The effectiveness of the COCP intervention programme for youngsters with severe intellectual disabilities

Margriet Heim
Communicative Development of nonspeaking individuals and their Communication Partners
Overview

➔ COCP intervention programme
  ▪ design effect study
  ▪ measures & analysis
  ▪ preliminary results Britt
  ▪ more preliminary results
  ▪ conclusion
Project team

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Miriam Roemer
Frank Velthausz
Marjan Veen
Main goal COCP

Learn to communicate in daily social interaction situations

- effectively
- efficiently
- social acceptable
What is needed?

**Access to communication**
- communication partners recognise communicative signals
- availability of means to communicate (modes, communication aids, vocabulary)

**Opportunity to communicate**
- communication partners create opportunities for the client to communicate
Organisational framework

communication group

- parents
- grandparents
- neighbours/friends
- family
- babysitter

- caretakers
- teachers
- assistants
- therapists
Organisational framework

Communication group

- Parents
- Grandparents
- Neighbours/friends
- Family
- Babysitter

- Caretakers
- Teachers
- Assistants
- Therapists

Intervention team:
- Special educationalist
- Speech therapist
- Client caretaker
COCP intervention cycle

Assessment
- Step 1 Background information
- Step 2 Client assessment
- Step 3 Observation interaction

Implementation
- Step 6 Intervention

Goal&plan
- Step 4 Goal setting
- Step 5 Intervention plan

Evaluation
- Step 7 Evaluation
Basic procedures COCP

- group meetings
- individual intervention plans
- coaching communication partners based on video recordings
Overview

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General question

Does the COCP programme lead to an improvement of the communicative interaction between nonspeaking persons with intellectual impairments and significant others within their social network?
Participants - clients

11 clients with (very) severe multiple disabilities

- 10 girls, 1 boy
- aged 4 – 23 years
- nonspeaking
- mental age 0;6 – 3
Participants - partners

2 communication partners of each client:

- parent or personal caretaker in home environment
- personal caretaker in daycentre
Research design

- longitudinal
- within-subject: each subject is his/her own referent
- multiple measurements in each phase (baseline, intervention, post intervention)
## Data collection

<table>
<thead>
<tr>
<th>video’s</th>
<th>with parent</th>
<th>with caretaker</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>baseline</strong></td>
<td>3 within 2 weeks</td>
<td>3 within 2 weeks</td>
</tr>
<tr>
<td><strong>intervention</strong></td>
<td>4 every 6 weeks</td>
<td>4 every 6 weeks</td>
</tr>
<tr>
<td><strong>post intervention</strong></td>
<td>3 within 2 weeks</td>
<td>3 within 2 weeks</td>
</tr>
</tbody>
</table>
### Time schedule intervention

<table>
<thead>
<tr>
<th>07</th>
<th>08</th>
<th>09</th>
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</thead>
<tbody>
<tr>
<td>nov</td>
<td>dec</td>
<td>jan</td>
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<tr>
<td>feb</td>
<td>mar</td>
<td>apr</td>
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<tr>
<td>may</td>
<td>jun</td>
<td>jul</td>
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<tr>
<td>aug</td>
<td>sep</td>
<td>oct</td>
</tr>
<tr>
<td>nov</td>
<td>dec</td>
<td>jan</td>
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</tbody>
</table>

#### Assessment

- Goal & Plan

#### Intervention
### Time schedule sampling

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseline</td>
<td></td>
<td></td>
<td>post intervention</td>
</tr>
<tr>
<td>B123</td>
<td>I 1</td>
<td>I 2</td>
<td>I 3</td>
</tr>
</tbody>
</table>

- **assessment**: goal & plan
- **intervention**:
Time schedule instruction

- baseline measurements B1 B2 B3
- general instruction in group meeting
- intervention measurement I 1
- individual feedback based on I 1
- I 2
- individual feedback based on I 2
- I 3 et cetera
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Specific questions

Does the intervention lead to changes?

- partner’s use of facilitating strategies
- turn taking patterns
- patterns of topic introductions
- client’s use of communicative functions (frequency and variation)
Analysis procedures

- fragment of 5 minutes selected from each recording
- each fragment divided into segments of 20 seconds
- 15 segments coded
- mean score for each recording
Variables

each segment coded for:

- partner strategies
- distribution of turns
- distribution of initiations
- communicative functions
Partner strategies

1. structure environment
2. follow child’s lead
3. create shared focus
4. provide opportunities
5. expect communication
6. pace interaction (pause)
7. provide models
8. proper language input
9. prompt
10. reward
Turns & initiations

definitions:

**turn**  intentional behaviour directed towards partner

**initiation**  introduction of new topic or focus of attention
Communicative functions

1. attention to partner
2. expression of feelings
3. indication interrupted activity
4. turn taking
5. acceptance
6. protest / rejection
7. choices
8. greeting / closing
9. request assistance
10. request object/action
11. request attention
12. answering yes/no
13. commenting
14. request information
15. formulating feelings
16. joking & pretending
Coding strategies

per segment judgement of each strategy with 3-point scale:

3 optimal use (+)
2 used, but could be used more often or more facilitative (±)
1 no or not facilitative use (–)
Coding turns & initiations

per segment with 5-point scale:

1. **client dominance**: all turns
2. **client most turns**
3. **equally distributed** (balanced)
4. **partner most turns**
5. **partner dominance**: all turns
Coding functions

per segment:

➡ which functions?
➡ with which mode(s)?
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Preliminary results Britt

3 baseline recordings
3 intervention recordings
of Britt in interaction
with her personal caretaker
during mealtime in institutional home
Britt

- 10 years of age
- severe mental retardation
- autism
- intervention goal:
  request for object / activity
Variables

- partner strategies
  - distribution of turns
  - distribution of initiations
  - communicative functions
Strategies grouped

4 categories
- pausing
- responsiveness
- eliciting
- language input
Strategies caretaker Britt

- pausing
- responsiveness
- eliciting
- input

Baseline vs Intervention

B1, B2, B3, I1, I2, I3

Graph showing changes in levels with +3, ±2, and -1 scales.
Variables

✓ partner strategies

➔ distribution of turns

➔ distribution of initiations

▪ communicative functions
Discourse patterns Britt

- Client all 1
- Balanced 3
- Partner all 5

Initializations vs. Turns

<table>
<thead>
<tr>
<th>Client</th>
<th>Balanced</th>
<th>Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseline</td>
<td>intervention</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>B2</td>
<td>B3</td>
</tr>
</tbody>
</table>

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Variables

- partner strategies
- distribution of turns
- distribution of initiations
- communicative functions:
  - target function; frequency & variation of all functions
Functions Britt

- Frequency
- Variation
- Request object/activity

Baseline intervention

B1  B2  B3  I1  I2  I3
Summary results Britt

- major changes in caretaker strategies after instruction and feedback
- almost balanced patterns of turn taking remain stable
- patterns of initiations more balanced
Summary results Britt

- increase in frequency and variation of functions
- increase in use of target function (request for object / activity)
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## Clients

<table>
<thead>
<tr>
<th></th>
<th>age</th>
<th>diagnosis</th>
<th>intervention goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britt</td>
<td>10</td>
<td>MR, autism</td>
<td>request object/activity</td>
</tr>
<tr>
<td>Imke</td>
<td>4</td>
<td>MR, autism</td>
<td>request object/activity</td>
</tr>
<tr>
<td>Joris</td>
<td>19</td>
<td>MR, West syndrome, CP</td>
<td>communication of choices</td>
</tr>
<tr>
<td>Kirsty</td>
<td>9</td>
<td>MR, chromosomal anomaly, agenesis corpus callosum</td>
<td>request object/activity</td>
</tr>
</tbody>
</table>

MR = mental retardation
Changes in caretakers

- pausing
- responsiveness
- eliciting
- input

Baseline (n=3) vs. Intervention (n=3)

Britt Imke Joris Kirsty Britt Imke Joris Kirsty
Changes turn patterns

- **client all:**
  - Britt
  - Imke
  - Joris
  - Kirsty

- **partner all:**
  - Britt
  - Imke
  - Joris
  - Kirsty

- **balanced:**
  - Britt
  - Imke
  - Joris
  - Kirsty

- **baseline**
- **intervention**
Changes initiation patterns

<table>
<thead>
<tr>
<th>Balancing Patterns</th>
<th>baseline</th>
<th>intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>client all 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>balanced 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>partner all 5</td>
<td></td>
<td></td>
</tr>
</tbody>
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Mean number of functions

- Britt: Baseline 10, Intervention 20
- Imke: Baseline 15, Intervention 35
- Joris: Baseline 10, Intervention 20
- Kirsty: Baseline 15, Intervention 30
Mean requests for objects

<table>
<thead>
<tr>
<th></th>
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<th>Imke</th>
<th>Joris</th>
<th>Kirsty</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseline</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>intervention</td>
<td>3</td>
<td>18</td>
<td>6</td>
<td>12</td>
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</table>

- red: baseline
- yellow: intervention
# Summary results

<table>
<thead>
<tr>
<th></th>
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<th>Joris</th>
<th>Kirsty</th>
</tr>
</thead>
<tbody>
<tr>
<td>improvement partner strategies</td>
<td></td>
<td></td>
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<tr>
<td>more balance in turns</td>
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<td></td>
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<tr>
<td>more balance in initiations</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>increased frequency functions</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>increased variation functions</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>increased use target function</td>
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Conclusion

COCP intervention leads to

- more facilitative interaction behaviours of caretakers
- more balanced interaction patterns
- improved communication of clients
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