



Training Caregivers of Elders with Dementia Who Exhibit Challenging Behaviors to Take a Functional Approach

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Relevant Statistics

- ~4.5 million individuals in U.S. in 2000
 - Three times this in 2050
- Annual Cost: \$189 Billion in 2007
- Annual cost per individual:
 - \$18,400 for mild/early AD
 - \$36,000 and up for advanced

Examples of Successful Application

- ❑ Reduction of incontinence (Engel et al., 1990; Burgio, 1986)
- ❑ Reduction of seizure-like behaviors (Burgio et al., 1985)
- ❑ Reduction of wandering (Heard & Watson, 1999)
- ❑ Reduction of disruptive vocalizations (Buchanan & Fisher, 2002; Dwyer-Moore & Dixon, 2007)
- ❑ Reduction of aggression (Baker et al., 2006)
- ❑ Increasing rational speech (Beaton et al., 2006)

Preference and Relative Effectiveness for Behavioral Methods

□ Primary treatment:

- Neuroleptic and antipsychotic medications
- Modest efficacy and significant health risks (Bird & Cook, 2008, Sink, Holden & Yaffe, 2005, Schneider, Pollock, & Lyness, 1990)

□ DRI/Extinction and Time-Out:

- Preferred by physicians/family

Functional Analysis

- Seminal Study: Iwata, Dorsey, Slifer, Bauman & Richman (1982/1994)
 - Broadly replicated
- FA-based interventions may have higher probability of success than those that do not specifically/causally address behavior function (Iwata, Kahng, Wallace & Lindberg, 2000).

Current Research

- ❑ Buchanan & Fisher (2002). Functional assessment and non-contingent reinforcement in the treatment of disruptive vocalization in elderly dementia patients. *Journal of Applied Behavior Analysis*, 35(1), 99-103.
- ❑ Beaton, Peeler, & Harvey (2006). A functional analysis and treatment of the irrational and rational statements of an elderly woman with Alzheimer's disease. *Behavioral Interventions*, 21, 1-12.
- ❑ Dwyer-Moore & Dixon (2007). Functional analysis and treatment of problem behavior of elderly adults in long-term care. *Journal of Applied Behavior Analysis*. 40(4), 267-283.
- ❑ Baker, Hanley, & Mathews (2006). Staff-administered functional analysis and treatment of aggression by an elder with dementia. *Journal of Applied Behavior Analysis*, 39(4), 469-474.

Purpose

- ❑ Train non-professional caregivers at home
 - Understand basic principles of behavior analysis
 - Conduct FAs
 - Carry out function-based intervention plans
- ❑ Investigate prolongation of expensive residential care placement.

Participants

□ Hilary and Harry:

- Both 75 years old
- Hilary, diagnosed with moderate-severe Alzheimer's disease, and her husband/care-provider.

□ Al and Jane:

- Al, an 88-year-old man diagnosed with severe Alzheimer's disease, and his 75-year-old wife/care-provider.

□ Behaviors:

- Hilary: Resistance to steps in nighttime routine
- Al: Perseverative requests to go on outings

Experimental Design and IOA

- ❑ Non-concurrent multiple-baseline design across participants
- ❑ IOA: 52% of sessions across all participants
 - Harry: M=94%, range 83-100%
 - Jane: M=89%, range 37-100%

Methodology

Baseline

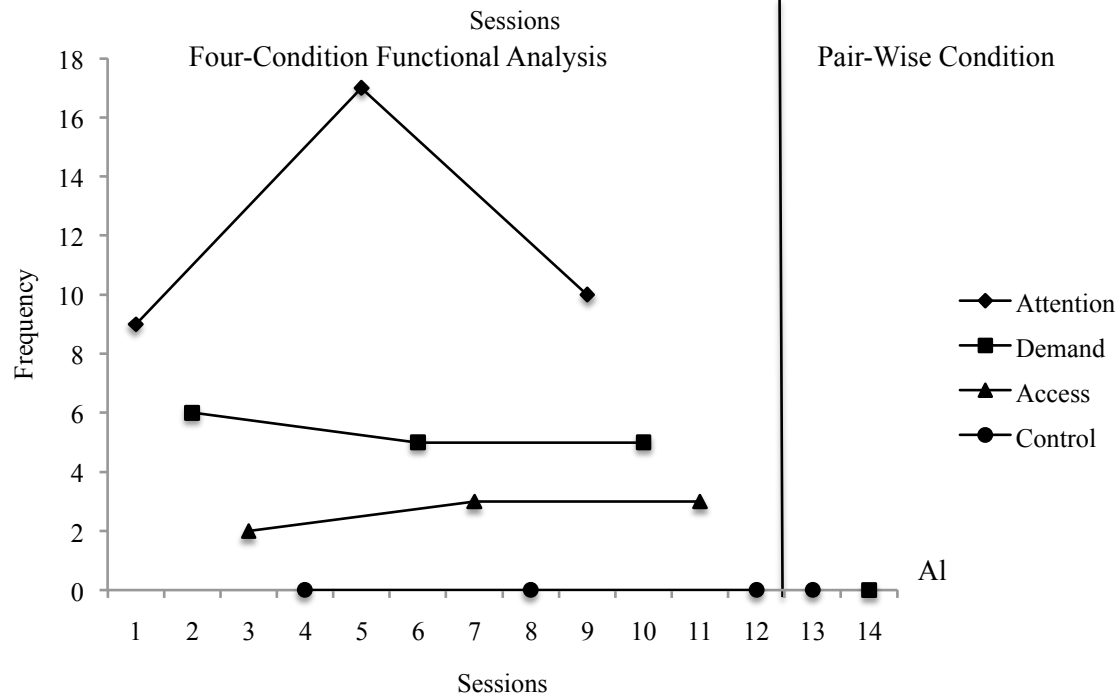
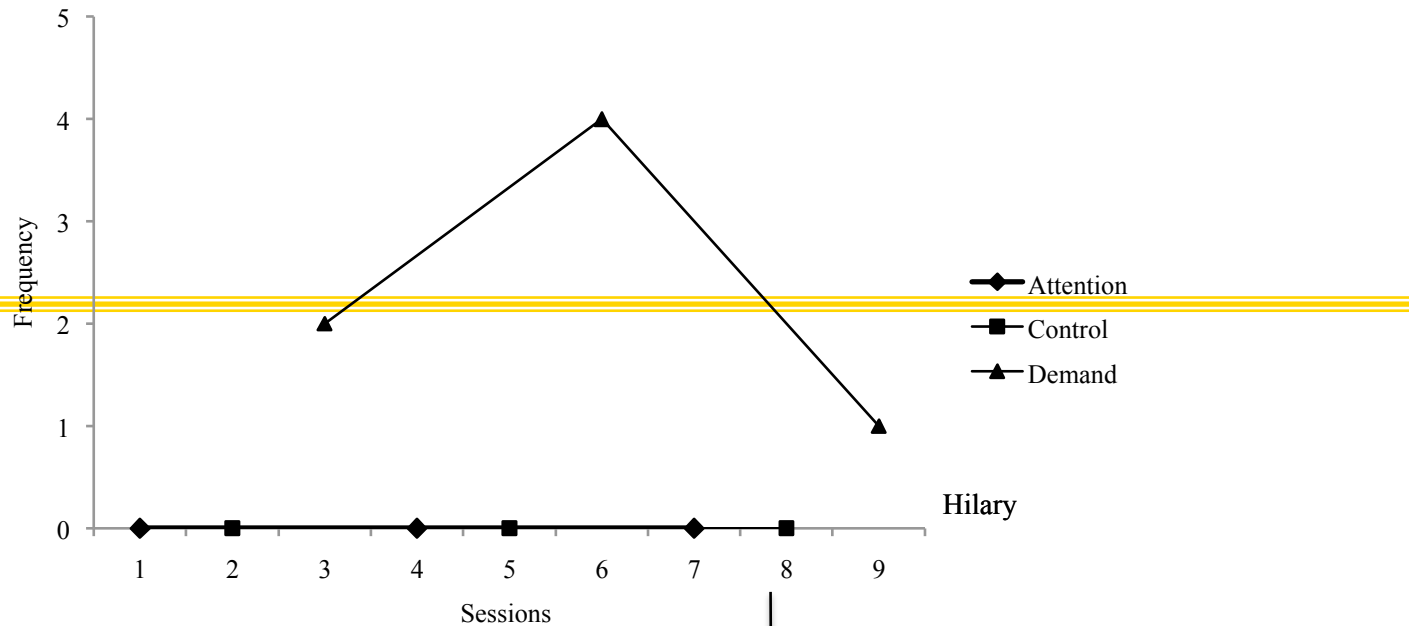
- ❑ Typical Routine

Training

- ❑ Operant Principles, Data Collection/Videos
- ❑ Pre/Post Quizzes
- ❑ Intervention Protocols

FA

- ❑ Hilary: 5 min
- ❑ Al: 15 min with extended pair-wise condition



Methodology

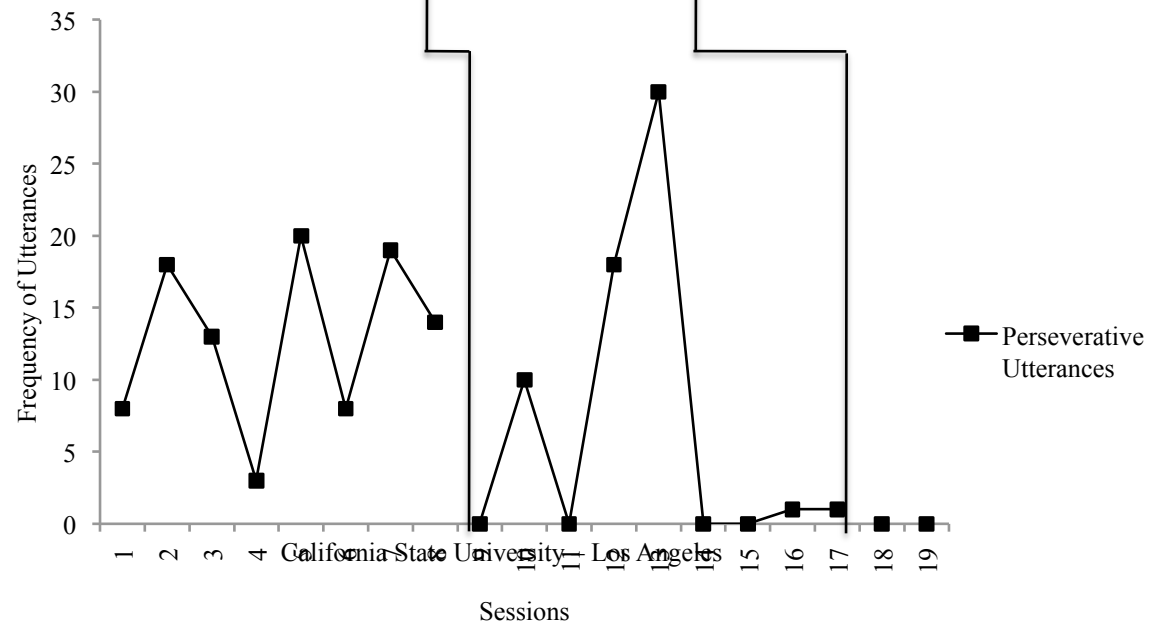
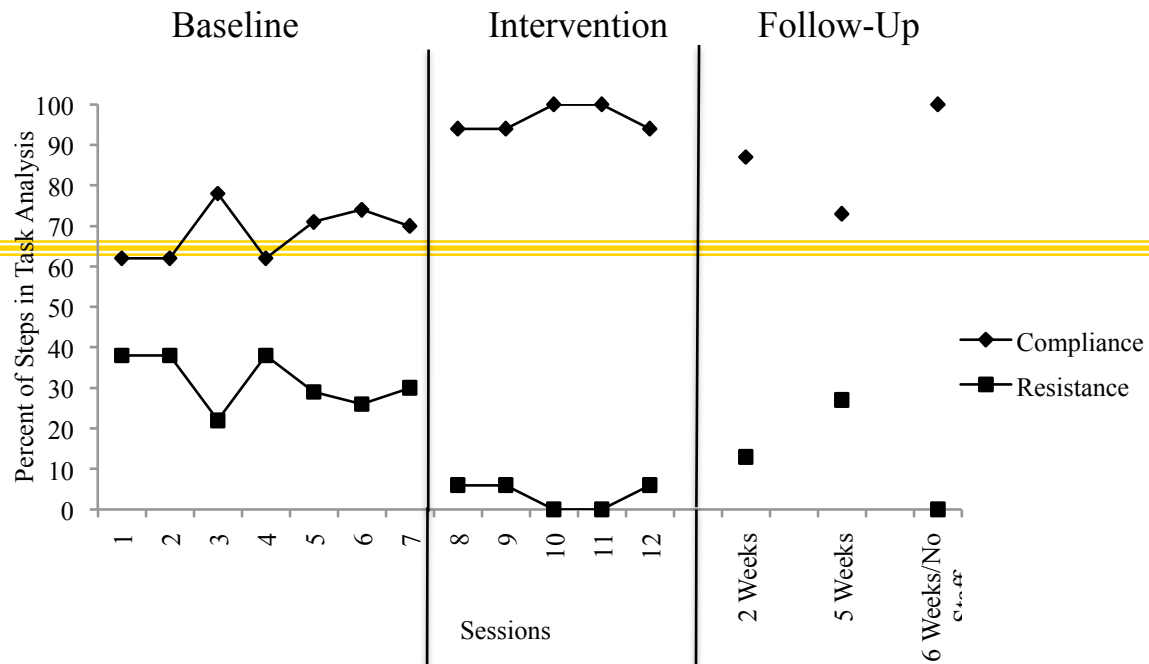
❑ Intervention:

- Hilary and Harry: NCR-Attention, DRA, EXT-Escape
- Al and Jane: NCR-Access, VM-DRO-15, EXT-Attention

❑ Follow-Up

- Hilary and Harry: 2 and 5 weeks
- Al and Jane: 2 and 4 weeks

❑ Social Validity-Likert Scale



Results

Behavior Intervention

□ Hilary

- Mean decrease in percentage of steps with resistance behavior from 30% to 6% of steps
- Total overall decrease of 88%

□ Al

- Mean decrease in perseverative requests from 13 to .5 per hour
- Total overall decrease of 96%

Results

Functional Analysis Integrity

- ❑ 87% of Sessions:
 - Harry: M=98%, range 94-100% adherence
 - Jane: M=54%, range 37-71% adherence
 - ❑ M Prompted=34%
 - ❑ Mean steps conducted accurately=88%

Intervention Integrity

- Harry: M=98%, range 94-100%
- Jane: M=83%, range 59-96%

Results

Social Validity

- Harry
 - Stress levels associated with routine reduced from highest to lowest level
 - Satisfaction and confidence in interaction with Hilary from lowest to highest levels
- Jane
 - Jane's results indicate a reduction from high to low stress, and an increase in confidence and satisfaction from low to neutral
- Both
 - No change in likelihood of residential care placement, very satisfied/comfortable with intervention and training.

Discussion

- ❑ Training of non-behavioral caregivers successful in producing a differentiated functional analyses and successful function-based interventions
 - High treatment integrity and IOA
- ❑ Replication of functional analysis with dementia caregivers
- ❑ Expansion by training non-professional family caregivers, and in home settings
 - Treatment successful!

Possible Limitations

- ❑ Caregiver profession
- ❑ Introduction of medication
- ❑ Resistance to positive-attention points of intervention
 - Very Common
 - Threatens treatment integrity long-term
- ❑ Health complications

Future Research

- ❑ ABA training nearer to initial diagnosis.
 - Potential for increased prolongation of residential placement.
- ❑ Multiple baseline across behaviors with one patient.
- ❑ Potential combined approach of biomedical and behavioral interventions in tandem.
- ❑ Potential for group training in ABA and FA methodologies for groups of staff in residential facilities.

Final Implication

Total Lack of Memory

- ❑ No effect on success of intervention!