

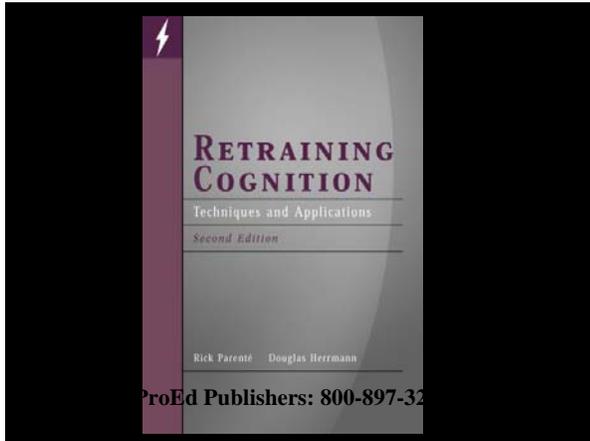
The Things I've Learned So Far

Retraining Cognition: Techniques and Applications

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The Research Agenda



Iconic Imagery

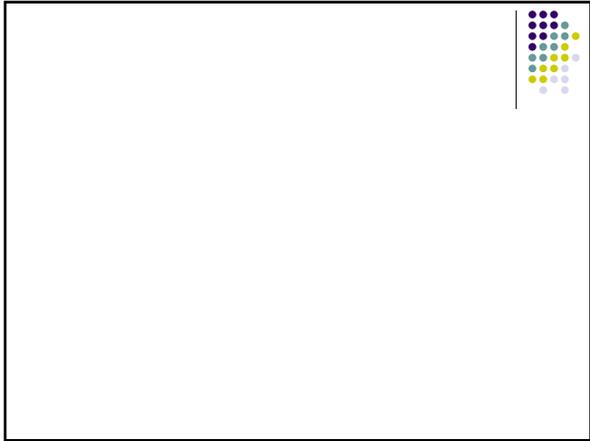


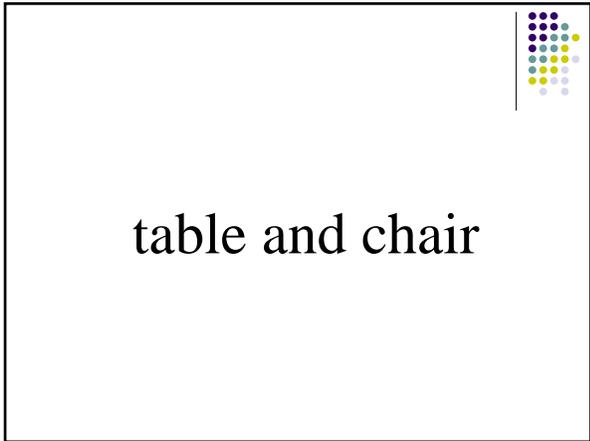
- **Idea:** Increase Iconic span of apprehension
- **Training:** Short duration flashes
- **Result:** Improved performance – evidence of carryover to reading
- **Applications:** Reading, driving, perceptions of warning signs

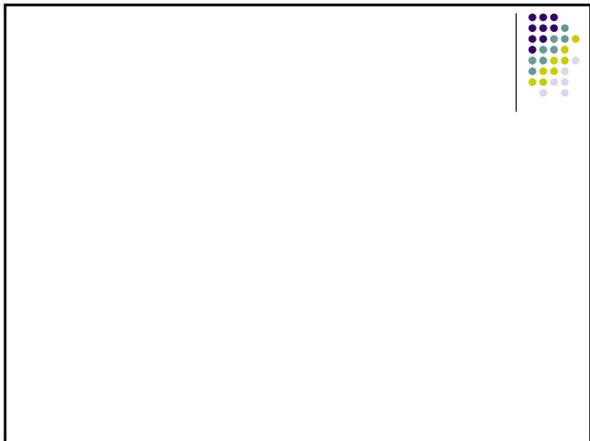
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planet











what we all want





Where do we go from here?

References

- Parente, R., Anderson-Parente, J.A., & Shaw, B. (1989). Retraining the mind's eye. *Journal of Head Trauma Rehabilitation*, 4 (2), 53-62
- McClur, J.T., Browning, R.T., Vantrease, C.M., & Bittle, S.T. (1994). The iconic memory skills of brain injury survivors and non-brain injury controls after visual scanning training. *NeuroRehabilitation*, 4, 151-156.
- McClur, J.T., Browning, R.T., Vantrease, C.M., & Bittle, S.T., (1997), Iconic memory training with stroke patients. *Journal of Cognitive Rehabilitation*, 14, 21-27.
- Hamid, M., Garner, R., & Parente, R. (1996). Improving reading rate and reading comprehension with iconic memory training. *Cognitive Technology*, 1(1),19-24.



Rehearsal Training

- **Idea:** Demonstrate effect of rehearsal and determine how many rehearsals are necessary
- **Training:** Card games for maintenance rehearsal
- **Result:** Improves memory so long as the person consciously rehearses.



References

- Parente, R., Twum, M., & Zoltan, B. (1994). Transfer and generalization of cognitive skill after traumatic brain injury, *NeuroRehabilitation*, 4, 25-35



Mnemonics and Imagery



- **Idea:** Facilitate cuing and memory retrieval
- **Training:** Provide or develop memory cues
- **Result:** Unique mnemonics that solve a specific problem work best
- **Applications:** Work, ADLs, Academics, Training.

References



- Parente, R. & Anderson-Parente, 1991. *Retraining Memory: Techniques and applications*, Houston TX, CSY Publishers
- Twum, M. (1994). Maximizing generalization of cognitions and memories after traumatic brain injury, *NeuroRehabilitation*, 4, 157-167
- Parente, R., Kolakowsky-Hayner, S., Krug, K., & Wilk, C. (1999) Retraining working memory after traumatic brain injury, *NeuroRehabilitation*, 13, 157-163

The Memory TRRAP



- T**ranslate into your own words
- R**ehearse immediately
- R**elate the new to the old
- A** picture is worth a thousand words
- P**ractice output

Remembering names



- **N**otice the person – maintain eye contact
- **A**sk the person to repeat his or her name
- **M**ention the name in conversation
- **E**xaggerate some special feature

Examples of Working Memory Exercises



- Making change mentally
- Solving anagrams
- Estimating costs and benefits
- Playing logical memory rehearsal game
- Scenario generation game

Cognitive Mnemonics



- **SOLVE**
 - S pecify the Problem
 - O ptions
 - L isten to others advice
 - V ary the solution
 - E valuate the result
- **LISTEN**
 - L ook at the person
 - I nterest in the conversation
 - S peak less than half the time
 - T ry not to interrupt or change topic
 - E valuate what is said
 - N otice body language

Decision Making



- D**o not procrastinate – Decide to begin
- E**valuate your options – choose those that are WIN-WIN
- C**reate new options when others won't do
- I**nvestigate existing policies – limit what you choose
- D**iscuss the decision with others – listen to their advice
- E**valuate your feelings – before acting think twice

Incidental Learning



- **Idea:** Learning without awareness
- **Training:** Posters, Computer Reminding Software, Screen Savers
- **Result:** Learning occurs within an hour
- **Applications:** Screen savers for teaching memory and social skills, posters around the home, Auditory reminders for cuing medications.

How To Listen



- L**ook at the person
- I**nterest in the conversation
- S**peak less than half the time
- T**ry not to interrupt or change topic
- E**valuate - question
- N**otice body language

How To Control Anger



Anticipate the signs of anger

Never act in anger

Get away from what anger you

Evaluate what made you angry

Review how you coped

How To Remember Names and Faces

Notice the person

Ask them to repeat their name

Mention the name in conversation

Exaggerate some special feature

Incentive and Memory



- **Idea:** Incentives dramatically improve cognitive performance
- **Training:** Provide money or personally relevant reinforcers to stimulate performance.
- **Result:** Monetary incentives facilitate storage and retrieval of information in memory.

Using Incentives

- Discover client's current needs and interests
- Manipulated social relationships
- Direct payment
- Addictions as an incentive
- Create goals and chart progress
- Make incentives believable and feasible to achieve.
- Contingency management.



Social Skills Training

- **Idea:** Practice appropriate social behavior
- **Training:** Voice inflections, facial expression, body language, time management, social memory
- **Result:** Improved social acceptance
- **Applications:** Family, work, training.



References

- Parente, R., Anderson-Parente, J.K., & Stapleton, M. (2001). The use of rhymes and mnemonics for teaching cognitive skills to persons with acquired brain injury, *Brain Injury Source*, 5(1), 16-19.
- Parente, R., & Stapleton, M. (1999). Development of a cognitive strategies group for vocational training after traumatic brain injury. *NeuroRehabilitation*, 13, 12-30.



Making yourself clear
Listening
Eye contact
Controlling Anger
Controlling Impulses
Solving problems
Making Decisions



Retraining Listening Skills

- **L**ook at the person
- **I**nterest in the conversation
- **S**peak less than half the time
- **T**ry not to interrupt or change topic
- **E**valuate what is said
- **N**otice body language



Listening Skills

- Listening is the social grace
- Of hearing the words and watching the face
- Good listeners speak less than half the time
- They evaluate the reason and the rhyme
- So open your eyes and close your mouth
- Study the face east-west-north-and south
- Listening is both a skill and a choice
- Choose not to hear the sound of your own voice.



Eye Contact



- Maintain eye contact when you speak
- Eye contact tells others that you are not meek
- Notice changes in posture and face
- These signal disgust, awkwardness, or even disgrace
- Study the details of the body and face
- Remember, eye contact is a big part of social grace.

Controlling Anger



- **A**nticipate those things that trigger your rage
- **N**ever act in anger – act your age
- **G**o through the **CALM** sequence – return assuaged
- **E**valuate the situation in retrospect
- **R**eview how you coped - reflect

CALM sequence



- **C**all someone you know
- **A**llow your emotions to flow
- **L**eave the situation – avoid the fray
- **M**ove about – get out of anger's way

Controlling Impulses



Does what I want to do or say create more problems than it solves?

This question will make you think, of all that is involved.

It quiets the impulse, soothes the urge, it makes you think and wait.

Now ask the right question, while you hesitate.

Does what I want to do or say solve more problems than it creates?

If it does then do it – but if it does not then don't

If you follow this simple rule, then the things you want will happen -

and the things you don't want – won't

Psychosocial Memory Skills Training



- Remembering to remember others
- Prosthetic reminders of important dates.
- Sending cards for special events
- Remembering likes and dislikes
- Remembering what not to do or say

Prosthetic Devices



- **Idea:** Provide a device that obviates the memory or cognitive problem
- **Training:** Set up the device for the client and teach him or her to use it.
- **Result:** Immediate resolution of the problem.
- **Applications:** Memory and routine cognitive processing.

Use Prosthetic Devices



- Digital recorders
- Personal Organizers (e.g, Palm Pilot)
- Timex/Microsoft watch
- Sticky note pads
- Personal signs
- Appointment calendars
- Automatic bill payment
- Device controllers for the home
- Cognitive Art

Cognitive Art



- Make therapy conspicuous
- Mug designs
- Screen savers
- T-shirts
- Posters
- Artistic creations
- Poetry therapy

Neurotraining



- **Idea:** Train concentration via biofeedback
- **Training:** Biofeedback or EEG devices
- **Result:** Task teaches client what it feels like to concentrate
- **Application:** ADD training, memory training, sustained vigilance.

What Is Neurotherapy

- EEG and biofeedback monitoring
- Client learns to recognize specific EEG patterns
- EEG or biofeedback correlated with performance



<http://www.wilddivine.com/>

The Journey to Wild Divine is a unique program for mind & body that uses biofeedback hardware with your computer to create an extraordinary experience of wellness.

Learn new breathing and meditation techniques using biofeedback to create a renewed sense of balance. The perfect addition to your wellness program for a stress-free and a healthy life.

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Train your brain to pay attention

His teacher said, "Brady cannot pay attention in class and he's hyperactive."

Janice Brown's son Brady always seemed to be on the go. Even as a baby, he seldom slept for more than five hours a day, and his rambunctiousness only grew as he got older. Soon, Janice felt as if she were spending more...

What she found, was Play Attention. Play Attention uses special games that don't require a joystick to play, instead working on brainpower. When a person concentrates, certain...



Applications



- Seizure control
- ADHD
- Substance abuse
- Anxiety disorders
- Mood disorders
- Memory training

Efficacy



- Generally positive findings
- Generally efficacious for seizure control
- Few class 1 studies
- Few standardized measures or paradigms

Issues



- Still in experimental stages
- Efficacy similar to CRT – Generalization?
- Insurance reimbursement issues
- Training for therapists
- Equipment availability

Evaluation



- Clients can learn to control EEG and Physiology
- Cognition correlated with EEG
- Equipment relatively inexpensive
- Efficacy not yet established
- No standard treatment models
- Equipment not generally available

Summary



What Works and What Doesn't

What Works



- ◆ Gradual step-by-step therapy
- ◆ Eclectic treatment
- ◆ Prosthetic devices
- ◆ Academic remediation
- ◆ Functional skills training

What Works - continued



- ◆ Individualized mnemonics
- ◆ Changing life-long habits
- ◆ Creating incentives and personal relevance of treatment
- ◆ Using clients to council clients

What Works - continued



- ◆ Rehearsal training
- ◆ Group therapy
- ◆ Social skills integration training
- ◆ Nonverbal perception
- ◆ Concept communication
- ◆ Psychosocial memory skills

What Does not Work



- ◆ Doing nothing
- ◆ Short-term treatment
- ◆ Most stimulation therapies
- ◆ Most insight oriented psychotherapies
- ◆ Forcing clients to do things your way

The Art of Cognitive Rehabilitation



- ◆ Creating appropriate incentives and personal relevance
- ◆ Translating what the client should do into what they want to do
- ◆ Client centered treatment
- ◆ Creativity – flexibility-improvisation
