

Semantic therapy to improve developmental word finding difficulties: Does the method of delivery impact effectiveness?

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Aims of our therapy studies

1. Ebbels et al. (in press, IJLCD)
 - Investigate whether 1:1 semantic therapy is effective for improving word-finding skills for participants with LI & WFD
2. Follow Up Clinical Trials (Nicoll & Ebbels, in prep)
 - Investigate whether method of delivery matters.
 - a. Same therapy delivered in a group
 - b. Same therapy delivered in pairs

Word Finding Difficulties (WFDs)

Eg. "microphone" = "Oh this is tricky...when you on...it's when you're on...like on a concert...and you get this...micro...scope...no...like thing when you speak into it and it's even louder"

(Hayman 1996, cited in Chiat, 2000)

- hesitation
- false starts
- fillers
- empty words
- substitutions
- circumlocutions

Underlying problem: semantic difficulties?

- Children with WFDs are poorer at naming pictures than CA and LA control but not letters and numbers (with minimal semantic content) (Dockrell et al., 2001)
- Naming errors in children with WFDs associated with less detailed semantic representations (as assessed by drawings, definitions and recognition of target objects) (McGregor & Appel 2002; McGregor et al., 2002)
- Children with WFDs produce definitions that differ to CA peers' (describe perceptual features of objects, not semantic categories) (Dockrell et al., 2003).
- Children with WFDs have difficulties with semantic but not rhyme and alliteration fluency tasks (Messer et al., 2004).

Summary of previous therapy studies

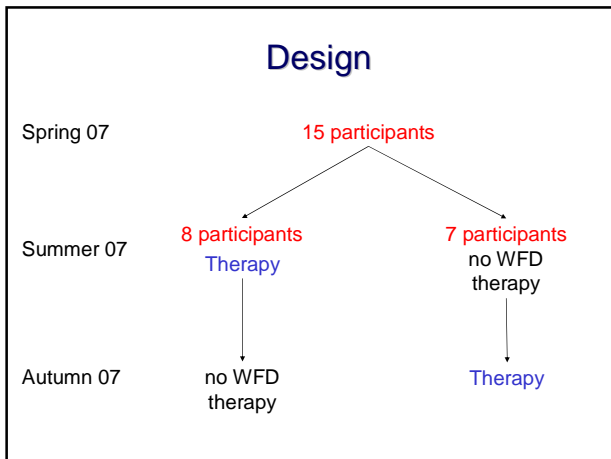
- Therapy for WFDs can be effective:
- Best, 2005: computer provides letter cues, converted to phonemes. Progress with targeted but not control words.
- McGregor & Leonard, 1989; Hyde Wright, 1993; Easton et al., 1997 used a range of strategies: elaboration & retrieval; phonological & semantic cues - don't know which were contributing to success
- Others compared semantic vs. phonological therapy
 - Wing, 1990:
 - phonological/perceptual therapy group made sig progress
 - semantic therapy group didn't
 - Hyde Wright et al, 1993:
 - semantic therapy group > controls,
 - phonological therapy group = controls (but different controls)

Study 1 (2007) a Randomised Controlled Trial

Ebbels et al. (in press, IJLCD)

15 Participants:

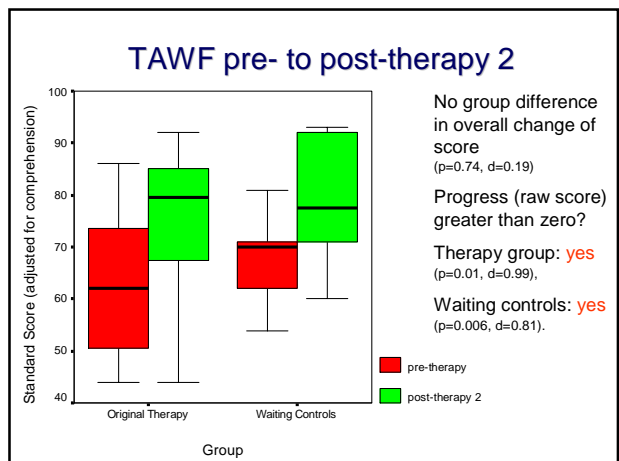
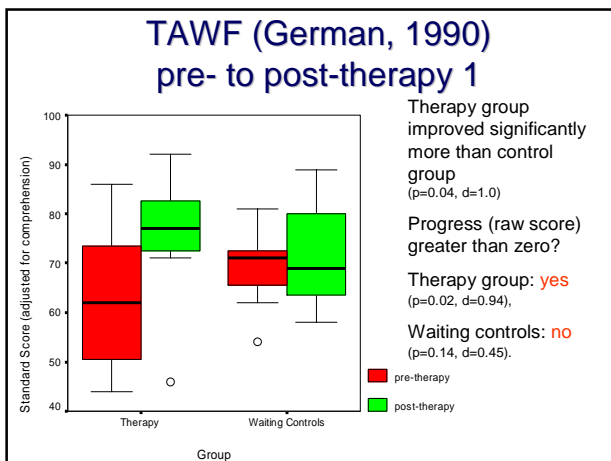
- Age: 9;9 – 15;11 (mean: 13;3)
- Language impairments and WFD
- Mean standard scores:
 - CELF Receptive Language: 72
 - CELF Expressive Language: 69
 - BPVS: 76
 - TAWF: 69
- One participant showed scores on CELF and BPVS in normal range, but TAWF score of 69, all others impaired on all measures



- ### Therapy
- 2 x 15 mins per week for 8 weeks (4 hours)
 - Pupils taught using photo cards of one particular category (animals, clothes, food)
 - Within the category SLT chose which cards to use for each pupil
 - Therapy programme broken down into steps with session schedule to ensure equity between SLTs

- ### Summary of Therapy Activities
- Categorisation – broad and narrow semantic groups
 - Discussion of common attributes for broad & narrow categories
 - Discussion of key attributes for individual items
 - 2 games based on semantic categorisation and semantic cueing

- ### Tests
- Blind assessment throughout studies**
- Test of Adolescent Word Finding (TAWF, German, 1990)**
- Standardised test of word finding
 - Name pictures (nouns and verbs), complete sentences with missing words, name items from descriptions, name categories on hearing list of members
- Test of Word Finding in Discourse (TWF-D, German, 1991)**
- Describe 3 pictures
 - Word finding behaviours noted
- Naming speed tests**
- Name as many animals, clothes, food as possible in one minute



Other tests

- Word finding in Discourse
 - No significant difference between groups
- Naming speed
 - No significant difference between groups
 - Pupils did not get better at the category for which they had therapy
 - But, 8/15 pupils were actually scoring within normal range at this pre-therapy, therefore maybe unreasonable to expect change

Conclusion

- Four hours of semantic therapy significantly improved word finding ability on a standardised test
- On average, pupils increased from standard score of 65 to 76 on TAWF, but only when they received the therapy
- The original therapy group maintained progress for 5 months
- Progress doesn't appear to have generalised to discourse
- Amount of progress was not related to pre-therapy performance on word-finding or general language measures

Group Therapy

- SLT is delivered directly or indirectly in groups for a range of SLCN (Law et al, 2003)
- Group therapy has been shown to be effective for a variety of SLCN such as:

Communication Need	Authors (Date)	Participants' Education Stage
Vocabulary	Nash, H. and Snowling, M. (2006)	primary
Phonological Awareness	Denne, M. et al (2005)	primary
Expressive syntax	Hirschman, M. (2000)	primary
Expressive Language Skills	Gallagher, A. L. & Chiat, S. (2009)	pre-school
Mixed communication skills	Sage, R. (2001) Best, W. et al (1993)	primary/secondary pre-school

Summary of previous therapy studies

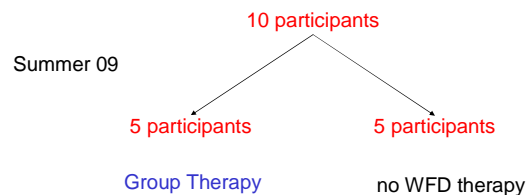
- Very few studies have compared same therapy in variety of delivery modes. Two RCTs:
 - Sommers, R.K. et al (1966) –phonology (aged 7+)
 - No difference between group vs. individual intervention
 - Boyle, J.M. et al (2009) – primary aged children - receptive/expressive language skills. 4 therapy modes (group/individual + direct/indirect). No difference between modes.
- Even fewer have compared intervention delivery modes for secondary aged children or WFDs

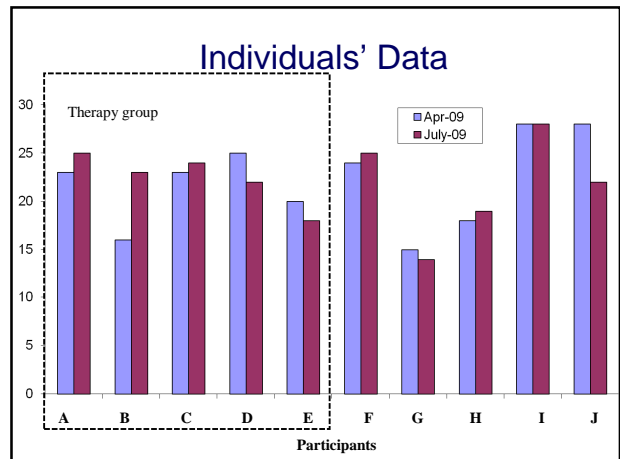
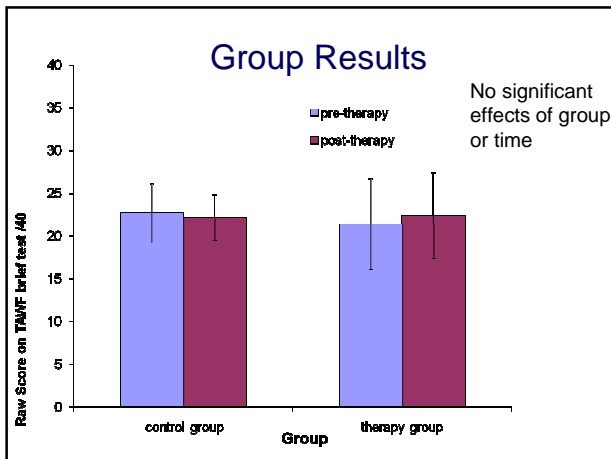
Study 2a (Summer 09): Group Therapy

10 Participants:

- Age : 12;5 yrs (11;8 – 13;7 yrs)
- Same KS3 class
- Language Impairments and WFD
- Mean Standard Scores:
 - CELF 4 Core Language Score: 62
 - BPVS II: 82
 - TAWF: 69
- Selected for therapy group by class SLT according to clinical judgement/therapy priorities

- Therapy schedule same as in individual therapy...
- ..except 1x 30 mins as part of KS3 SLT group (animals) combined 1a +1b session plans
- ..within 60 min group – top and tailed by games/activities not targeting WFD
- Group delivered by Student SLT + Therapist





Why wasn't group semantic therapy effective for WFD?

- ? Dilution of individual attention x 5
- ? Individuals not able to learn as part of group
- ? 2 x 15 mins effective but not 1 x 30 mins
- ? Using peers' categories rather than own as starting point for therapy
- ? SLT/SLT student not able to personalise enough to be effective
- ? Group dynamics

Study 2b (09/10) : Paired Therapy

- Same 10 participants as group study (now in different classes)
- Therapy delivered to 8/10 participants, staggered over 3 school terms
- Participants tested each term, even when not receiving therapy to provide control
- Each pair received 4 hours of same semantic therapy as individual RCT either as 2 x 15 mins/week or 1 x 30 minutes/week (depending on timetable constraints)
- Category (excluding animals) selected by therapist

Therapy Schedule

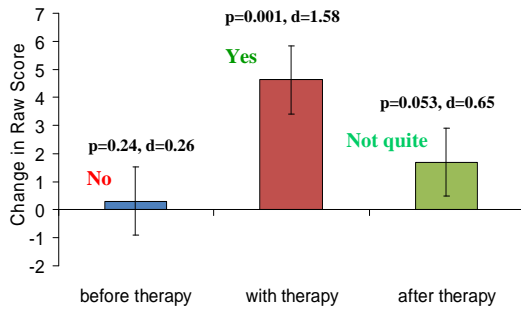
Participant	Summer '09	Autumn '09	Spring '10	Autumn '10	Spring '11
1	group	control	control	control	
2	group	control	control	control	
3	group	control	control	paired	control
4	group	control	control	paired	control
5	group	paired	control	control	
6	control	paired	control	control	
7	control	control	paired	control	
8	control	control	paired	control	
9	control	control	control	paired	control
10	control	control	control	paired	control

Analysis

- We calculated for each participant
 1. Their mean **change** in raw score over all terms **pre-paired therapy** (including group therapy term as this was not shown to be effective)
 2. Their **change in score over the term when they received paired therapy**
 3. Their **change in score post-therapy**

Change in Raw Score on TAWF (brief test)

Change scores differed before, with and after therapy ($p=0.02$, $np2=0.42$)



Was progress sig greater than zero?

Comparison of paired with 1:1 therapy

- Comparisons of change of raw score on TAWF brief test with therapy (immediately pre- to immediately post-therapy)
 - a. for those who received therapy in pairs and
 - b. for those who received it 1:1 (previous study)

showed no difference between paired and individual therapy, $t(20)=0.39$, $p=.70$, $d=0.19$

Conclusions

- Paired semantic therapy is more effective than no paired therapy for WFD
- 4 hours of paired semantic therapy significantly improved word finding raw scores on a standardised test (TAWF)
- Progress was at least maintained and may have continued after therapy ceased.
- Individual SLT \approx paired SLT $>$ group SLT for WFD (for this type of semantic therapy)

Implications

- Evidence that direct 1:1 and 1:2 therapy works and should continue to be provided within therapy packages
- Evidence that therapy for adolescents with LI can be effective
- Evidence that other modes of therapy may not produce optimum results for some areas of difficulty e.g. WFD

Future Work

Short Term

Further paired therapy

Different age groups (Meath Primary School)

Long Term (Wendy Best, UCL)

Compare phonological vs. semantic therapy

WF in Discourse

“Pure” WFDs with no other language difficulties

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