The four principles and essential procedures of PACE

<table>
<thead>
<tr>
<th>Principle</th>
<th>Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The clinician’s feedback as a receiver is based on the patient’s success in conveying the message.</td>
<td>The new information condition should make this inevitable for both participants. Our feedback should let the client know if he or she got the idea across. If we already know the message, we should respond as if we did not know.</td>
</tr>
</tbody>
</table>

PACE: Goals and measures

- Frequency of successfully communicated message
- Number of attempts prior to success/% of attempts with x number of attempts or fewer
- Improved efficiency measured by total time required for each attempt (averaged); can be reported as % faster
- Frequency/% of attempts using a particular strategy
PACE rating scale

5 – message conveyed at first attempt
4 – message conveyed after general feedback from the clinician
3 – message conveyed after specific feedback from the clinician
2 – message partially conveyed
1 – message not conveyed
0 – no attempt to convey message


Task-specific training

This approach focuses on training responses and strategies in a particular context that is highly relevant to the individual. This should be training in a task that will be encountered relatively frequently. Ideally, the trained task will have elements within it that will also be used in other contexts. For example, training that is focused on giving personal information such as name, address, and phone number to order something also transfers to giving the same information to order a pizza (Hinckley, Patterson & Carr, 2001).
Example: Catalog ordering

<table>
<thead>
<tr>
<th>Clinician</th>
<th>Client Response</th>
<th>Cueing/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thank you for calling. May I help you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What is the number above the name on the back of the catalog?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What is your home phone number starting with the area code?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What is your last name and the spelling, please?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. What is your first name and the spelling?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Catalog-ordering - potential measurements

- **Response latency** – time to respond
- **Accuracy** – communicative effectiveness
  - Scoring system (adapted from CADL-2)
    - 2 = fully communicative response
    - 1 = some errors
    - 0 = completely inaccurate/ineffective
- **Total time/total duration of task**
Menu-ordering

1. Can I get you something to drink?
2. What would you like?
3. What sides would you like with that?
4. Would you like anything for dessert?
5. OK, thank you.

Examples of near-transfer – highly similar contexts

• Catalog-ordering/pizza ordering (personal information)
• Pizza-ordering/menu ordering
• Requesting routines
  – Requesting puzzle access/requesting dining or TV access
• Role-playing examples you can use in your setting?
Errorful vs. errorless learning

• Errorful learning refers to learning that occurs when a client attempts an item, fails, and then receives feedback/correction
  – Example: Typical cueing techniques

• Errorless learning refers to learning that occurs when a client engages in positive practice only; all trials are successful
  – Example: fading cues

Errorless learning

• Assumption of this approach is that errors made during practice interfere with the learning of the correct responses

• Incorrect responses are stored to some degree in implicit memory

• Explicit memory processes usually “edit” or revise these memories, but this cannot occur in amnesic patients that have more impaired explicit memory

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Task-specific training may be errorful when...

• Role-playing is used
  – Feedback, correction, or support is only offered when there is a breakdown
  – Client does not switch strategies or otherwise self-correct until there is a breakdown

• How can we make task-specific training errorless?

Spaced Retrieval

Spaced retrieval training (SRT) (Brush & Camp, 1998; Camp, 2006) incorporates some elements of errorless learning. This kind of practice is most powerful when the targeted task or strategy is being learned in the context in which it will actually be used. It maximizes retained procedural learning (Evans et al, 2002). This training technique was originally used with memory impaired patients, and it has been shown to be effective with patients who have memory impairments due to dementia, stroke, or other brain injury.
Spaced Retrieval

A specific piece of information or a strategy is selected for training. The information or strategy should be highly relevant to the individual (something they actually need to know and respond to in their daily routine). In addition, the likely context in which the information will be needed should be selected.

- Example: Client walks outside facility and needs to be able to tell address in case he goes too far. Clinician targets address (or getting ID out of wallet with address on it) as target. Clinician selects trigger as “Where do you live?”

The first step is for the clinician to provide the cue or question that will serve as the trigger for the client’s response. Ask the client to repeat the correct information immediately.

Clinician begins to increase delay between trials. Initially, the target should be repeated again a few seconds later.

“OK, let’s practice that again. If I say, ‘Where do you live?’, you take out your ID.”

Delay between trials increased.

Two minutes later. “Where do you live?”

If client makes an error or fails to respond, shorten the delay and continue positive practice. Then return to increasing delays.
Supported Conversation for Aphasia™ (SCA)

www.aphasia.ca

Supported conversation for adults with aphasia based on the idea that reduced ability and opportunity to engage in conversation affects the way that adults with aphasia are perceived. The less opportunity there is to engage in genuine conversation the less opportunity there is to reveal competence. (Kagan et al., 1995)

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Supported Conversation for Adults with Aphasia (SCA™): Two principles

**Acknowledge Competence**

Techniques to help PWA feel competent

**Reveal Competence**

Techniques to give and receive accurate information from PWA

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Acknowledging competence

APPENDIX C
MSC Behavioral Guidelines: Summary

A. Acknowledging competence

Natural adult talk appropriate to context
• Feel and flow of natural adult conversation appropriate to context, e.g., social chat vs. interview; respectful approach to verification (verifying that the conversation partner has understood rather than verifying that adult with aphasia knows what they want to say; not oververifying)
• Not patronizing (busineses, tone of voice, rate, enunciation)
• Appropriate emotional tone/use of humor
• Incomprehensible responses handled respectfully
• Sensitive to adult with aphasia’s attempts to engage in conversation
• Encourage when appropriate
• Acknowledge competence when adult with aphasia is frustrated/upset, e.g., “I know you know what you want to say”
• “Listening attitude”
• Taking on communicative burden as appropriate/making adult with aphasia feel comfortable

Sensitivity to partner

B. Revealing competence
(How much support is provided relative to what’s needed?)

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B. Revealing competence

1. Ensures that adult with aphasia understands**
   (e.g., topic, questions)
   - Verbal (e.g., short, simple sentences; redundancy; is there some verbal adaptation?)
   - Nonverbal
     • Gesture Meaningful; slightly exaggerated; used to emphasize or clarify
     • Writing Clear and visible; appropriate key words
     • Resources Used only when necessary (would something simpler suffice?)
     • Drawing Simple and clearly presented
   • Response to communicative cues (e.g., reacting to facial expressions that indicate lack of comprehension)

2. Ensures that adult with aphasia has a means of responding**
   - Verbal (e.g., use of fixed choice and yes/no questions)
   - Nonverbal
     • Gesture Models response mode (e.g., pointing, thumbs up/down)
     • Writing Provides written choices for pointing; clear and visible; appropriate key words
     • Resources Encourages writing (e.g., makes sure that adult with aphasia has paper and pen)
     • Drawing Provides something so that adult with aphasia can point to it, encourages use of resources
     • Response to communicative cues (e.g., giving enough time to respond)

3. Verification**
   (Accuracy of adult with aphasia’s response not automatically assumed)
   - Verbal (e.g., “So let’s see if I’ve got this right...”) - reflecting and expanding
   - Nonverbal
     • Gesture Model desired response for clarification
     • Writing Reflecting, summarizing
     • Resources As appropriate
     • Drawing
     • Response to communicative cues (e.g., appropriate handling of inconsistent yes/no response)

NOTE: Verification often involves checking in another modality
TOOL BOX

- Yes
- No
- Paper
- Marker, Pencil
- Verify
- Do we get it right?
- LAUGH!
- KEEP TRYING!
- RELAX
- Talk
- Give a clue
- Draw
- Write
- Point
- TEA
- COFFEE
- JUICE
- Resources

HELP YOUR PARTNER

WHY?

WHAT?

WHO?

WHERE?

WHEN?

N
E
S
W
IN
OUT

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www.aphasia.ca
**MSC**
Measure of skill in Supported Conversation

Name: 
Date: 
Rated by: 

**Score**

<table>
<thead>
<tr>
<th>A. Acknowledges competence</th>
<th>B. Reveals competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acknowledges competence</td>
<td></td>
</tr>
<tr>
<td>2. Reveals competence</td>
<td></td>
</tr>
<tr>
<td>3. Verifies</td>
<td></td>
</tr>
</tbody>
</table>

Kagan et al, 2004

---

**Acknowledge competence**

<table>
<thead>
<tr>
<th>0</th>
<th>Competence of AP not acknowledged. Patronizing. Could cause harm. Should not be working with our members.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Needs a lot of supervision or needs to volunteer with experienced co-leader.</td>
</tr>
<tr>
<td>2</td>
<td>Competence of AP acknowledged implicitly and explicitly as appropriate. Volunteer is ok. You do not have big concerns. Moderate level of supervision e.g., 1 x per month.</td>
</tr>
<tr>
<td>3</td>
<td>Doesn't need much supervision, e.g., 1 x per term (4 months).</td>
</tr>
<tr>
<td>4</td>
<td>Peer-trainer level. Interationally outstanding. Just needs motivation and ongoing opportunity to learn as opposed to supervision.</td>
</tr>
</tbody>
</table>

**Reveal competence**

<table>
<thead>
<tr>
<th>0</th>
<th>No use of techniques to reveal competence.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Needs a lot of supervision or needs to volunteer with experienced co-leader.</td>
</tr>
<tr>
<td>2</td>
<td>Volunteer is able to get some information. You do not have big concerns re leaving them with this member.</td>
</tr>
<tr>
<td>3</td>
<td>Doesn't need much supervision, e.g., 1 x per term (4 months).</td>
</tr>
<tr>
<td>4</td>
<td>Technically outstanding. May not always succeed but as good as any well-trained professional.</td>
</tr>
</tbody>
</table>

Note: PA = partner with aphasia, CP = conversation partner

MSC © Aphasia Institute 2002

Kagan et al, 2004

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For the person with aphasia...

A. Interaction

Verbal/vocal
- Does PA share responsibility for maintaining the flow and feel of conversation (including appropriate affect)?

Nonverbal
- Does PA initiate/maintain interaction with CP or make use of supports offered by CP to initiate/maintain interaction?
- Does PA indicate communicative intent?
- Is PA pragmatically appropriate?
- Does PA ever acknowledge the frustration of the CP or acknowledge their competence/skill?
- Behaviors might include: appropriate eye contact, use of gesture, body posture and facial expression, use of writing or drawing in any form, use of resource material, use of verbalization/vocalization in any form.

For the person with aphasia...

B. Transaction

Verbal/vocal
- Does PA maintain exchange of information, opinions, and feelings with CP?
- Does PA ever initiate transaction?
  - introducing or referring back to a previous topic?
  - spontaneously using a compensatory technique?

Nonverbal
- Does content of transaction appear to be accurate? (depending on context and purpose of rating, rater would have more/less access to means of verification of information)
- Does PA use support offered by CP for the purpose of transaction? This might include: using a gesture modeled by CP; pointing to key-words or pictured resources, collaborating with CP around a drawing.
# Measure of Participation in Conversation (MPC)

<table>
<thead>
<tr>
<th>Name:</th>
<th>MSC (Skill of Conversation Partner)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Acknowledge Competence</td>
</tr>
<tr>
<td>Rated by:</td>
<td></td>
</tr>
</tbody>
</table>

## A. Interaction
1. Verbal/Vocal
2. Nonverbal
   - Gesture
   - Writing
   - Drawing
   - Resources

## B. Transaction
1. Verbal/Vocal
2. Nonverbal
   - Gesture
   - Writing
   - Drawing
   - Resources

---

## Interaction

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No participation at all. No attempt to engage CP or respond to interactional attempts. Would be very concerned for the volunteer. Would definitely not feel comfortable to leave the volunteer (CP) alone with this member (AP) unless volunteer is highly skilled.</td>
</tr>
<tr>
<td>1</td>
<td>AP beginning to take some responsibility for interaction. Still concerned about the volunteer, and would feel obliged to observe frequently and provide support, unless volunteer is highly skilled.</td>
</tr>
<tr>
<td>2</td>
<td>Clear attempts to be part of the conversation. Feel ok to leave this member with the volunteer, but would need to check in.</td>
</tr>
<tr>
<td>3</td>
<td>AP taking increased responsibility for interaction. Very little concern for volunteer, but would still check in from time to time, e.g., 1 x per term (4 months).</td>
</tr>
<tr>
<td>4</td>
<td>Full and appropriate participation. Takes responsibility for conversational interaction. Full confidence in the member – no concerns at all for the volunteer.</td>
</tr>
</tbody>
</table>

## Transaction

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No evidence of being able to understand or get a message across. Would be very concerned for the volunteer. Would definitely not feel comfortable to leave the volunteer alone with this member unless volunteer is highly skilled.</td>
</tr>
<tr>
<td>1</td>
<td>AP beginning to show evidence of being able to understand and convey content. Still concerned about the volunteer, and would feel obliged to observe frequently and provide support, unless volunteer is highly skilled.</td>
</tr>
<tr>
<td>2</td>
<td>Evidence of ability to understand and get a message across in some way at least 50% of the time. Feel ok to leave this member with the volunteer, but would need to check in.</td>
</tr>
<tr>
<td>3</td>
<td>Able to understand and convey content most of the time. Very little concern for the volunteer, but would still check in from time to time, e.g., 1 x per term (4 months).</td>
</tr>
<tr>
<td>4</td>
<td>Full confidence in the member – no concerns at all for the volunteer.</td>
</tr>
</tbody>
</table>
Communication partner training with other therapists/nurses as targets

- Documentation issues
  - How client improves communication ability when in the presence of a good/poor partner

Conversational Coaching

Conversational coaching is a method for training the individual with aphasia to use effective communication strategies — such as gesture, drawing, or writing — similar to PACE. However, in conversational coaching the training also includes the primary communication partner, such as a spouse or other family member (Holland, Hopper & Rewega, 2002). The clinician serves in the role of coach to both parties.

Effective communication strategies for both the person with aphasia and the primary communication partner are targeted. The clinician acts as a communication strategy coach for both partners (with and without aphasia). The primary communication partner plays an equal role in improving conversation.

1 = Evidence is strong for communication partner training
Conversational Coaching

• **Candidacy**: Effective for a variety of types and severities of aphasia. Best outcome will be achieved when there is a primary communication partner who is willing and able to learn and maintain communication strategies.

• **Goals & Expected Outcomes**: The desired outcome is the implementation of effective communication strategies in conversation by both the person with aphasia and the primary communication partner.

---

Conversational Coaching

Step 1. Determine a hierarchical list of strategies for each partner. This should be based on the needs of the person with aphasia and what will work within that dyad.

Examples of strategies could include: drawing or writing to aid expression; drawing or writing to aid comprehension; longer pauses; slower speech rate; learning a gesture to request more time

Step 2. The clinician presents a short narrative or story to one member of the dyad while the other is out of the room. This could be a short video clip (e.g., *America’s Funniest Videos*)
Conversational Coaching

Step 3. The other partner comes into the room. The first partner explains the clip or story to the second partner using the targeted strategies.

The clinician should direct each member to their strategies as needed, or coach one member or the other on more effective ways to achieve success while they are engaged in this transaction. Positive feedback should also be provided.

Step 4. This can be repeated as needed to master strategy use and practice in a variety of contexts.

Discussion

- Do the cognitive requirements for these treatments differ? (Task-specific training, spaced retrieval, PACE, CPT)?
- Discuss the language or cognitive characteristics of a client that would lead you to select either task-specific training, MIT, or SFA.
Aphasia treatments that meet these criteria
(Hinckley, 2011; Salter et al, 2012; Allen et al, 2012)

**Reading/writing focus**
- Multiple Oral Reading/ORLA
- Anagram Copy and Recall Treatment

**Multi-modality**
- PACE
- Task-specific training
- Communication Partner Training
- Spaced retrieval

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Anagram Copy and Recall Treatment (ACRT)

1. "Write the word for this." or "Can you write coffee?"
   - Correct
   - Go to next item.

2. Present letters
   "Make this spell coffee."
   - Correct
   - Copy 3 times

3. Present letters plus 2 foil letters.
   "Make this spell coffee."
   - Correct
   - Copy 3 times

4. Cover all instances of written word.
   "Write the word coffee."
   - Correct
   - Elicit response 3x
   - Correct
   - Go to next item.

Clinician arranges letters correctly
Copy 3 times
If repeated failure return to step 2

Patient copy from previous model
If repeated failure return to step 2
Multiple Oral Re-reading

- Reading aloud a passage 3 times during training session – with feedback
- Reading same passage aloud 5-6 more times at home each day
- Daily practice during the week on the same passage
- Passage is changed at end of week
Oral Reading for Language in Aphasia (ORLA)

- ORLA has four levels of treatment based on length and reading level:
  - **Level 1.** Simple 3-5 word sentences at a first grade reading level;
  - **Level 2.** 8-12 words that may be single sentences or two short sentences, at a third grade reading level;
  - **Level 3.** 15-30 words, divided into 2-3 sentences, at a sixth grade reading level;
  - **Level 4.** 50-100 words comprising a 4-6 sentence simple paragraph, also at a sixth grade reading level

Both ORLA and MOR target semantic and phonological routes for reading

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Which of these require MORE cognitive abilities for success?

**Oral expression focus**
- Phonological/semantic cueing
- Task-specific training (phonological/semantic cueing)
- PACE
- Verb Network Strengthening Treatment
- Response Elaboration Training
- Constraint-induced aphasia tx
- Melodic Intonation Training
- Semantic Feature Analysis
- Script training

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Which of these require MORE cognitive abilities for success?

**Reading/writing focus**
- Multiple Oral Re-reading/ORLA
- Anagram Copy and Recall Treatment

**Multi-modality**
- PACE
- Task-specific training
- Communication Partner Training
- Spaced retrieval

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How to select among the treatments?

1. Functional/personal goals
   - LIV cards, Key Life Activities, ICF Checklist, Goal Attainment Scaling

2. Cognitive abilities/specific language processes
   - Break down tasks and goals that are personally relevant using Cognitive Task Analysis

3. Select from among evidence-supported treatments, matching cognitive and language characteristics to treatments that target needed skills for personally relevant goals
   - Ordering in a restaurant
   - Shopping for clothes
   - Filling out a written form
Thank you!

Contact me with questions or comments

Dr.JJHinckley@gmail.com

_Bloom Where Planted_ by David Dow, stroke survivor

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