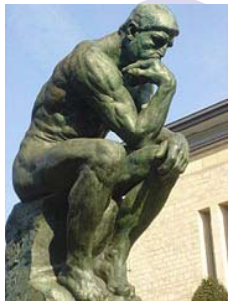


Introduction to Neuropsychological Testing for Financial Decision Making



John W. DenBoer, Ph.D.



Presentation to the Arizona
Fiduciaries Association
February 28th, 2014

Famous Decisions in History



Famous Decisions in History



Famous Decisions in History



Bad Decision Making



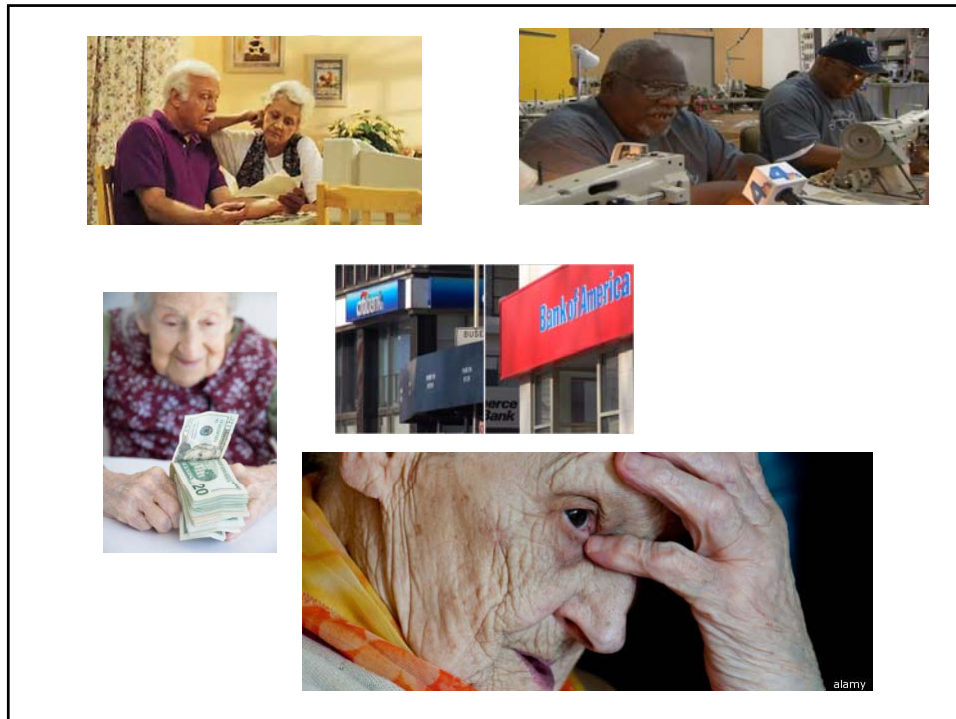
Copyright 2005 by Randy Glasbergen. www.glasbergen.com

INVESTMENTS AND RETIREMENT PLANNING



GLASBERGEN

"You have to spend money to make money. So I bought myself a cabin cruiser, luxury sports car, and a giant screen plasma TV."



Financial Decision Making Capacity in the News

- ***This Baby Will Live to Be 120***

(National Geographic, May, 2013)

- <http://ngm.nationalgeographic.com/2013/05/longevity/hall-text>



- ***Aging Parents, Dementia, and Financial Decisions: What Is Safe?*** (Rosenblatt, C., *Forbes*, 6/26/13)

- <http://www.forbes.com/sites/carolynrosenblatt/2013/06/26/aging-parents-dementia-and-financial-decisions-what-is-safe/>

- ***Why do Elderly Parents Fall for Scams that Seem so Obvious to Us?*** (Rosenblatt, C., *Forbes*, 2/13/14)

- <http://www.forbes.com/sites/carolynrosenblatt/2014/02/13/why-do-elderly-parents-fall-for-scams-that-seem-so-obvious-to-us/>

Importance of Neuropsychological Testing in Decision-Making Capacity

- “As our society ages, clinical assessment of higher order functional capacities has become increasingly important. In areas like *financial capacity*, medical decision making capacity, medication compliance, and driving, society has a strong interest in accurately discriminating intact from impaired functioning.”

- Marson et al., 2000

NP Testing for Financial Decision-Making Capacity: Outline

- I. Introduction
 - I. Important Definitions
 - II. Six Pillars of Capacity
 - III. Ten Myths
 - IV. Relevant Legislation
- II. Research on Financial Decision-Making Capacity
- III. Aspects of Decision-Making
- IV. Examples of Financial Decision-Making Capacity Evaluations
- V. Financial Decision-Making
- VI. Assessment of Decision-Making Capacity
- VII. The Role of Neuropsychological Testing in Decision-Making
- VIII. Dementia and Decision Making
- IX. Neuroanatomical Regions of Decision-Making
- X. Decision-Making in Neurologically-Impaired and “Normal” Populations
- XI. Ethical Challenges and Important Considerations
- XII. Case Examples
- XIII. Protecting Compromised People from Financial Abuse
- XIV. Questions?

Decision-Making: An Introduction

I. *Important Definitions*

- **decision-making** = an outcome of mental processes leading to the selection of a course of action among several alternatives
 - a reasoning and/or emotional process which can be rational or irrational
 - based on explicit and/or tacit (underlying) assumptions

Decision-Making: An Introduction (cont.)

- **Capacity** = the ability to engage in certain acts, (e.g., signing a contract)
 - Clinicians (e.g. neuropsychologists), not courts, evaluate
 - not a legal definition
- Definitions of capacity have evolved to reflect modern understandings of brain dysfunction, functional abilities, and the law.

Decision-Making: An Introduction (cont.)

Capacity:

- is *task-specific* not global
 - e.g., financial capacity can be intact, although medical capacity compromised
- can fluctuate
- is situational
- is contextual (2006, ABA & APA)

Decision-Making: An Introduction (cont.)

Ten Myths of Financial Decision-Making Capacity

(adapted from *Ten Myths of Decision-Making Capacity*, VA Healthcare System)

- **Myth 1:** Decision-making capacity and legal competency are the same.
- **Myth 2:** Lack of decision-making capacity can be presumed when patients go against financial advice.
- **Myth 3:** There is no need to assess decision-making capacity unless patients go against financial advice.

Decision-Making: An Introduction (cont.)

Ten Myths of Financial Decision-Making Capacity

(adapted from *Ten Myths of Decision-Making Capacity, VA Healthcare System*)

- **Myth 4:** Financial decision-making capacity is an “all or nothing” phenomenon.
- **Myth 5:** Cognitive impairment equals lack of financial decision-making capacity.
- **Myth 6:** Lack of financial decision-making capacity is a permanent condition.
- **Myth 7:** Patients who have not been given relevant and consistent information lack financial decision-making capacity.

Decision-Making: An Introduction (cont.)

Ten Myths of Financial Decision-Making Capacity

(adapted from *Ten Myths of Decision-Making Capacity,)*

- **Myth 8:** Patients with certain psychiatric disorders lack financial decision-making capacity.
- **Myth 9:** Patients who are involuntarily committed lack financial decision-making capacity.
- **Myth 10:** Only mental health experts can assess financial decision-making capacity.

Decision-Making: An Introduction (cont.)

Six Pillars of Capacity: (2006 American Bar Association Committee on Law and Aging – American Psychological Association)

- I. Medical condition producing functional disability
- II. Cognitive functioning component
- III. Everyday functioning component
- IV. Consistency of choice with values, preferences, and patterns
- V. Risk of harm and level of supervision needed
- VI. Means to enhance capacity

Decision-Making: An Introduction (cont.)

- **Capacity vs. Competency**
- **Competency** = a legal construct
“denoting the minimum level of capacity or ability that an individual needs to make decisions or perform a particular transaction” (Auerbach, 2000)
 - evaluated by the legal system

Decision-Making: An Introduction (cont.)

- **Capacity----Incapacity** (adapted from Marson, 2011)
 - Denotes a clinical status determined by clinician
 - Clinical judgment “evidence” of legal competency
 - Clinical judgment does not alter competency status
 - Clinical judgment does not permit transfer of authority for decision making to another (exception: DPA's)

Decision-Making: An Introduction (cont.)

- **Legal Competency---Incompetency** (adapted from Marson, 2011)
 - Denotes a legal status determined by a judge
 - Judgment based on clinically evidence, case/statutory law, principles of justice, and other non-clinical factors
 - Judgment of “incompetency” alters legal status by removing rights of self determination for specific matter
 - Judgment of “incompetency” requires transfer of decisional authority to a court appointed proxy guardian/conservator

Decision-Making: An Introduction (cont.)

- Capacity is a hypothetical construct
 - Cannot be directly observed or measured
 - Only way to assess is behavioral observations and cognitive performance
- Diagnosis does not constitute incompetency
 - Example: Alzheimer's dementia and driving a car
 - AD dx relevant, but not determinative, of driving capacity
 - Have to examine actual performance

Decision-Making: An Introduction (cont.)

- Cognitive Impairment Does Not Constitute Incompetency
- MMSE-2 score = 23/30
- Relevant to issue of consent, but not by itself determinative of capacity

Decision-Making: An Introduction (cont.)

II. Relevant Legislation (cont.)

- Definitions of legal capacity/incapacity have changed over time, developing a “legal fiction” of competency
 - In the absence of national consensus, there is a development of case-by-case and state-by-state legal fictions of capacity
- Early on, many states equated advanced age with presumption of disability

Decision-Making: An Introduction (cont.)

II. Relevant Legislation (cont.)

- Anderer (1990) - there has been an evolution in states’ definitions of incapacity (and, by extension, decision-making capacity)
- *Age → Disability → Functional Impairment*
- Now includes necessity of action by the state
 - includes conditions under which the state may intervene

Decision-Making: An Introduction (cont.)

II. *Relevant Legislation (cont.)*

- Due Process in Competency Determinations Act (DPCDA)
 - Code 6100.5 – section 812
 - enacted in 1995 by the State of California
 - requires that a determination of lack of mental capacity be supported by evidence of a deficit in at least one specific *mental* function
 - mental health evaluators are called upon to determine whether “a person is of unsound mind or lacks the capacity to make a decision or do a certain act”

Decision-Making: An Introduction (cont.)

II. *Relevant Legislation (cont.)*

- Current best practice of incapacity among older adults requires three tests:
 1. *Cognitive*
 2. Behavioral
 3. Necessity

Decision-Making: An Introduction (cont.)

II. Relevant Legislation(cont.)

Example: District of Columbia Incapacity

<u>Aspect</u>	<u>Statute</u>
Cognitive test	"Incapacitated individual" means an adult whose ability to receive and evaluate information effectively or to communicate decisions is impaired without court assistance or the appointment of a guardian or conservator...
Behavioral test	"...to such an extent that he or she lacks capacity to manage all or some of his or her financial resources..."
Necessity test	"...without court assistance or the appointment of a guardian or conservator..."

Source: DC Code Annotated 21-2011(11) 2005

Decision-Making: An Introduction (cont.)

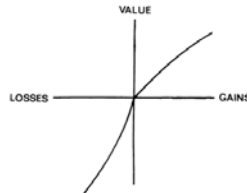
● Legal Standards for Capacity to Consent

<u>Standard</u>	<u>Capacity</u>
S1	To evidence a treatment choice
S2	To make the reasonable choice (when the alternative is manifestly unreasonable)
S3	To appreciate the consequences of the choice
S4	To provide rational reasons for the choice
S5	To understand treatment situation, choices, and respective risks/benefits

Source: "Assessing the Competency of Patients with Alzheimer's Disease under Different Legal Standards," by D.C. Marson, K.K. Ingram, H.A. Cody, and L.E. Harrell (1995), Archives of Neurology, pp. 949-954.

Research on Decision-Making

- Has been the subject of a great deal of formal research
 - Kahneman & Tversky's research involving intuition and judgment heuristics
 - prospect theory
 - resulted in the 2002 Nobel Prize in Economics



Aspects of Decision-Making Capacity

- **Understanding** = the ability to comprehend the problem, likely consequences, and proposed treatment
- **Appreciation** = related to the patient's beliefs about the medical condition and potential treatments
- **Reasoning** = the ability to process treatment information and one's preferences in a logical manner
- **Expressing A Choice** = ability to state a preference
 - Choice Consistency (Feinberg & Whitlatch, 2001)

Aspects of Decision-Making Capacity (cont.)

- Jurisdictions vary in the extent to which they emphasize two elements: appreciation and reasoning.
 - “Rationality dependent” standards have been excluded from “appreciation dependent” processes

Examples of Capacity Evaluations

Is the patient capable of:

- signing important legal paperwork?
 - contracts
 - power of attorney
 - living will
- leaving the hospital against medical advice (AMA)?
- Consenting to or refusing medical treatment?
- Making decisions re: their d/c planning?
- Being their own guardian?



Financial Decision-Making

- **Financial Decision-Making**

- **financial decision-making capacity:**
 - 1) the ability to understand medical condition and
 - 2) the ability to understand options for medical care
- **Indications for financial decision-making assessment:**
 - a) abrupt change in mental status
 - b) refused recommended financial advise w/o adequate reason
 - c) accept risky financial advice w/o adequate thought processing
 - d) known risk of impaired decision making in financial arena



Financial Decision-Making (cont.)

- **Evaluation for financial decision-making capacity:**

- Does the patient *understand* their condition and treatment?
- Can patient *apply* information to their own condition?
- Reasoning *consistent* with the facts and their values?
- Can the patient *communicate* their choices clearly?

IV. Medical and Financial Decision-Making (cont.)

- **Financial decision-making** = the ability to make choices regarding one's personal finances
- *Examples:*
 - Selling a house
 - Buying stock
 - Making large purchases
 - Signing financial power of attorney paperwork

What are the Cognitive Skills Relevant to Financial Decision Making?

- Orientation/Confusion
- Comprehension
- Reasoning
- Problem-Solving
- Judgment
- Cognitive Flexibility
- Impulsivity

What are the Cognitive Skills Relevant to Financial Decision Making? (cont.)

- Financial capacity is a highly cognitively mediated capacity that is vulnerable to neurological, psychiatric, and medical conditions that affect cognition
- Neuropsychologists are increasingly called upon by families, physicians, attorneys, and judges to evaluate and offer clinical opinions regarding financial capacity (Marson et al., 2008)

Assessment of Financial Decision-Making Capacity

- *Neuropsychological Interview*
 - determine the reason for the evaluation
 - talk to the pt. about the reason for the evaluation
 - may be beneficial to review with the patient the basic facts related to the decision at hand
 - Nature of the patient's condition
 - Nature and purpose of the proposed treatment
 - Benefits, risks, and alternative options
 - Assess the key domains for capacity via interview
- *Neuropsychological testing*

Assessment of Financial Decision-Making Capacity (cont.)

● *Neuropsychological Interview*

- Expressing A Choice
 - Can you tell me what your decision is?
- Ability to Understand Relevant Information
 - Tell me in your own words what your doctor told you about the nature of your condition
- Ability to Appreciate One's Own Situation and Its Consequences
 - Tell me what you believe is wrong with your health now.
 - What will happen if you have the treatment your M.D. recommends?
 - *What will happen if you don't?*
- Ability to Reason with the Relevant Information
 - What were the factors involved in making your decision?

Assessment of Financial Decision-Making Capacity (cont.)

- Interview information alone is insufficient in establishing one's capacity to proceed in important legal decisions
 - Significant disagreement is observed when physicians are asked to judge the competency of patients with Alzheimer's disease (AD)
 - When neuropsychological measures are added, degree of deterioration and capacity were able to be assessed (Marson et al., 1997)

Assessment of Financial Decision-Making Capacity (cont.)

- Functional Elements of Assessment

1. Specific Abilities and Tasks
 1. Understanding concepts (loans and savings) and putting them into specific tasks (choosing an advantageous interest rate)
2. General Domains
 1. Core domains are identified: basic monetary skills, financial conceptual knowledge, cash transactions, checkbook management, bill payment, investment decision making
3. Overall Capacity
 1. NP's are asked by courts to determine overall capacity

Assessment of Financial Decision-Making Capacity (cont.)

- Griffith, Belue, Sicola, Krzywanski, Zamrini, Harrell, & Marson (2003)

<u>Domains</u>	<u>Tasks</u>
Basic Monetary Skills	Naming Coins/Currency, Counting Money
Financial Conceptual Knowledge	Define and apply financial concepts
Cash Transactions	item grocery purchase; tipping
Checkbook Management	understand checkbook; use checkbook
Bank Statement Management	understand and use bank statement
Financial Management	detect mail and telephone fraud risk
Bill Payment	understand, prioritize, and prepare bills
Knowledge of Assets/Estate	indicate personal assets and estate arrang
Investment Decision Making	understand investments options and return
Overall Financial Capacity	know overall functioning

Assessment of Financial Decision-Making Capacity (cont.)

- *Neuropsychological Testing*
 - Capacity assessments should evaluate cognitive skills relevant to decision-making
 - Oriented to Time/Place?
 - Memory for Recent Events (e.g., what happened yesterday?)
 - Is the patient confabulating?
 - Ability to follow events through in a logical temporal sequence (e.g., this will lead to that)
 - Does pt. benefit from extra structure?
 - Does pt. demonstrate reduced attention?
 - Is it possible for pt. to understand via alternative format?

Assessment of Financial Decision-Making Capacity (cont.)

- Consider adjunct sources of information
 - Behavioral observations during interview/assessment
 - impulsivity
 - functional memory
 - Observations from partners and/or family members
 - Staff report of patient behavior and/or cognition

Assessment of Financial Decision-Making Capacity (cont.)

● Clinical Measures

- Mental Status Examination
- Mini Mental Status Exam (MMSE) (Folstein, 1975)
- Aid to Capacity Evaluation (Etchells et al., 1999)
- Decision-Making Involvement Scale (Meane et al., 2008)
- MacArthur Competence Assessment Tool (MacCAT-T)
 - provides a semistructured interview format with which to assess and rate pt.'s abilities related to four standards for competence (*understanding, appreciation, reasoning, and expressing a choice*)
 - *advantage*: good tool for medical consent
 - *disadvantages*: developed on psychiatric patients; lacking important information for dementia pt.'s (Moye, personal communication)

Assessment of Financial Decision-Making Capacity (cont.)

● Neuropsychological Tests

- WAIS-IV Similarities
 - Can help with assessing understanding and abstract thought
- WAIS-IV Comprehension
 - Helpful in assessing problem-solving ability for real-world scenarios
- WAIS-IV Digit Span
 - Helpful in assessing brief attention
- WCST-CV
 - Assesses cognitive flexibility and executive functioning
- HVLT/CVLT-II and WMS-IV Logical Memory
 - Assesses memory ability for unstructured and structured information

Assessment of Financial Decision-Making Capacity (cont.)

- Neuropsychological Tests (cont.)
 - Executive Clock Drawing Test
 - Financial Capacity Test
 - Dementia Rating Scale – Second Edition (DRS-2)
 - Token Test
 - Trails A and B
 - Wide Range Achievement Test – 4 (reading subtest)

Assessment of Financial Decision-Making Capacity (cont.)

Independent Living Scale (ILS) (Loeb, 1995)

- Health and Safety Questions
 - Example Questions:
 - "If you didn't have a regular doctor and you needed medical help quickly, how could you get it?"
 - "If you had pain in your chest, on your left side, and you were having trouble breathing, what would you do?"
 - "Tell me two things about the condition of your health during the past 5 years."
- Managing Money

Financial Capacity Instrument (FCI) (Marson)

- Considered the best instrument of financial decision-making capacity, although not currently available for commercial use
 - Attention and executive functioning were found to be significant correlates of FCI performance (Okonkwo, Wadley, Griffith, Ball, & Marson, 2006)

Assessment of Financial Decision-Making Capacity (cont.)

- Moving Towards More Ecologically-Valid Measures
 - Choosing rental apartments (Fellows, 2006)
 - Interviewing Family Members (Feinberg & Whitlatch, 2001)

Assessment of Financial Decision-Making Capacity (cont.)

- Measures Used by Other Disciplines
 - Capacity to Consent to Treatment Interview
 - Hopemont Capacity Assessment Interview

Dementia and Financial Decision-Making Abilities

- Dementia can influence an individual's ability to reason and make good decisions
 - Places them at higher risk for fraud and exploitation
- Specific effects are dependent on the clinical population in question, brain region(s) impacted by the disorder, and the presentation (early vs. late)

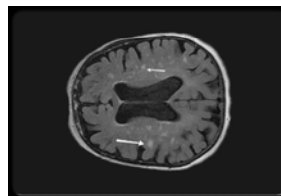
Dementia and Financial Decision-Making Abilities (cont.)

- Alzheimer's Dementia
 - Impacts medial temporal regions at the beginning of the disease, which are responsible for converting short-term to long-term memories
 - Progresses to parietal and frontal regions
 - Ventromedial and dorsolateral prefrontal regions affect Alzheimer's disease and emotional aspects of decision making
 - Effect decision making by disrupting the ability to keep information on-line as one weighs a decision and integrate feedback into the decision process

Dementia and Financial Decision-Making Abilities (cont.)

- Dementia of the Vascular Type

- Prevalence of about 6% in individuals over 60; rate increases with age
- Course is variable
- Changes in memory, executive functioning, language, and visuospatial systems
- Given variability in neuropsychological functioning, clients may have particular strengths and weaknesses
- Evaluations should always be domain-specific



Neuroanatomical Regions of Financial Decision-Making

- **Frontal Lobe** (Clark & Manes, 2006)
- **Orbitofrontal Cortex** (Manes et al., 2002)
- **Ventromedial Prefrontal Cortex** (Fellows, 2006; Bechara, Tranel, & Damasio, 2000)
- **Dorsolateral Prefrontal Cortex** (Bechara & Van Der Linden, 2005)
 - Typically associated with “cold cognition” (e.g., remembering a phone number)
 - Becomes active when people make utilitarian choices



Decision-Making in Neurologically-Impaired Populations

- Phineas Gage = case of impaired decision-making capacity
 - Damage to bilateral medial frontal lobes (Damasio et al., 1994)
 - "...impatient of restraint or advice when it conflicts with his desires, at times pertinaciously obstinate, yet capricious and vacillating, devising many plans of future operations, which are no sooner arranged than they are abandoned in turn for others appearing more feasible... his friends and acquaintances said he was 'no longer Gage.'" (Harlow, 1868)

Decision-Making in Neurologically-Impaired Populations



Damasio et al., 1994



Mr Joseph Larkin Austin, eldest son of Mr Eleazer Austin, was found drowned near the south bridge in Salem; it is supposed he fell overboard between 2 and 3 o'clock in the morning, while fishing.

Horrible Accident.—As Phineas P. Gage, a foreman on the railroad in Cavendish, was yesterday engaged in tanking for a blast, the powder exploded, carrying an iron instrument through his head an inch and a fourth in circumference, and three feet and eight inches in length, which he was using at the time. The iron entered on the side of his face, shattering the upper jaw, and passing back of the left eye, and out at the top of the head.

The most singular circumstance connected with this melancholy affair is, that he was alive at two o'clock this afternoon, and in full possession of his reason, and free from pain.—*Andover, Vt., Union.*

The chief of the Philadelphia dogkillers, a black man named George Horsey, attempted to kill his wife. He broke into her room armed with a pistol and knife; she threw herself out of the second story window to escape, breaking her leg in the fall; he pursued her, and attacked and injured her severely. She was taken to the hospital. Horsey was fully committed for trial.

Boston Post, 9/21/1848

Financial Decision-Making in Neurologically-Impaired and “Normal” Populations

- Frontal Lobe Injuries
 - Prefrontal cortex
 - Prefrontal or posterior brain damage
- Subarachnoid Hemorrhage (Salmond et al., 2006)
 - SAH survivors displayed altered sensitivity to both reward and punishment, as well as impulsive responding.
- Dementia
 - Alheimers
 - Vascular
 - Other

Decision-Making in Neurologically-Impaired and “Normal” Populations (cont.)

- ACA aneurysms (Mavaddat et al., 2000)
 - pt.'s w/ ACA aneurysms showed no differences in speed or quality of decision-making, although they did show increased risk-taking behavior
 - May lead to microischemia or infarction after ACoA aneurysmal rupture or to a disconnection in the ventromedial circuits from distant or generalized brain damage
- Tourette's Syndrome (Goudriann et al, 2005)
- Anterior and Posterior Lesions (Channon & Crawford, 1999)
 - Pt.s w/ brain lesions showed impairment relative to controls in both everyday problem-solving and on more abstract tests involving executive functioning and memory.
 - The anterior group was impaired on more aspects of everyday problem-solving than the posterior group
 - Showed reduced fluency in generating possible solutions as well as impairments in selecting appropriate problem solutions

Financial Decision-Making in Neurologically-Impaired and “Normal” Populations (cont.)

- Mild-moderate dementia (Moye et al., 2006)
 - Some pt.'s w/ mild-moderate dementia develop a clinically relevant impairment of consent capacity with 1 year
- Frontotemporal dementia (Torralva et al., 2007)
- Alzheimer's Disease (Huthwaite et al., 2006; Torralva et al., 2000)
 - Compared to healthy alternatives, pt.'s w/ AD shifted b/t safe and risky strategies, w/ no consistent response pattern established over time (Delazer et al., 2007)
 - Pt.'s w/ AD may be less likely to engage in feature-by-feature comparison processes across choice options (Budson et al., 2006)
- Parkinson's Disease (Mimura, 2006; Brand, 2004; McDonald et al., 2001)
- Huntington's Disease (Stout et al., 2001; Watkins et al., 2000)

Ethical Challenges and Important Considerations

- Challenges include:
 - balancing the need to respect an individual's freedom of choice and self-determination with the need to promote their safety
 - attaining professional competence
 - Selecting, using, and interpreting assessment methods appropriately (Moberg & Kniele, 2006)

Ethical Challenges and Important Considerations (cont.)

- Important Considerations:
 - Does the pt. feel free to choose (i.e., not coerced)
 - How serious are the consequences of the pt.'s decision?
 - Important to assess *how* the decision is made, not *what* was decided

Case Example 1

- 81-yo, rh male w/ diagnosis of left lenticulostriate stroke/lacunar infarct
- right hemiparesis, loss of balance, and dysarthria
- pt. owned a farm and was his wife's caretaker
- MRI revealed an acute infarct involving the left posterior corona radiata superimposed on a background of mild-moderate microvascular ischemic disease
- Questions re: competency to make important financial decisions
- "adopted son" interested in transferring power of attorney to him
 - concern about risk of financial exploitation

Case 1: Neuropsychological Measures Administered

- BNI Screen (*abbreviated*)
- WAIS-IV (*selected subtests*)
- BVMT-R (*form 1*)
- HVLT
- Hooper Visual Organization Test (HVOT)
- SDMT (*Oral version*)
- Trail Making Test – Parts A and B
- WCST – 64
- Verbal Fluency (phonemic – FAS; semantic – Animal Naming)
- Finger Tapping Test

Test Results

- **BNI Screen** (*abbreviated*)
 - alert and oriented
 - could not follow 2-step command
 - sentence repetition impaired
 - otherwise unremarkable
- **WAIS-III**
 - Digit Span SS=7 (6 DF, T=35; 4 DB, T=38)
 - Similarities SS=9
- **HVLT**
 - Trial 1 = 6
 - Trial 2 = 7
 - Trial 3 = 12
 - Total 1-3 = 25 (T=43)
 - Delay = 7/12 (T = 45)
 - Recognition discr. = 9 (T = 41)



Test Results (cont.)

● BVMT-R

- Trial 1 = 7 - Delay = 12 (T = 68)
- Trial 2 = 8 - Recognition = 6/6 w/
- Trial 3 = 11 no false positive errors
- Total = 26 (T = 60)

● HVOT

- raw score = 24, inverted T = 36 *(very low range of probable impairment)*

● SDMT *(oral version)* T=44



Test Results (cont.)

● TMT – A = 68 sec.'s w/ 0 errors (MOANS SS = 7)

● TMT – B = 251 sec.'s w/ 1 error (MOANS SS – 4)

● *Note: pt. used his dominant hand to complete these tests.*

● WCST-64:

- pt. completed 2 categories (>16th %ile)
- 21 total errors (T=53)
 - 10 perseverative (T=58)
 - 1 failure to maintain set

● FAS = 22 total words (T=43)

● Animal Naming = 18 (T=62)

● Finger Tapping (dom.) avg. = 14.75 (T=16) (ndom.) avg. = 45.40 (T=52)

Test	Score/Interpretation		
BNI Screen (<i>abbreviated</i>)	- difficulty following a 2-step command; impaired sentence repetition		
Attention			
WAIS-III – Digit Span	- SS=7 (6 DF, T=35; 4 DB, T=38)		<i>low-average</i>
Processing Speed			
TMT-A	- 68 sec.'s w/ 0 errors MOANS SS=7		<i>low-average</i>
SDMT (<i>oral version</i>)	- T=44		<i>average</i>
Executive Functioning			
WCST-64 (<i>oral version</i>)	2 categories (>16 th %ile) 21 Total Errors (T=53) 10 perseverative errors (T=58) 1 failure to maintain set		<i>average</i>
TMT-B	- 251 sec.'s w/ 1 error MOANS SS=7		<i>low-average</i>
Similarities	SS = 9		<i>average</i>
Learning & Memory			
HVLT	Trial 1 = 6 Trial 2 = 6 Trial 3 = 7	Total T=43	<i>low-average</i>
BVMT-R	Trial 1 = 7 Trial 2 = 8 Trial 3 = 11	Learning Total T=60 Delay = 7/12 (T=68)	<i>high-average</i>
Verbal Fluency			
FAS	T=43		<i>low-average</i>
Animal Naming	T=62		<i>above-average</i>
Motor Functioning			
FTT (dom.)	mean = 14.75 (T=16)		<i>severely impaired</i>
FTT (ndom.)	mean = 45.40 (T=52)		<i>average</i>

Case Example 1 (cont.)

- *Collateral Information:* the pt.'s ST has indicated that he has done well with functional tasks of everyday financial management



Case Example 1 (cont.)

- YOU MAKE THE CALL

- Supervision?
- Return to Work?
- Driving?
- Financial Decisions?



Case Example 1 (cont.)

- Supervision?
 - close supervision upon d/c
- Return to Work?
 - not ready to return to work
- Driving?
 - pt. should await medical clearance and ideally complete a driving safety evaluation prior to operating a motor vehicle
- Financial Decisions?
 - The pt.'s deficits in attention and executive functioning emphasize the need for supervision from a trusted individual when making *large* financial decisions
 - Pt. appears competent to make day-to-day financial decisions



Case Example 2

- 69-yo female
- Married; employed part time
- Husband – wife managed family bank account and balanced checkbook for most of married life with little to no assistance
- Approximately two years ago she could not handle the family bank account
 - Failed to make deposits and enter checks she had written
 - Now has no worries about finances



Case 2: Neuropsychological Measures Administered

- MMSE-2
- WAIS-IV (*selected subtests*)
- CVLT-II
- Dementia Rating Scale – Second Edition (DRS-2)
- Trail Making Test – Parts A and B
- WCST – 64
- Verbal Fluency (phonemic – FAS; semantic – Animal Naming)



Test Results

- **MMSE-2**
 - 23/30
 - alert and oriented
 - Immediate memory = 3/3, delayed memory = 1/3
 - Naming impaired
- **WAIS-III**
 - Digit Span SS=6
 - Similarities SS=7
- **CVLT-II**
 - Total 1-4 =T=35



Test Results (cont.)

- **TMT – A** = 76 sec.'s w/ 1 error (MOANS SS = 7)
- **TMT – B** = 310 sec.'s w/ 1 error (MOANS SS = 6)
- *Note: pt. used his dominant hand to complete these tests.*
- **WCST-64:**
 - pt. completed 2 categories (>16th %ile)
 - 35 total errors (T=53)
 - 14 perseverative (T=58)
 - 2 failures to maintain set
- **FAS** = 19 total words (T=35)
- **Animal Naming** = 15 (T=43)
- **Dementia Rating Scale** = Total Index Score = 85



Case Example 2 (cont.)

- YOU MAKE THE CALL

- Supervision?
- Return to Work?
- Driving?
- Financial Decisions?



Case Example 2 (cont.)

- Supervision?
 - Financial, possibly legal and medical; possible POA needed
- Work Status?
 - basic tasks, with some supervision; reduced hours
- Driving?
 - should complete a driving safety evaluation prior to operating a motor vehicle
- Financial Decisions?
 - Need for a financial POA, payee/conservator, fiduciary assistance

Protecting Compromised People from Financial Abuse

- Financial abuse often goes unreported
- Traumatic Brain Injury
- Dementia
 - 15% of people with dementia have been victims of financial abuse (e.g., cold-calling, scam mail, or mis-selling)
 - 62% of caregivers reported that the person they cared for had been approached by cold callers, door-to-door salesman
 - 70% reported that telephone callers routinely targeted the person they cared for

Protecting Compromised People from Financial Abuse (cont.) Dementia (cont.)

- *Methods of Protection:*
 - Improve community support services
 - Find practical ways to empower people with dementia to be involved in financial decision making based on their preferences
 - Ensure professionals supporting people with dementia have awareness to support financial abuse
 - Introduce symptoms and processes to manage finances with people with dementia

Source: UK Alzheimer Society

Protecting Compromised People from Financial Abuse (cont.)

Traumatic Brain Injury

- Persons with 4 to 10 times more likely to become a victim of violence, abuse, or neglect than persons with disabilities (Petersilia, 2001)
- TBI can cause cognitive problems that reduce one's ability to perceive, remember, or understand risky situations that could lead to an incident of physical or sexual violence (Kim, 2002, Levin, 1999).
- Misperceptions about TBI and its effects may lead to treatment that is demeaning or abusive (Sequeria & Halsted, 2001)

Protecting Compromised People from Financial Abuse (cont.)

- Cognitive rehabilitation
 - Reducing the severity and extent of dementia
 - Strategic Memory for Alzheimer's Treatment (SMART) program
 - Most helpful for individuals in stage 1-3 of dementia
 - Requires homecare assistance
- Helpful for mild forms of TBI, stroke, etc.



Take Home Messages

- Financial decision-making capacity has emerged as an important and distinct field of study (Moye & Marson, 2007)
- Financial decision-making capacity is varied and diverse
- The evaluation of financial decision-making capacity is a difficult and important process
- Neuropsychologists are uniquely trained to evaluate financial decision-making capacity



Financial Decision-Making Capacity Evaluations

- John DenBoer, Ph.D.

The Nicholls Group
9965 N. 95th St., Suite 101
Scottsdale, AZ, 85258
480-998-2303



www.thenichollsgroup.com



References

- American Bar Association Committee on Law and Aging and American Psychological Association (2006). *Judicial Determination of Capacity of Older Adults in Guardianship Proceedings*. Washington, D.C.: APA.
- Assessment of Older Adults with Diminished Capacity: A Handbook for Psychologists (2008). *American Bar Association Commission on Law and Aging*.
- Auerbach, S.M. (2000). Should patients have control over their own health care?: empirical evidence and research issues. *Annals of Behavioral Medicine*, 22(3), 246-259.
- Budson, A.E., Mather, M., & Chong, H. (2006). Memory for choices in Alzheimer's disease. *Dementia and Geriatric Cognitive Disorders*, 22, 150-158.
- Channon, S., & Crawford, S. (1999). Problem-solving in real-life-type situations: the effects of anterior and posterior lesions on performance. *Neuropsychologia*, 37, 757-770.
- Damasio, H., Grabowski, T., Frank, R., Galaburda, A.M., Damasio, A.R. (1994). The return of Phineas Gage: clues about the brain from the skull of a famous patient. *Science*, 264 (5162), 1102-1105.
- Delazer, M., Sinz, H., Zamarian, L., & Benke, T. (2007). Decision-making with explicit and stable rules in mild Alzheimer's disease. *Neuropsychologia*, 45, 1632-1641.
- Denney, R.L., & Wynkoop, T.F. (2000). Clinical neuropsychology in the criminal forensic setting. *Journal of Head Trauma Rehabilitation*, 15, 804-828.
- Etchells, E., Darzins, P., Siberfeld, M., Singer, P.A., McKenny, J., Nagle, G., Katz, M., Guyatt, G.H., Molloy, W., & Strang, D. (1999). Assessment of patient capacity to consent to treatment. *Journal of General Internal Medicine*, 14, 27-34.
- Feinberg, L.F. & Whitlatch, C.J. (2001). Are persons with cognitive impairment able to state consistent choices? *The Gerontologist*, 41(3), 374-382.
- Folstein MS, Folstein SE, & McHugh PR. (1975). Mini-Mental State: a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatry Research*, 12, 189-198.
- Griffith, R. Belue, Sicola, Krzywanski, Zamrini, Harrell, & Marson, D.C. (2003). Impaired financial abilities in mild cognitive impairment: A direct assessment approach. *Neurology*, 60, 449-457.
- Griffith, H.R., Dymek, M.P., Atchison, P., Harrell, L., & Marson, D.C. (2005). Medical decision-making in neurodegenerative disease: Mild AD and PD with cognitive impairment. *Neurology*, 65, 483-485.



References (cont.)

- Harlow, J.M. (1868). Recovery from a passage of iron bar through the head. *Publications of the Massachusetts Medical Society*, 2, 327-347.
- Kim, E. (2002). Agitation, aggression, and disinhibition syndromes after traumatic brain injury. *Neurorehabilitation*, 17(4): 297-310.
- Levin, H.S. (1999). Neurocognitive/behavioral outcomes in children and adults. In Ragnarsson. Report of the NIH Consensus developmental conference on the rehabilitation of persons with traumatic brain injury. Washington DC: Department of Health and Human Services, Public Health Service, National Institutes of Health, 49-54.
- Loeb PA: ILS: Independent Living Scales Manual. San Antonio, Tex, Psychological Corp, Harcourt Brace Jovanovich, 1996
- Okonkwo, O.C. Wadley, V.G., Griffith, H.R., Ball, K., & Marson, D.C. (2006). Cognitive correlates of financial abilities in mild cognitive impairment. *Journal of the American Geriatrics Society*, 54 (11), 1745-1750.
- Marson, D.C., Ingram, H.A., Cody, H.A., & Harrell, L.E. (1995). Assessing the competency of patients with Alzheimer's disease under different legal standards. *Archives of Neurology*, 52, 949-954.
- Marson, D.C. (1997). Consistency of physician judgment of capacity of consent in mild Alzheimer's disease. *Journal of American Geriatric Society*, 45 (4).
- Mavaddat, N., Kirkpatrick, P.J., Rogers, R.D., & Sahakian, B.J., (2000). Deficits in decision-making in patients with aneurysms of the anterior communicating artery. *Brain*, 123, 2109-2117.
- Menne, H.L., Tucke, S.S., Whitlatch, C.J., & Feinberg, L.F. (2008). Decision-making involvement scale for individuals with dementia and family caregivers. *American Journal of Alzheimer's Disease & Other Dementias*, 23 (1), 23-29.
- Moye, J. (2008). Personal communication.
- Moye, J. & Marson, D.C. (2007). Assessment of decision-making capacity in older adults: an emerging area of practice and research. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 62, 3-11.



References (cont.)

- Qualls, S.H. & Smyer, M.A. (Eds.) (2007). *Changes in Decision-Making Capacity in Older Adults: Assessment and Intervention*. Hoboken, NJ: John Wiley and Sons.
- Rosenblatt, C. (2014). Why do Elderly Parents Fall for Scams that Seem so Obvious to Us? *Forbes*.
- Rosenblatt, C. (2013). Aging Parents, Financial Decisions, and Dementia: What is Safe? *Forbes*.
- Salmond, C.H., DeVito, E.E., Clark, L., Menon, D.K., Chatfeld, D.A., Pickard, J.D., Kirkpatrick, P.J., & Sahakian, B.J. (2006). Impulsivity, reward sensitivity, and decision-making in subarachnoid hemorrhage survivors. *Journal of the International Neuropsychological Society*, 12, 697-706.
- This Baby Will Live to Be 120*. *National Geographic*, May, 2013.
- Torralva, T., Dorrego, F., Sabe, L., Chmerinski, E., & Starkstein, S.E. (2000). Impairments of social cognition and decision making in Alzheimer's disease. *International Psychogeriatrics*, 12 (3), 359-368.
- Wood, S. & Tanus, B.T. (2007). Impact of Dementia on Decision-Making Abilities, (ch., in *Changes in Decision-Making Capacity in Older Adults: Assessment and Intervention* pp. 91-104.