

Effect of Reduced Syntax Therapy (REST) on functional communication in chronic agrammatism



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Introduction: There are two different approaches to the rehabilitation of agrammatism. The first aims for repair of the agrammatic deficits by removing or reducing them. The second, a compensatory one, teaches the agrammatic patient to use linguistic structures that bypass the linguistic deficits. By overusing the elliptic repertoire patients simplify their messages. Language production should then be more effective and efficient. However, compensation asks for new speech behaviour and might therefore seriously challenge stroke patients. Cognitive and social-emotional factors may negatively influence the effectiveness of the treatment. So, although compensation might be the best solution to the underlying cause of the agrammatic deficits, agrammatics might not be able and/or willing to learn and apply the new compensatory behaviour.

Objective: Does REST lead to a change in speech style and consequently to an increase in functional communication ability?

Methods: An adapted version of the Reduced Syntax Therapy developed by Schlenck, Schlenck and Springer (1995) is used. In this treatment program agrammatics learn to overuse the elliptic repertoire.

Level	Verbal projection	Example
1.	V	Lezen (<i>reading</i>)
2.	V + NP/PP	Koffie drinken (<i>drinking coffee</i>)
3.	V + AdvP/PP	Hard gevallen (<i>fallen hard</i>)
4.	V + NP/PP + AdvP/PP	Krant niet ontvangen (<i>newspaper not received</i>)
5.	NP + AP	Man boos (<i>man angry</i>)
	NP + PP	Tim op school (<i>Tim at school</i>)
	NP + NP	Mieke zus (<i>Mieke sister</i>)
6.	NP + V	Vrouw slapen (<i>woman sleeping</i>)
7.	V + NP/PP + NP	Wim huis gekocht (<i>Wim bought house</i>)
8.	V + NP + AdvP/PP	Anne in bad lezen (<i>Anne reading in bath</i>)
9.	V + NP + NP + NP	Jongen man koekje geven (<i>Boy giving man cookie</i>)
10.	V + NP/PP + NP + AdvP/PP	Opa met loep krant lezen (<i>Grandfather reading newspaper with magnifying-glass</i>)

Figure 1: REST therapy levels exemplified for Dutch and English

We use multiple single-case withdrawal designs by including at least 15 subjects. Subjects will be trained during a period of 4 months for 4 hours a week. Treatment will be withdrawn for a week if 90% of the utterances produced is elliptical.

Pre-, post- and follow-up measurements consist of a Sentence Order Inflection Test, ANELT, conversing with a therapist, a significant other and in the presence of background noise. Different neuropsychological tests measuring executive functioning will also be administered.

Subjects:

- chronic agrammatic deficits (> 6 months post-onset)
- subject should use the less efficient speech style, i.e. no adaptation or a corrective one
- production of complete, finite utterances should have been trained (> 3 months)
- age between 25 and 75

Results (n=3):

1. Learnable?

For the three agrammatics tested, the number of elliptical utterances increased as the result of training. However, subjects differed with respect to the highest therapy level reached, i.e. the complexity of the ellipses to be produced (being level 5, 7 and 10 respectively).

2. Transfer to untrained material?

Two agrammatics were able to use the efficient speech style significantly more often on untrained material. See for example figure 2 which presents the overall speech style of a 65 year old female, 1;3 years post-onset of a Broca aphasia caused by and ICVA in the LH.

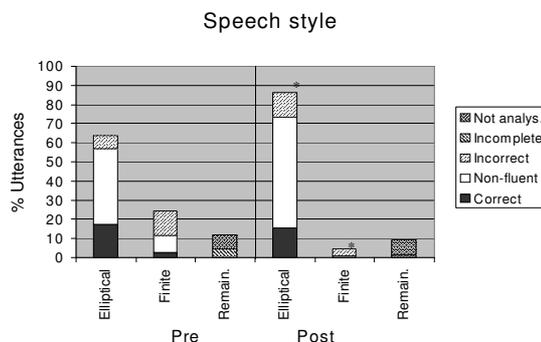


Figure 2: Overall speech style (n=1)

3. Individual differences?

The patient showing no significant transfer to untrained material scored worst on prefrontal tests measuring executive functioning.

4. Functional communication?

The effect on functional communication is variable and seems to depend both on the type of speaking task and on the measure of communicative efficacy. Therefore, we will both search for an optimal speaking task and for a more sensitive measure.

Although the message is strongly simplified in elliptical style, production remains effortful. This is indicated by the high percentage of non-fluent ellipses.

Preliminary conclusions:

Agrammatics do seem able to learn telegraphic style. A new (more sensitive) measure will be developed to fully answer the question whether a change in speech style increases functional communication ability.

References

Schlenck, C., Schlenck, K.J. & Springer, L. (1995). Die Behandlung des schweren agrammatismus: Reduzierte-syntax-therapy (REST). Stuttgart: Thieme.