

# Semantic feature analysis: an approach to treat comprehension deficits??

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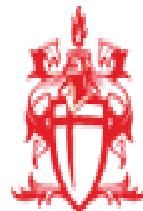


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# Introduction

- Semantic Feature Analysis (SFA) is a therapy approach that has proven to be highly effective in achieving positive outcomes when targeting semantically based naming deficits (Boyle & Coelho, 1995; Coelho *et al.*, 2000; Boyle, 2004; Davis, 2005).
- However, until now few studies have investigated the efficacy of this approach in treating semantically based comprehension deficits. SFA utilizes existing semantic networks to facilitate word retrieval through activation of semantically related items or networks (Drew *et al.*, 1999; Boyle & Coelho, 1995; Coelho *et al.*, 2000; Boyle, 2004).

# Aim

- Nevertheless, the efficacy of SFA in treating semantically-based comprehension deficits has been explored by few studies (Smith & Siyambalapitiya, 2012).
- The present study aimed to employ a treatment approach based on SFA to remediate a semantically-based comprehension deficit in three persons with Global aphasia.

# Participants

Participant	Age	Time after stroke	BDAE:Acoustic Comprehension Scores
TT	84	6 moths	26,5/72
CS	48	7 months	21/72
PK	57	13 months	3/72

All subjects were assessed with the Greek Version of BDAE (Papathanasiou et al , 2008) and were ) were consistent with a diagnosis of Global aphasia.

# Research protocol

## Pre-treatment assessment

- Case history
- BDAE; FACS-ASHA, SAQOL
- 1 Oral Confrontation Naming & 1 Spoken Word – Picture Matching Task (SWPM) of the 260 colorized Snodgrass and Vanderwart pictures (multiple baseline)

## Therapy phase

- 36 x treatment sessions
- 3 times per week, for 12 weeks

## Post-treatment assessment

- BDAE; FACS-ASHA, SAQOL
- 1 Oral Confrontation Naming Task & 1 Spoken Word – Picture Matching Task (SWPM) of the 260 colorized Snodgrass and Vanderwart pictures (multiple baseline)

## Follow-up: 12 weeks post therapy

- BDAE; FACS-ASHA, SAQOL
- 1 Oral Confrontation Naming Task & 1 Spoken Word – Picture Matching Task (SWPM) of the 260 colorized Snodgrass and Vanderwart pictures (multiple baseline)

## Procedure – baseline assessment

- At the present study the following procedures were employed in SFA treatment for comprehension deficits.
- The 260 colorized Snodgrass and Vanderwart pictures (Rossion&Pourtois, 2004) were used as therapy material and as a primary outcome measure.
- Before initiation of therapy, three baseline sessions took place in order to determine treatment items: an oral confrontation naming session and two sessions of a spoken word – picture matching (SWPM) task.

## Procedure – baseline assessment

- Specifically, each participant had first to name the 260 colorized Snodgrass and Vanderwart pictures. Correct answers were recorded.
- At the two following sessions, the SWPM task was employed, based on the Snodgrass and Vanderwart pictures. A set of four pictures - the target picture, a semantic distractor, an unrelated picture and a phonological distractor - were presented and participants had to select the appropriate picture.



## Procedure – baseline assessment

- The pictures were presented in a random order to each participant, without any cueing or feedback. Based on the results of these trials, those pictures that were not successfully selected were used as treatment (30 – 40 items) and probe items, individual to each participant.

# Procedure- therapy sessions

- After the completion of the baseline sessions, therapy was initiated, based on the principles of SFA (Boyle,2004), comprising of 36 one-hour sessions, three times per week, for 12 weeks.
- Re-evaluation, using BDAE, Oral and Comprehension tasks, was taken place immediately post therapy as well as 3 months post therapy.
- Scoring involved calculating the number of correct responses, providing 1 point for each correct answer.

# Therapy

- At the beginning of each session, the clinician showed the participant the target picture and asked him to name it.
- In case they failed to name the target picture, the clinician proceeded with the completion of the SFA chart.
- Features used in the chart were *superordinate category, use, action, physical properties, location, and association*. For each feature, the clinician provided orally pairs of associated words, requiring the participant to select the most appropriate one.

# Therapy

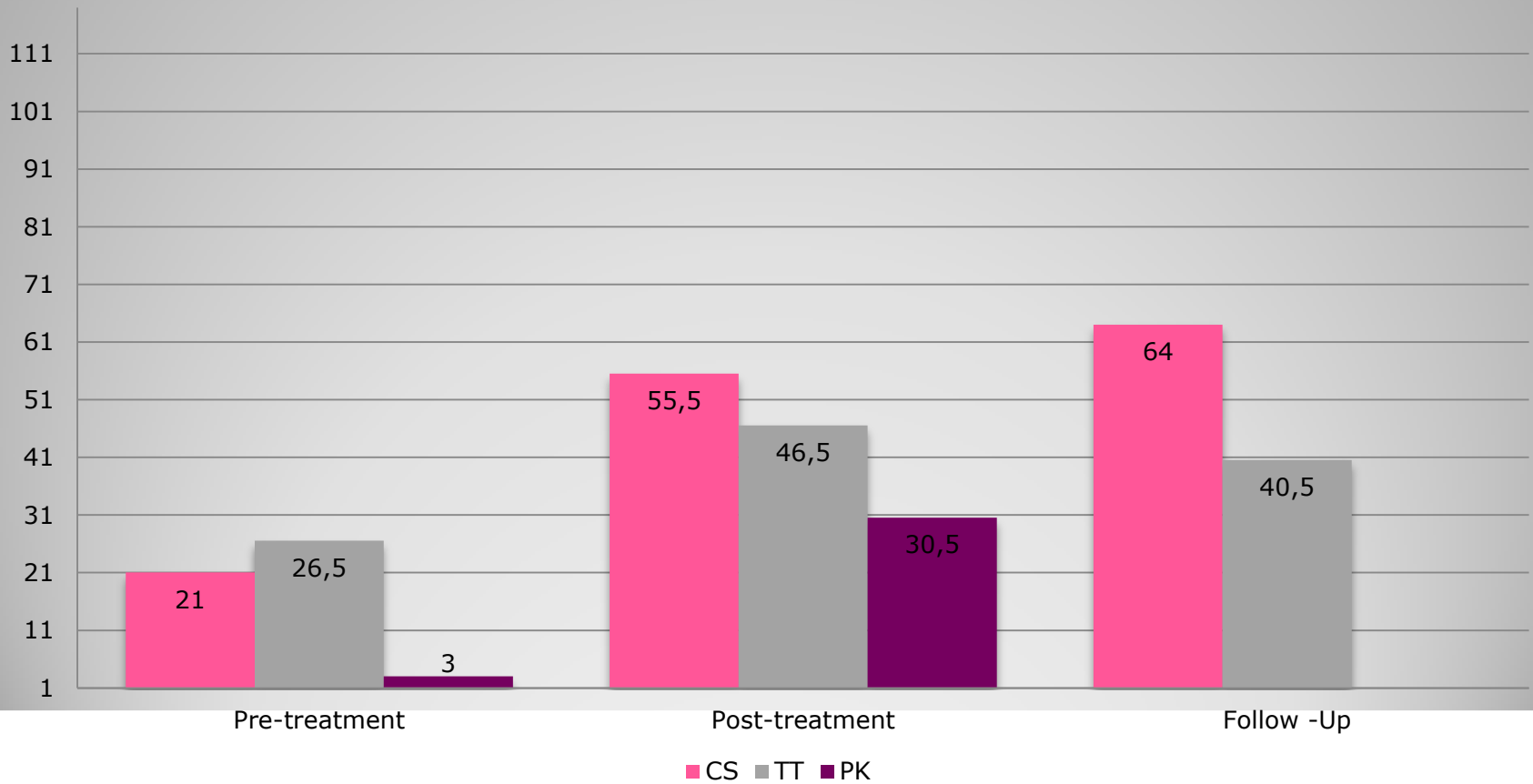
- In case of failure, cueing was provided. When finishing all features, the clinician encouraged the participant to produce the target word.
- Cueing was provided in the following order:
  - a. gesturing, b. contextual cues (i.e. It is + gender), c. mouthing, d. semantic cues e. phonemic cues and f. repetition.
- Once all correct semantic features were identified and the target word correctly named, the clinician recapitulated (e.g. *a dog has fur, a dog barks, a dog eats bones, a dog is an animal*)

# Therapy

- Then, the clinician provided each target surrounded by three pictures. Pictures used gradually became more closely semantically related. Participants were instructed to identify the target picture based on certain features orally presented. The number of features provided was gradually reduced depending on the participants' accuracy. In case of an incorrect response, the correct response was provided.
- At the end of each session, the total number of correct responses on naming as well as on comprehension was estimated.

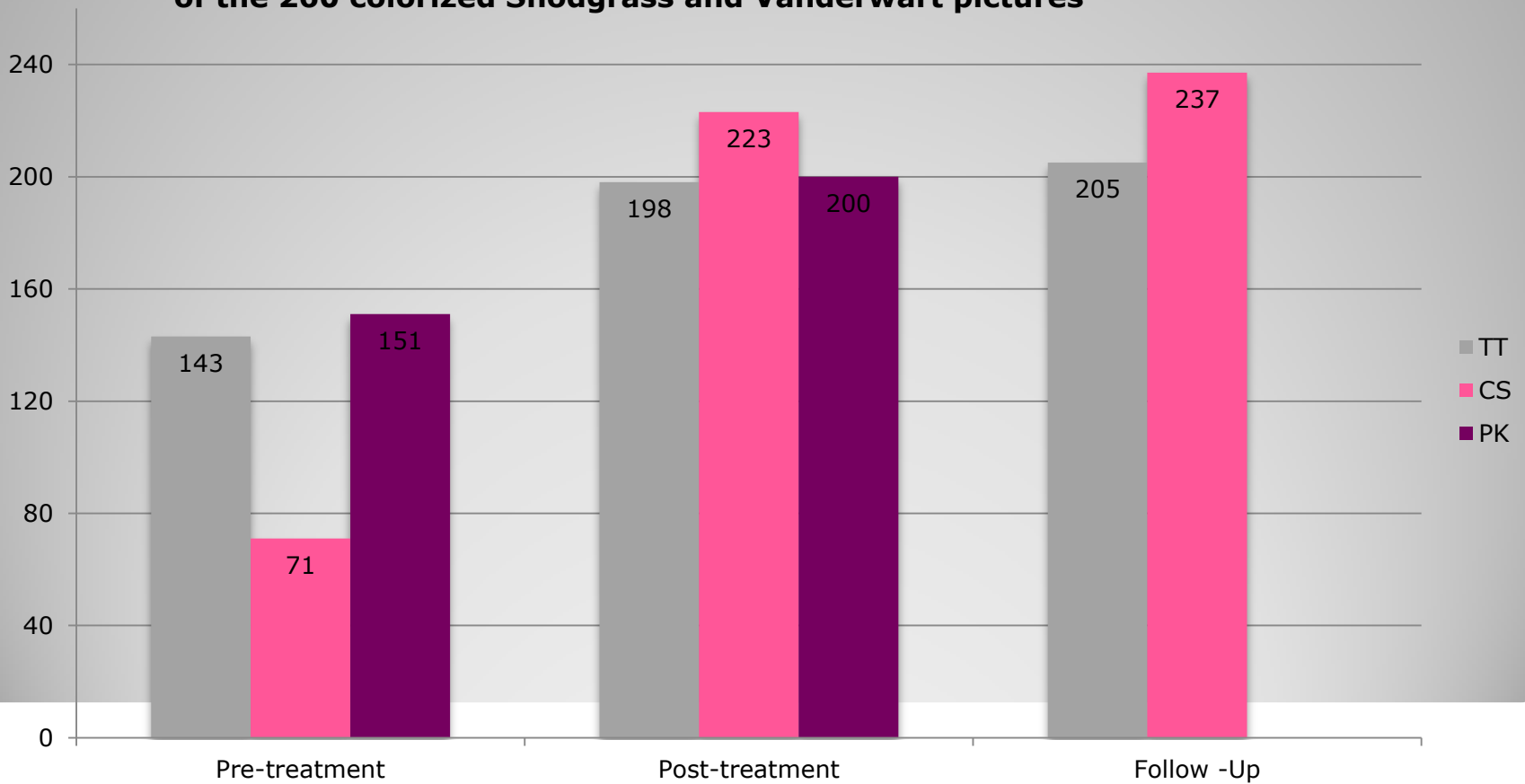
# Results

## BDAE Results: Auditory Comprehension Subtest



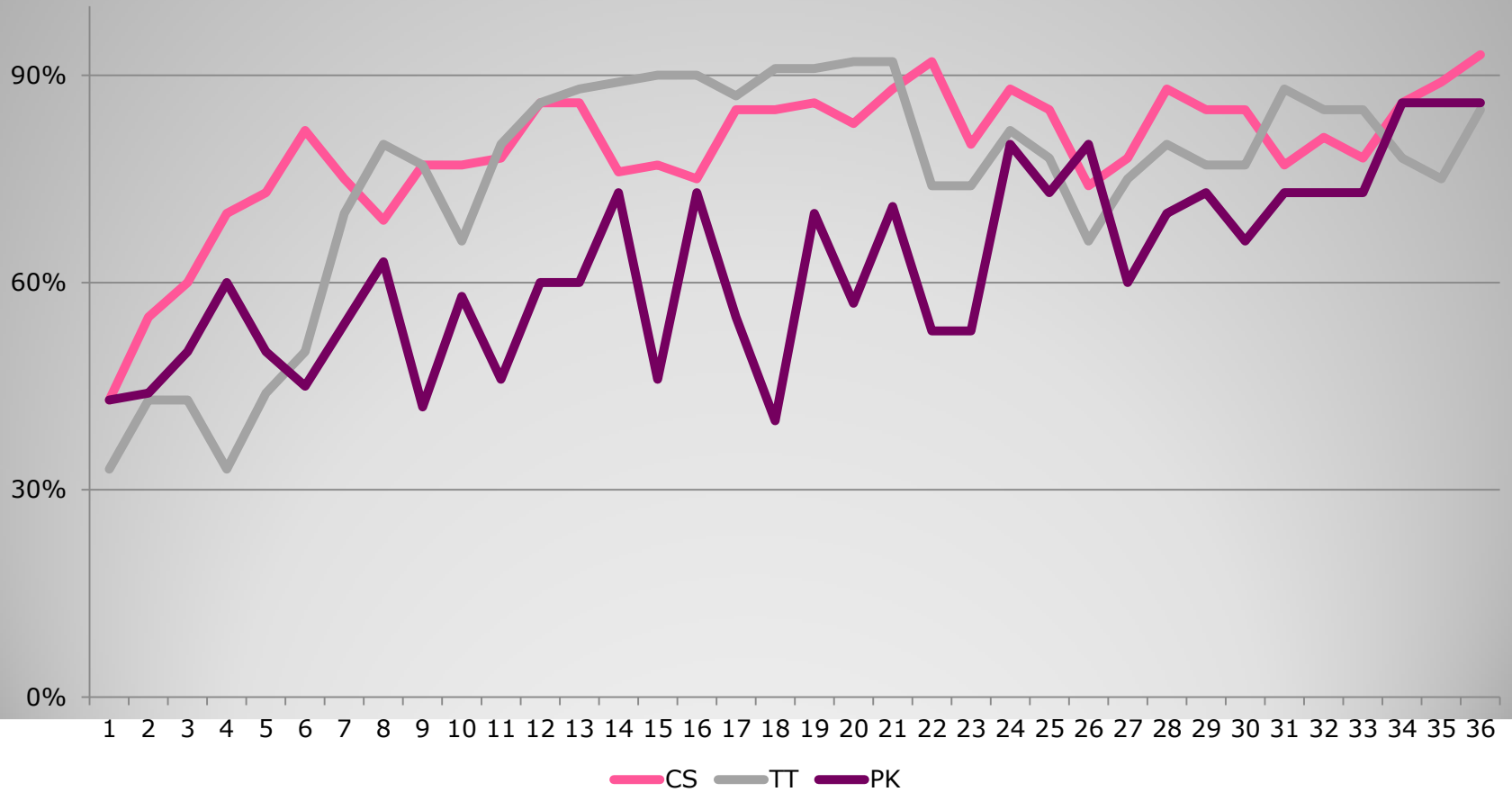
# Results

## Spoken Word – Picture Match Task Results of the 260 colorized Snodgrass and Vanderwart pictures



# Progress in therapy

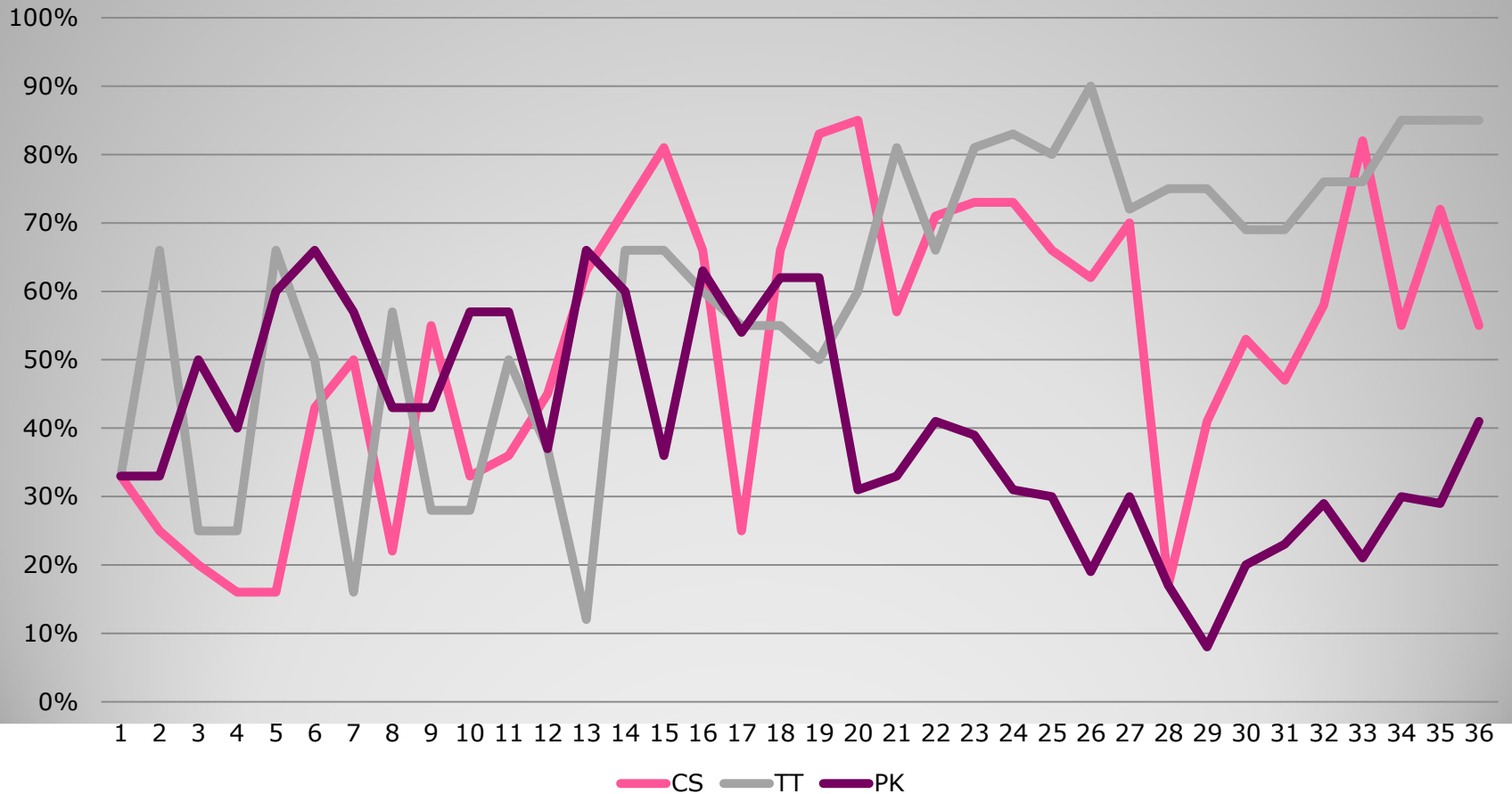
## Spoken Word – Picture Match (SWPM) Task per session





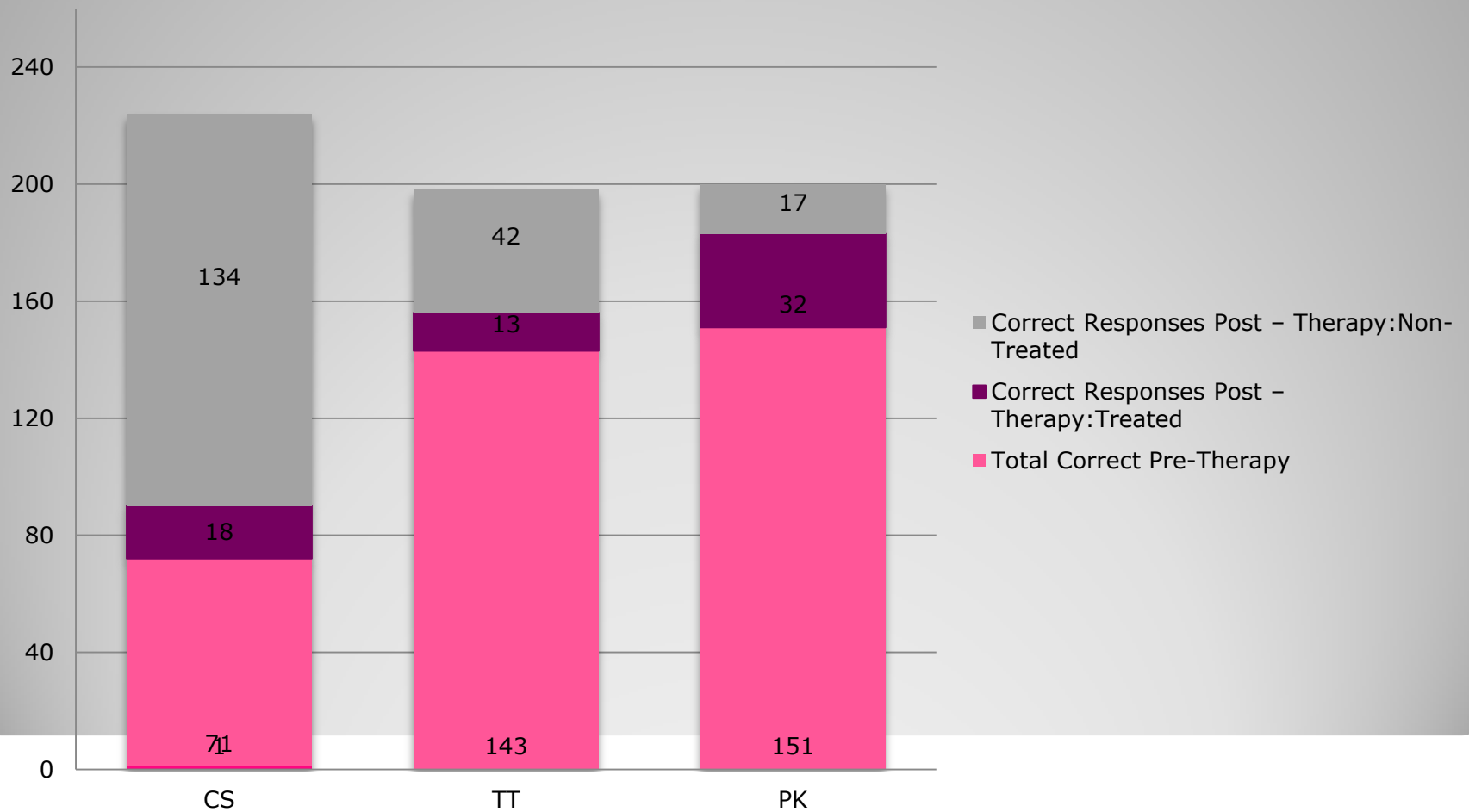
# Progress in therapy

## Oral Confrontation Naming per session



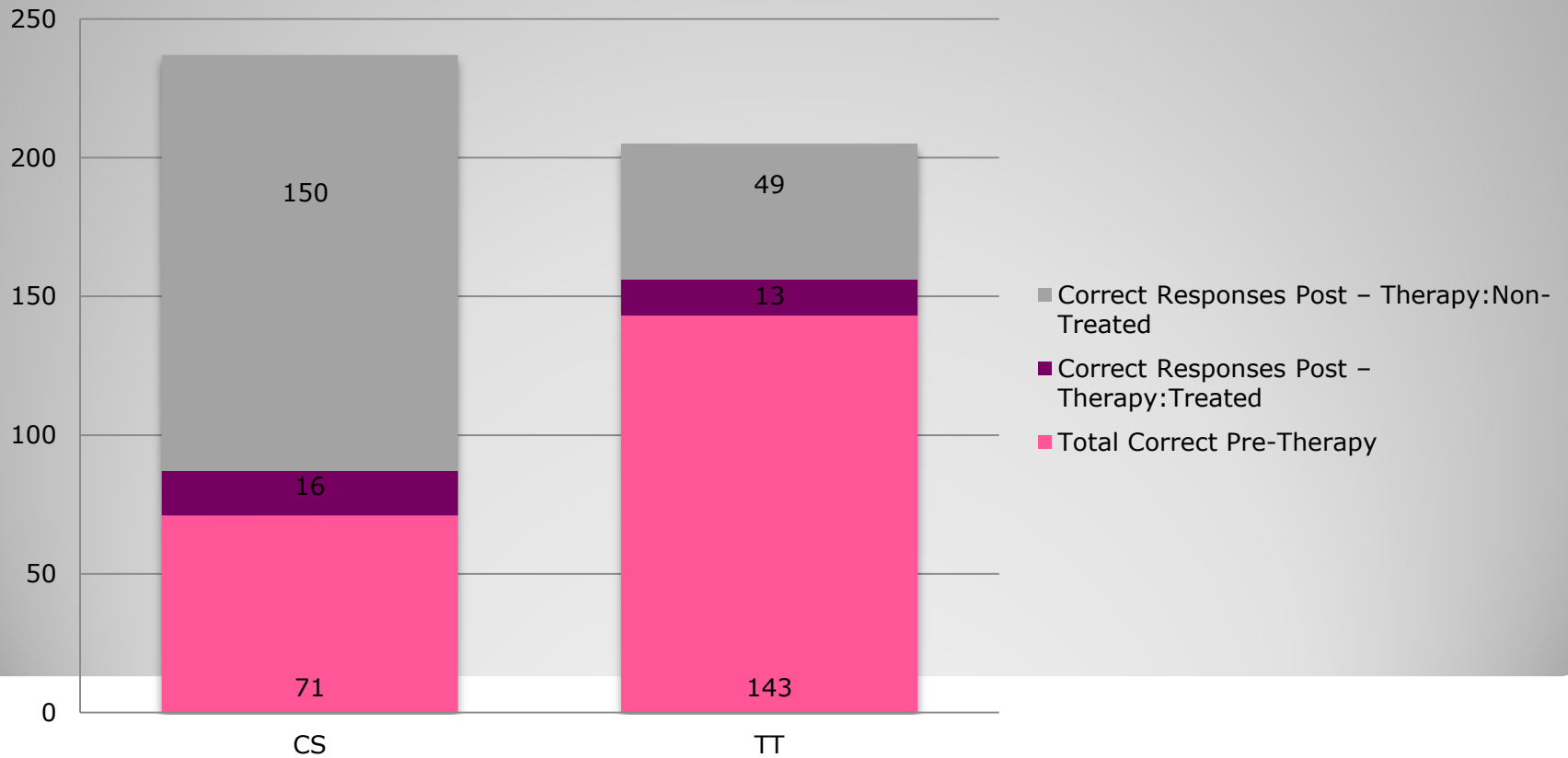
# Correct responses post therapy

Accuracy of responses for treated and non treated Post-Therapy

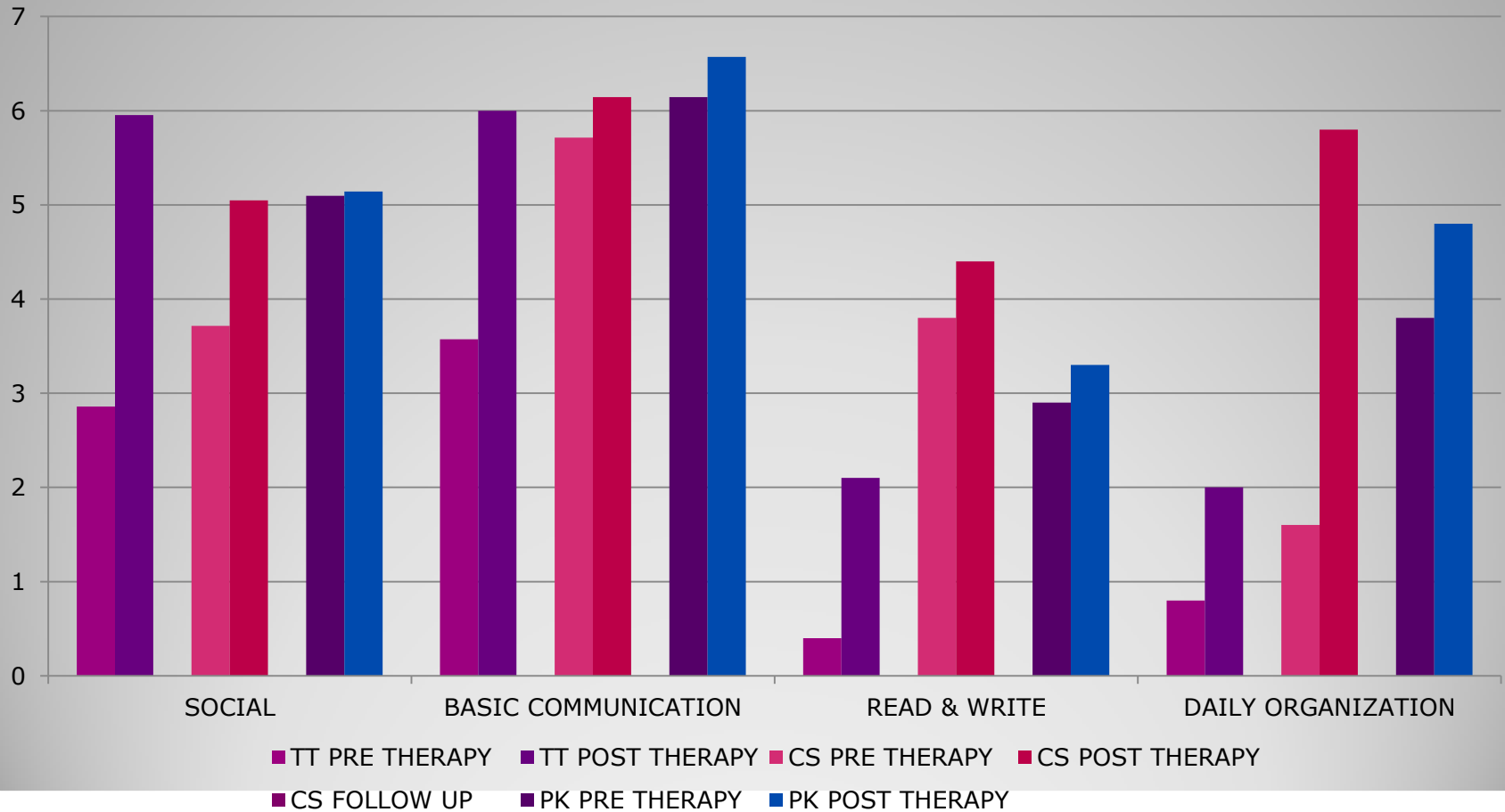


# Correct responses follow up

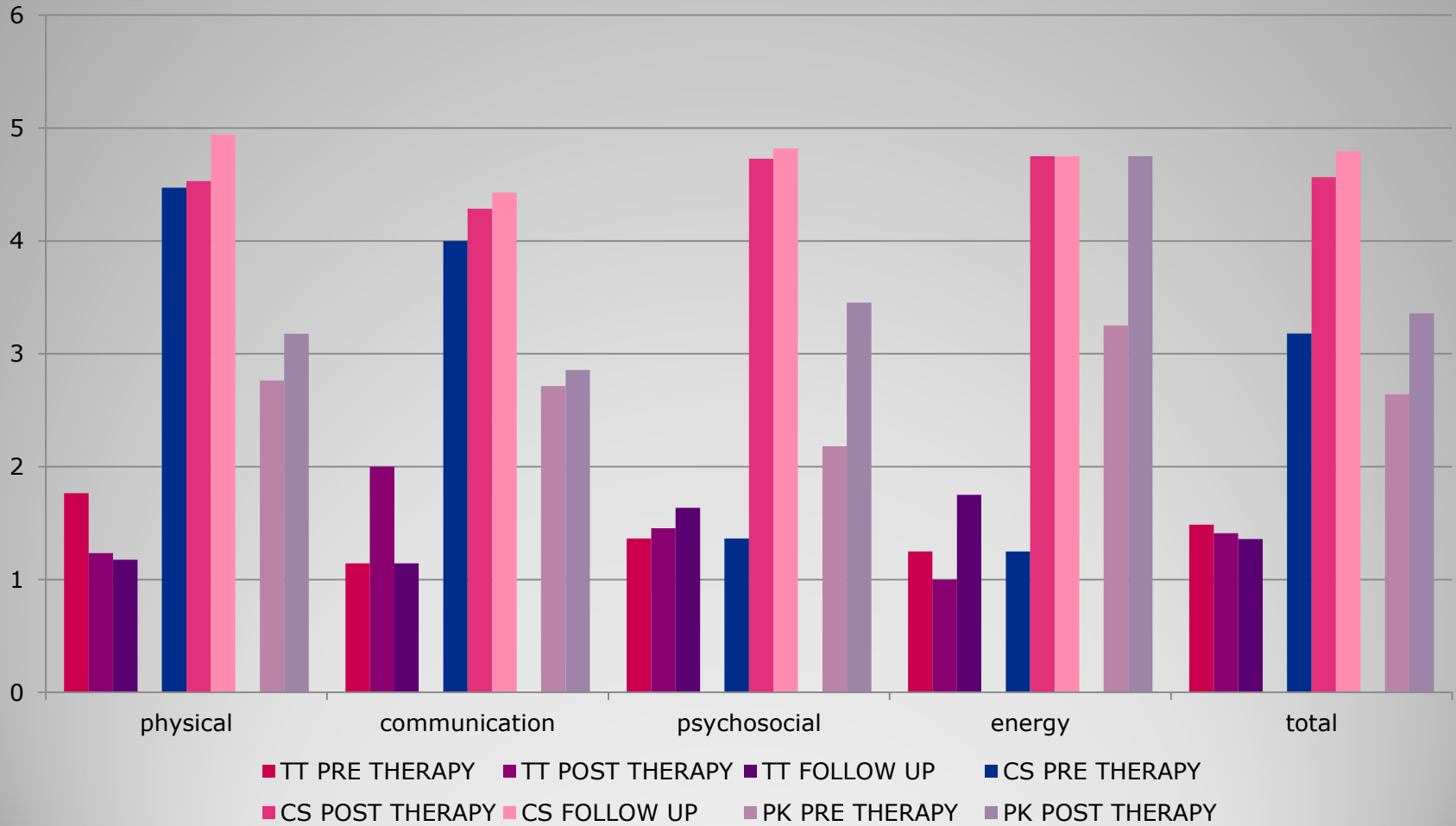
## Accuracy of responses for treated and non treated Follow - Up



# FACS- ASHA



# SAQOL



# CONCLUSION

- Findings from this study imply that C-SFA was effective in improving the single word comprehension of three individuals with comprehension difficulties.
- The improvement was maintained three months post therapy
- Generalization in non treated items was observed post therapy but also three months post therapy

# CONCLUSION

- Improvement in comprehension deficits was also found to improve their functional communication and the quality of life of the subjects
- These positive results are encouraging, since few studies investigate treatment approaches for comprehension deficits in aphasia, but a replication with a larger sample is required.

