
for the aphasic client

Spontaneous recovery!

ELA®–SYNTAX PROGRAM

Therapy Steps for the Syntax Program:

- 1) **‘Memory – Last session’**: The PWA is asked to recall the sentences worked on in the previous session.
- 2) **‘Old cards’**: Oral sentence production is practiced with the 4 to 6 photo cards worked on in the previous session.
- 3) **‘New cards’**: Construction of a sentence is practiced using 4 to 6 new cards one after another.
- 4) **‘Taking apart’** the sentence: Answering questions regarding the verb and thematic roles. Final production of target sentence.
- 5) **‘Comprehension check’**: for all of the stimuli selected for that session.
- 6) **‘New cards – Second time’**: Production of the sentences a second time.
- 7) **‘Memory – New cards’**: The PWA is asked to recall the new sentences worked on in that session.

Homework: The PWA dictates the sentences worked on in the therapy session to relative/care-giver or he/she writes down the sentences. The homework is given to the therapist at the beginning of the next session.

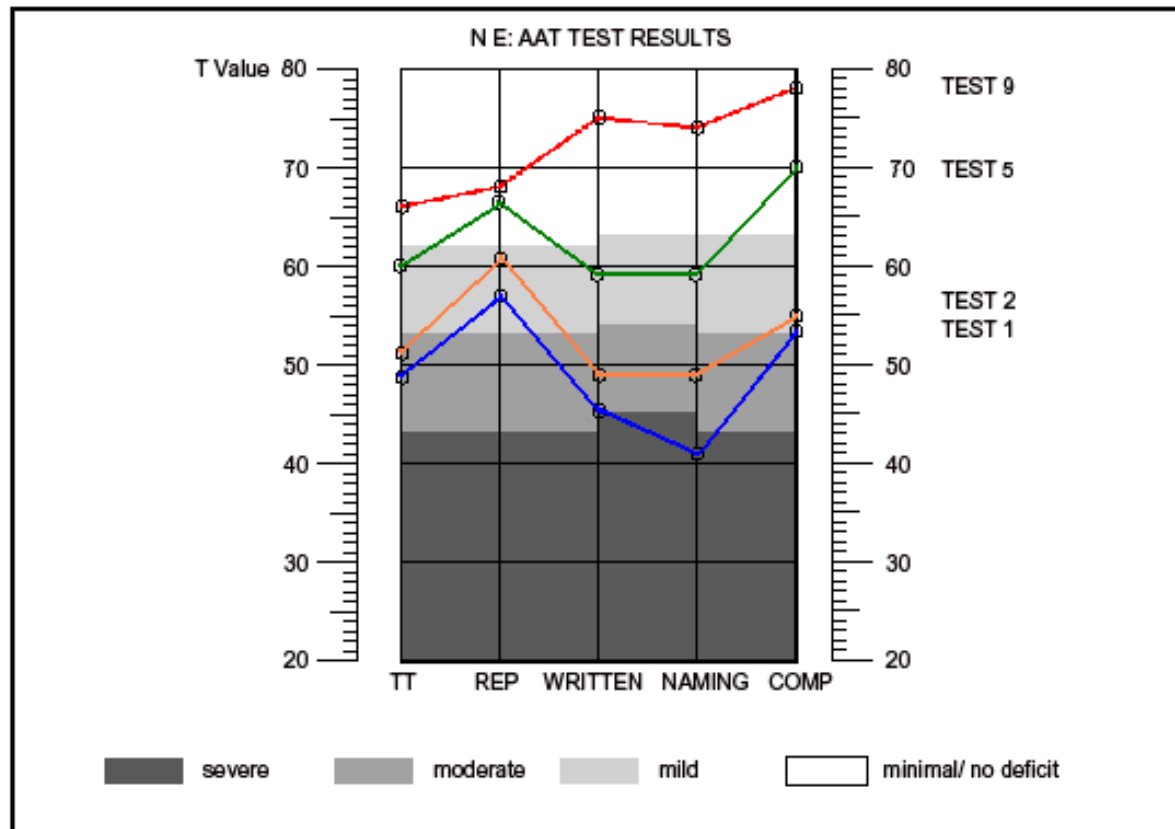
Programs for Text – Dialogue – Written language training

Everyday Life Activities Photo Series (ELA®)



NE: Aachen Aphasia Test Results: Test 1(pre-therapy) – 2 (post-therapy) – 5 – 9

Evolution: global → dynamic → Broca's → anomic → agraphia
without alexia → no aphasia (according to the AAT)

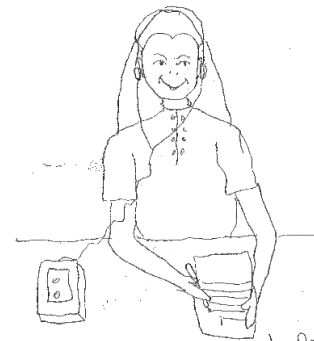


NE: Homework– Drawing from memory



Protocol 1: Syntax

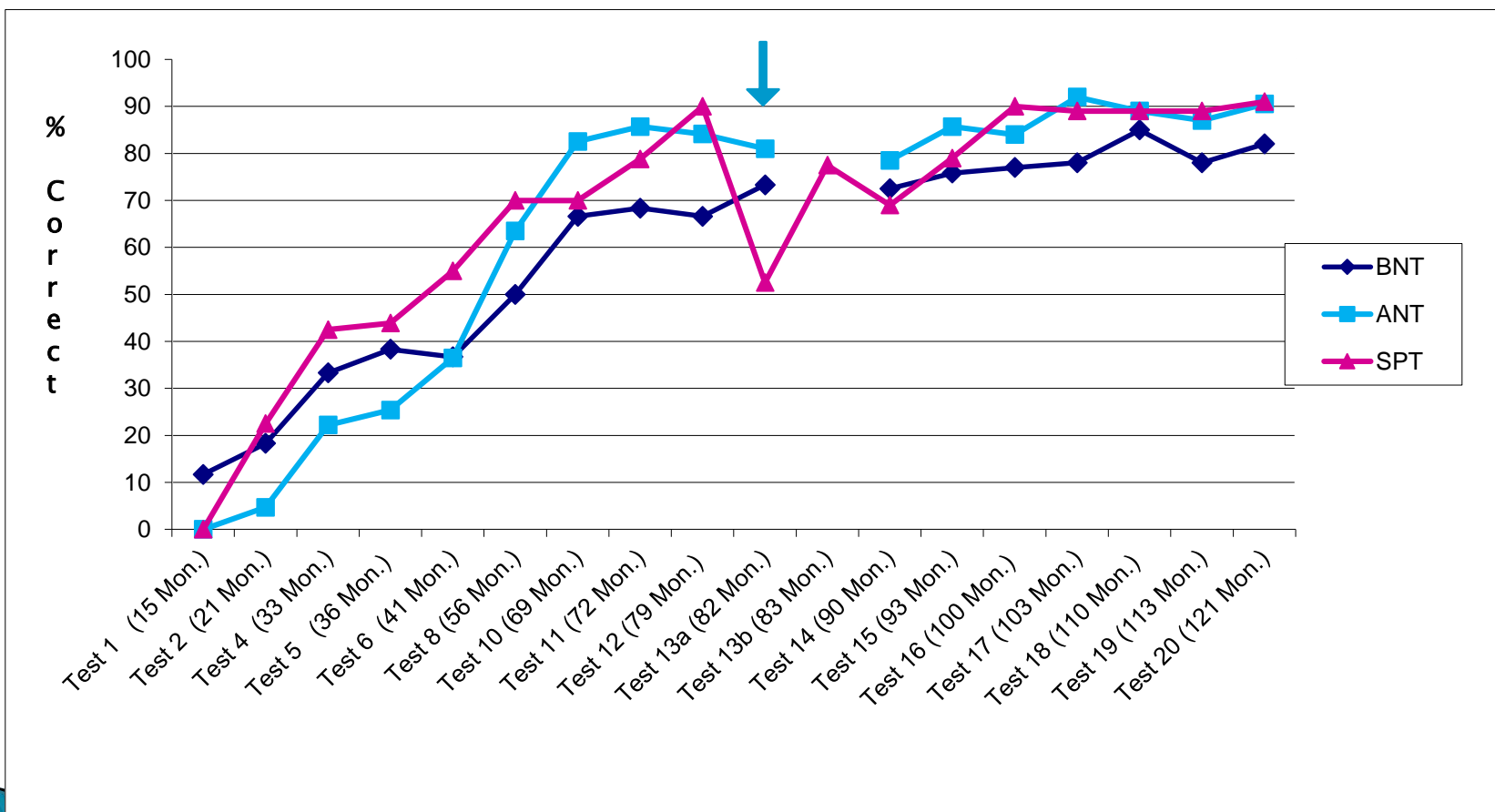
Protocol 3: Dialogue training



Mutter: möchtest Du telefonieren od. einen Brief schreiben?
Tochter: Ich möchte einen Brief schreiben!
 Gib mir bitte ein schönes Briefpapier!
Mutter: Ich habe kein schönes – geh doch eines kaufen!

Tochter: Ich will nicht eines kaufen gehen – ich will es jetzt schreiben!
Mutter: Nimm Dir ein weißes Papier u. schreib was nettes drauf!
 (jetzt schreibt die Tochter.)
Tochter: Liebe Oma!
 Ich bin jetzt auf dem Walkman, den Du mir geschenkt hast. Musik!
 Ich danke Dir viel mehr dafür – die Freude ist sehr, sehr groß!
 Auf meinem Weg zur Schule höre ich Musik u. auf dem Heimweg höre ich auch Musik.
 Beim Joggen höre ich auch Musik! Das war ein sehr gutes Geschenk von Dir Oma.
 Am Sonntag komme ich Dich

TH: Test results for 15 to 121 months post onset of aphasia: Test 1, 2, 4, 6, 8, 10, 11, 12, 13a, 13b, 14, 15, 16,17, 18, 19, 20



TH: Testing and therapy over 1000 hours

Principles of experience-dependent Neuroplasticity

1. Use It or Lose It	Failure to drive specific brain functions can lead to functional degradation.
2. Use It and Improve It	Training that drives a specific brain function can lead to an enhancement of that function.
3. Specificity	The nature of the training experience dictates the nature of the plasticity.
4. Repetition matters	Induction of plasticity requires sufficient repetition.
5. Intensity matters	Induction of plasticity requires sufficient training intensity.

Kleim & Jones, 2008

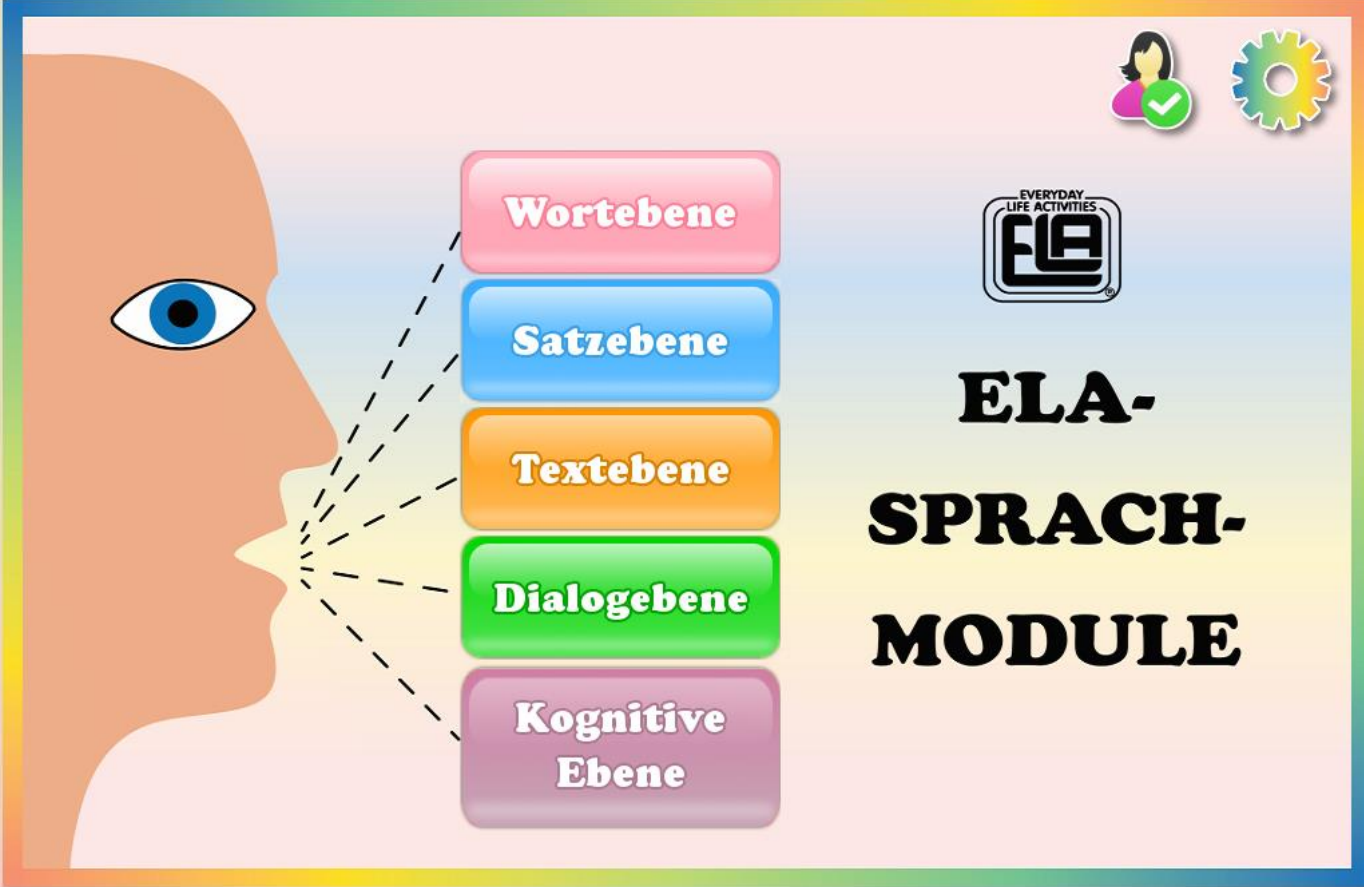
Principles of experience-dependent Neuroplasticity

6. Time Matters	Different forms of plasticity occur at different times during training.
7. Salience Matters	The training experience must be sufficiently salient to induce plasticity.
8. Age Matters	Training-induced plasticity occurs more readily in younger brains.
9. Transference	Plasticity in response to one training experience can enhance the acquisition of similar behaviors.
10. Interference	Plasticity in response to one experience can interfere with the acquisition of other behaviors.

Kleim & Jones, 2008

ELA®–Language Modules (2022)

Sprachmodule Bitte wählen Sie ein Modul!



The interface features a large profile of a human head on the left. From the mouth of the head, five dashed lines radiate outwards to five stacked, rounded rectangular buttons. The buttons are colored and labeled as follows: a pink button for 'Wortebene', a blue button for 'Satzebene', an orange button for 'Textebene', a green button for 'Dialogebene', and a purple button for 'Kognitive Ebene'. To the right of these buttons, the text 'ELA-SPRACH-MODULE' is displayed in a large, bold, black font. Above this text is the ELA logo, which consists of a stylized 'ELA' inside a square frame with the words 'EVERYDAY LIFE ACTIVITIES' above it. In the top right corner of the interface, there are two icons: a person with a green checkmark and a colorful gear. In the bottom left corner, there is a small icon of a house with a person inside.

Wortebene

Satzebene

Textebene

Dialogebene

Kognitive Ebene

**ELA-
SPRACH-
MODULE**

EVERYDAY
LIFE ACTIVITIES
ELA

v5.0.14