

### Paying Attention To Voices

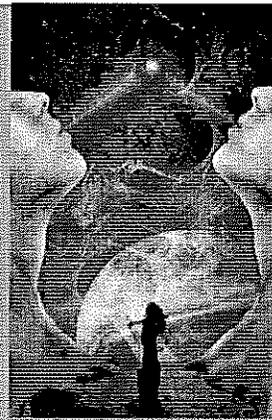
Kevin Riley, Ph.D.  
Paul Borish, MA, LPC, CAADC  
Center for Education and Training  
The Reading Hospital & Medical Center

### Disclosure

Dr. Riley and Mr. Borish state that they do not have any relevant financial relationships with any corporate organizations to disclose regarding today's presentation. Neither the course director nor members of the planning committee have any relevant financial relationships with any corporate organizations to disclose regarding today's presentation.

### Hallucinations

"A perception that occurs in the absence of an appropriate sensory stimulus, but which has all the characteristics of a real perception."



Sometimes I lie awake at night, and I ask, "Where have I gone wrong?"

Then a voice says to me, "This is going to take more than one night."

Charlie Brown

(Charles M. Schulz)



### Sleep and Hallucinations

- Hypnagogic and hypnopnic hallucinations occur at the boundary between sleeping and waking
- Occur when people are falling asleep, or when starting to wake up
- Tend to be extremely vivid, feeling like a Technicolor Oz after the black and white Kansas of every day life
- Visual, auditory, tactile, and kinetic sensations can all be experienced
- Everyone experiences slightly different forms



### Causes of Voice Hearing in the "Normal Population"

- Bereavement
- Sleep deprivation
- Sensory deprivation
- Noise
- History of trauma
- Illegal drug use
- Temporal lobe epilepsy
- Hostage situations/ solitary confinement



### What Do We Know?

#### International Pilot Study of Schizophrenia

- 7 Countries
  - Columbia, Czechoslovakia, Denmark, India, USSR, United Kingdom, USA
- 1,202 persons with mental illness
  - 811 suffering from schizophrenia
  - 164 with affective psychoses
  - 102 with other illnesses



WHO, 1974

### International Pilot Study of Schizophrenia

In Schizophrenia:

- 74% experienced auditory hallucinations
  - Verbal hallucinations = 70%
  - Voices speaking to the person = 64%
  - Hearing voices speak full sentences = 44%

### What Do We Know? Phenomenology



Modality	Men (N=57)		Women (N=37)		Total (N=94)	
	%	(n)	%	(n)	%	(n)
Auditory	54	(31)	78	(29)	64	(60)
Visual	39	(22)	35	(13)	37	(35)
Tactile	32	(18)	30	(11)	31	(29)
Olfactory	32	(18)	49	(18)	38	(36)
Gustatory	0		3	(1)	1	(1)

Rector & Seaman (1992)

### What Do We Know? Phenomenology



- 60 Inpatients
  - Schizophrenia (42)
  - Schizophreniform (10)
  - Other (8)
- Mean age 34
  - (range 18-74)
- Gender: 33M, 27F
- Mean duration 76 months
  - (range 1-480)

### Phenomenology



- 85% rated voice as clear
- 75% easy to identify source
- 45% equal loudness to real voices
- 36.5% duration between 2-30 minutes
- 23% internal experiences predominated

Oulis, et al, (1995)

### Talking With People

- **The Netherlands**
  - TV talk show
  - A person talking about her voice
- **700 Responded to Appeal to Contact**
  - 450 hear voices
  - 300 unable to cope
  - 160 "able to handle them"



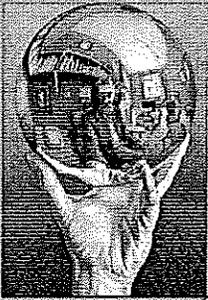
### "Good" and "Bad" Coping

	Good Copers (n= 150) %	Poor Copers (n= 300) %
Voices mostly negative	39	15
Stronger than voices	85	15
Cope by selecting	50	15
Have to obey (yes/sometimes)	40	75
Can ignore	68	28
Disturb contact with others	32	75
Learn to cope on own strength	80	30

Romme & Escher (1989)

### Talking With People

- **Created Congress for People (1987)**
  - 300 "Voice Hearers" Attended
  - A Non-Medical Meeting
  - Phases of Adaption Revealed



### Phases of Adaptation

- **Startling**
  - Sudden Onset
  - A Frightening Experience
- **Organization**
  - Selection & Communicating With the Voices
- **Stabilization**
  - Acquiring a More Continuous Way of Handling the Voices

### The "Startling Phase:" Antecedents to Initial Occurrence

- 70%: voices began after an emotional event
  - Illness, being in love, moving, pregnancy – 36%
  - Divorce or death – 14%
  - Psychotherapy session – 12%
  - "Spiritism" or Accident – 4%



### The Phase of Organization: Coping with The Voices

- Confusion/Wishes to Escape
- Anger Towards Voices/Ignoring Them
- Select and Listen to Positive Ones
- Drawing Limits/Structuring Contact

### The Phase of Organization

"The voices taught me how to watch, hear and feel. For example, they asked me: 'How do you hear us and in what way do we talk to you?' And I, very smart, answered: 'Well I just hear you with my ears, and you talk with your mouth.' 'Oh, really,' was the answer, 'then where is our larynx and in the same time we would like you to notice how you answer us'..."



Romme & Echer (1989)

### Phase of Stabilization

- Seeing Voices as Part of Oneself
- Choosing to Follow Voice's Advice or His / Her Own Ideas



### Measurement

- Brief Psychiatric Rating Scale (BPRS)
- Positive and Negative Syndrome Scale for Schizophrenia (PANSS)
- Psychotic Symptoms Rating Scale (PSYRATS)
- Beliefs About Voices Questionnaire - Revised (BAV-R)
- Interpretation of Voices Inventory

### PSYRATS

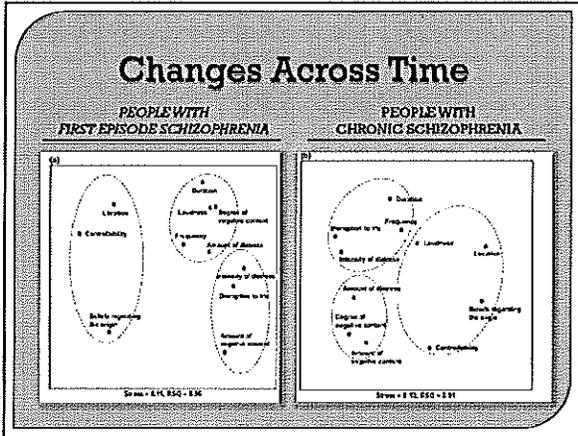
- Frequency
- Duration
- Location
- Loudness
- Beliefs about origins
- Amount negative content
- Degree negative content
- Amount distress
- Degree distress
- Disruption to life
- Controllability

### Changes Across Time

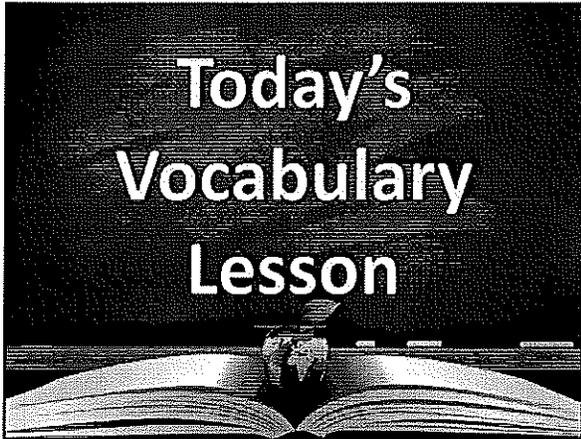
- Korean People With Schizophrenia
  - Drug Naive First Episode
    - 21 (illness < 2 years)
  - Drug Free Chronic Illness
    - 19 (illness > 10 years)
- Persistent Auditory Hallucinations
- Before and After 6 Months of Treatment

### Changes Across Time

- The Psychotic Symptoms Rating Scales
  - Auditory Hallucinations subscale
- Two clusters emerged
  - Emotional
  - Cognitive
  - (Physical characteristics did not cluster)



- ### Changes Across Time
- Cohesiveness of cluster structure increased in both groups with antipsychotic treatment
  - "Frequency" moved from cognitive to emotional domain
  - "Disruption to life caused by voices" moved shifted from cognitive to emotional domain
  - People in first episode group showed more changes across time



# Synesthesia

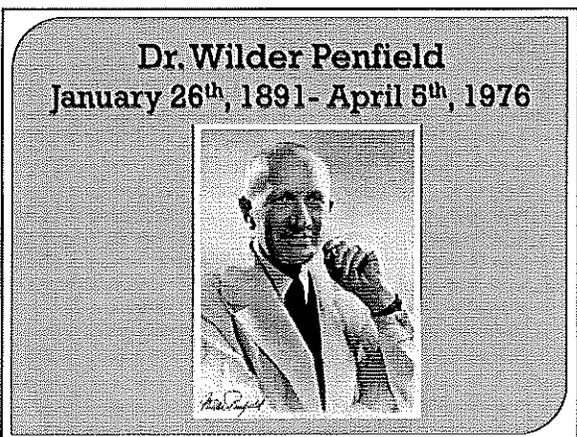
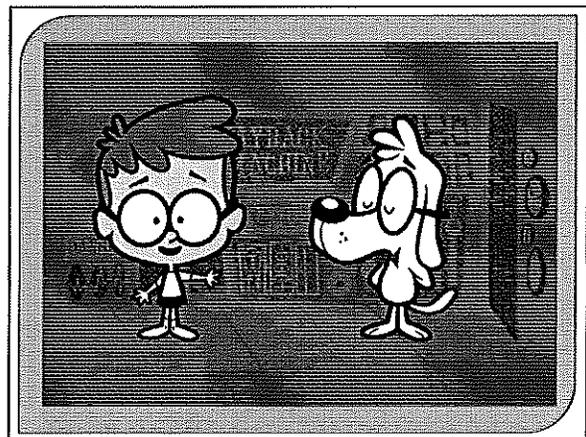
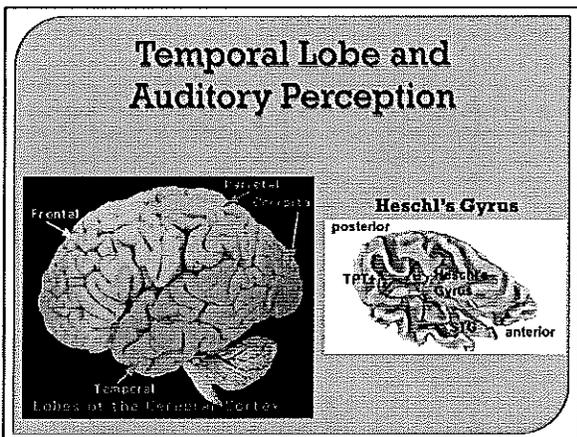
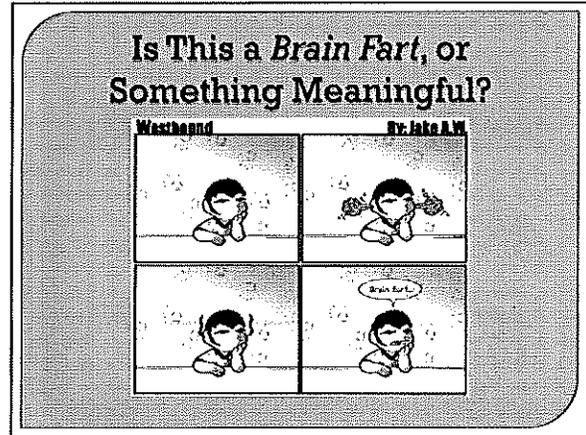
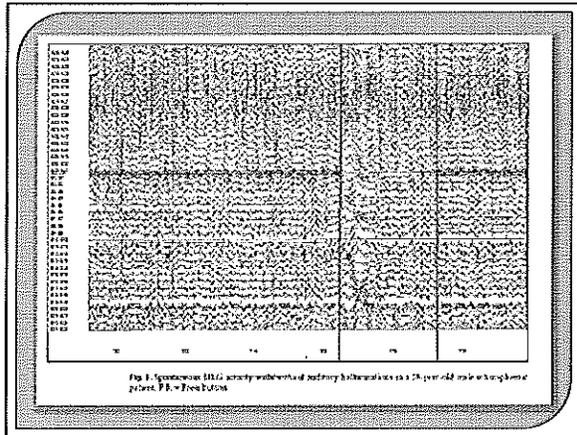
## Synesthesia

- Synesthesia from the ancient Greek *syn* (syn), "together," and *αἴσθησις* (aisthesis), "sensation,"
- A condition in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway.

## Synesthesia

**Over 60 Types Have Been Reported**

- **Grapheme** → color synesthesia or color-graphemic synesthesia, letters or numbers are perceived as inherently colored
- **Visual motion** → sound synesthesia, involves hearing sounds in response to visual motion and flicker



- Neurosurgical treatment of patients with severe epilepsy by destroying nerve cells in the brain where the seizures originated.
- Before operating, stimulated the brain with electrical probes while the patients were conscious on the operating table (under only local anesthesia), and observed their responses.

Figure 7. Human brain viewed as it appears during neurosurgery. Fred Penfield

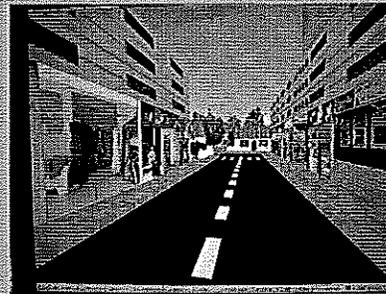
# The Reading Hospital and Medical Center / Center For Education and Training

"When one of these flashbacks was reported to me by a conscious patient, I was incredulous."

For example, when a mother told me she was suddenly aware, as my electrode touched the cortex, of being in the kitchen listening to the voice of her little boy who was playing outside in the yard."



- Daphna Weinshall
- Professor, School of Computer Science and Engineering
- Hebrew University of Jerusalem



## Reality, Unreality and Virtual Reality

- Used virtual reality to design an environment that challenges reality perception (1/2 hour task)
- Navigate a predetermined path through a residential neighborhood, shopping centers and a street market

Sorkin, Weinshall & Peled (2008)

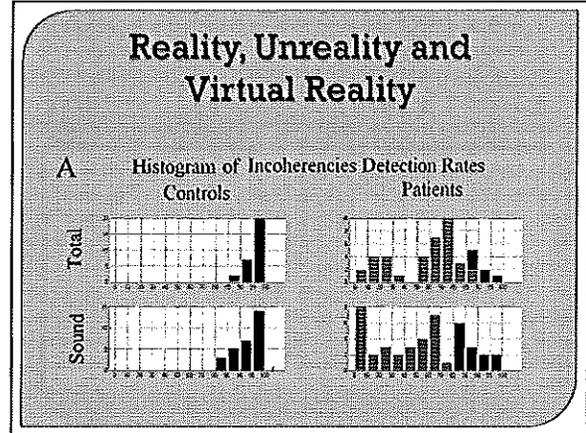


### Deliberately implanted inconsistencies

- Sound
  - A guitar emitting trumpet sounds
- Color
  - Pink crossing signs and a red cloud
- Location
  - A giraffe grazing in a local store

### Reality, Unreality and Virtual Reality

- 43 people with Schizophrenia 
- 29 healthy controls
  - Matched on age gender and education level
- Symptom severity measured by the Positive & Negative Syndromes Scale



### Relationships With Symptoms



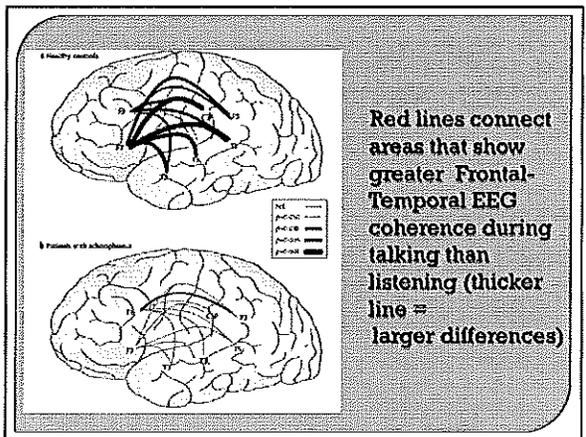
- "Hallucinations" score correlated with low total and sound detection rates
- "Difficulty in abstract thinking" correlated with low total, sound and color detection rates

### The "Disconnect"

- Loss of distinction between relevant and irrelevant stimuli
- Failure to ignore irrelevant stimuli = defect in self-monitoring
- People with positive symptoms (delusions, hallucinations) fail to attenuate responses to the consequences of their own actions or own speech

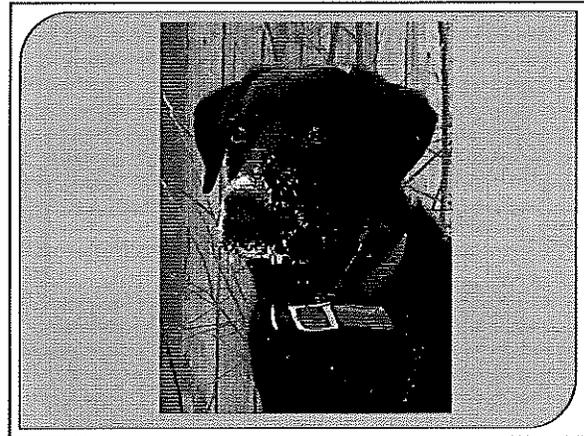
### Disruptions in Neural Connectivity

- Functional neuroimaging suggests altered patterns of brain response similar in dreaming and schizophrenia
- Frontal and temporal lobes show less connectivity in schizophrenia



# The Reading Hospital and Medical Center / Center For Education and Training

A functional disconnection or dysregulation between speech-generating (frontal) and speech-perceiving (temporal) brain regions



- New York
- July 1976 until July 1977
- Eight shootings
- Six people killed – 7 others wounded

I AM DEEPLY TORT BY YOUR CAUSING-  
 AS A WENCH MATE, I AM NOT.  
 BUT I AM A MONSTER.  
 I AM THE SON OF SAM. I AM A WILE  
 BRAWN  
 WHEN FATHER SAM GETS DRUNK  
 HE GETS MEAN. HE BEATS HIS  
 FAMILY. SOMETIMES HE TIES ME  
 UP IN THE BACK OF THE HOUSE.  
 OTHER TIMES HE LOCKS ME  
 IN THE GARAGE. SAM LOVES TO  
 DRINK BLOOD. SAM LOVES TO  
 GO OUT AND KILL COMMUNIS  
 FATHER SAM  
 BEHIND OUR HOUSE SOME  
 ONE MOSTLY YOUNG - KID  
 AND LAUGHTERED - THEIR  
 BLOOD DRAINED - JUST BONES  
 NOW  
 PAPA SAM KEEPS ME LOCKED  
 IN THE ATTIC TOO. I WANT  
 GET OUT BUT I LOOK OUT THE  
 ATTIC WINDOW AND WATCH  
 THE WORLD GO BY  
 I FEEL LIKE AN OUTSIDER.  
 I AM AN A DIFFERENT WAVE  
 LENGTH THEN EVERYBODY

- During questioning, Berkowitz said that the "Sam" in the first letter was Sam Carr, his former neighbor.
- Berkowitz claimed that Carr's black Labrador retriever, Harvey, was possessed by an ancient demon, and that it issued irresistible commands that Berkowitz must kill people.
- Berkowitz once tried to kill the dog, but was unsuccessful due to "supernatural interference".

## Command Hallucinations

- On June 12, 1978, he was sentenced to 25 years-to-life in prison for the murders, making his maximum term 365 years.

### Frequency of Command Hallucinations

(10 Studies)

Group	N	% Auditory	% Command	% Harm Self	% Harm Others	% Benign
Mixed Diagnosis	948	27	44	34	46	24
People with Hallucinations	600	100	58	30	18	9

Barrowcliff & Haddock (2006)

### Relationship Between Hearer and the Voice

- Harm-other commands only
- 32 Participants (all male)
- Forensic population (all psychotic)
- Average duration of illness: 10 years
- Compliance = ever fully complied
  - Compliers = 21
  - Resisters = 11



### Index Offenses



Offense	Percent
Actual bodily harm	26.0
Grievous bodily harm	21.9
Manslaughter	12.5
Attempted murder	9.4
Possession fire arm	6.3
Harassment	3.1
Attempted burglary	3.1
Rape	3.1

### Relationship Between Hearer and the Voice

	Compliers (n=21) %	Resisters (n=11) %
<b>Ever heard voices</b>		
Rarely	4.8	27.3
Sometimes	9.5	18.2
Often	85.7	54.5
<b>Frequency of voices in last episode</b>		
Rare	9.5	18.2
Occasional	28.6	9.1
Often	28.6	9.1
Constant	33.3	63.6
<b>How often voices told you want to do</b>		
Rarely	23.8	54.5
Sometimes	33.3	27.3
Often	42.9	18.2

### Relationship Between Hearer and the Voice

- Factors Associated With Compliance
  - Perception of commanding voice as more powerful
  - Perception of the voice to be of a higher social rank



### CBT Approach

- An empathic, questioning exploration of voices
- Two 'scientists' testing hypotheses
- Avoids pitfalls of collusion and confrontation

### Assessment of Voices

---

#### Assessment of Symptoms/Cognitions

- Properties of Voices
- Frequency and Severity
- Underlying Beliefs about Voices

Beck, Reiner, Stolar & Grant, 2009

### Assessment of Voices

---

#### Functional Assessment

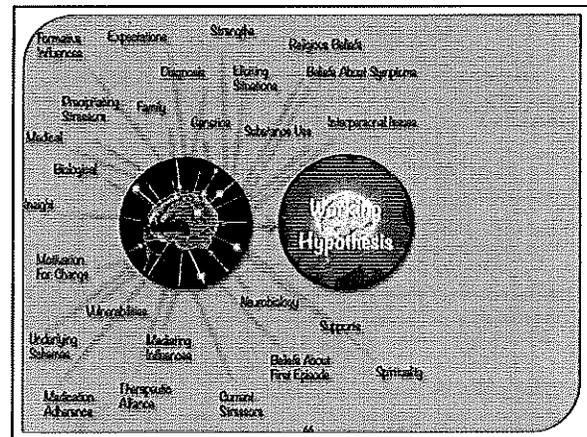
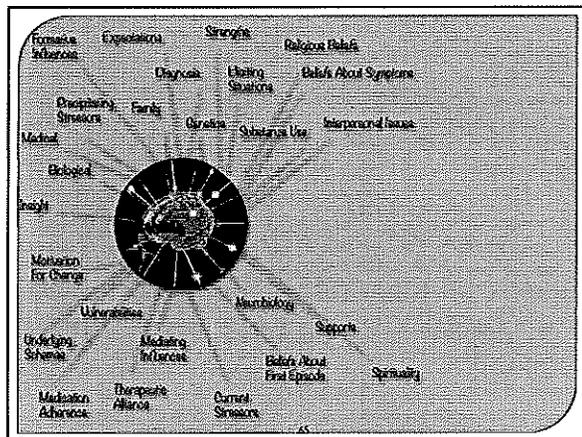
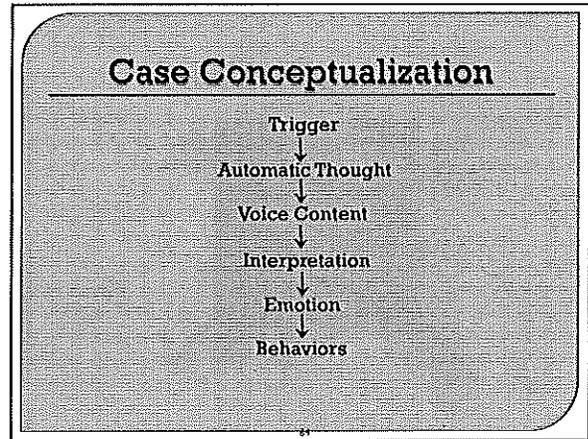
- Monitoring Voices
- Identifying Triggers
- Assessing Emotional and Behavioral Responses to Voices
- Identifying Historical Antecedents and Beliefs/ Appraisals

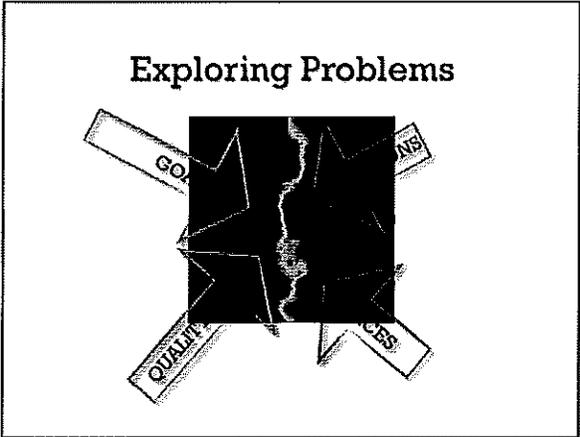
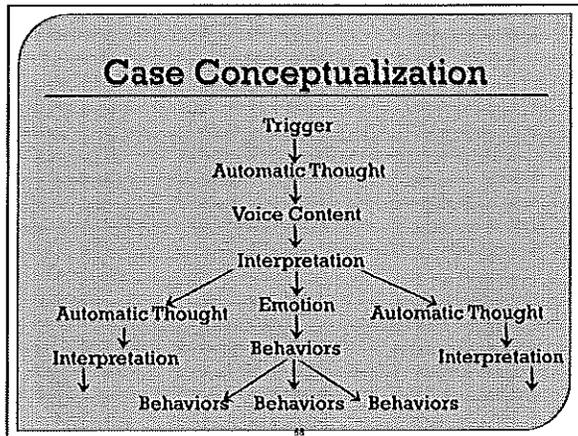
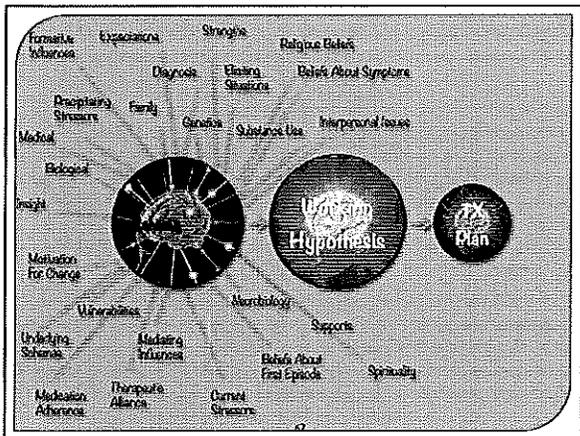
Beck, Reiner, Stolar & Grant, 2009

### Development of the Case Conceptualization

- Identifying Cognitive Factors That Contribute To the Specific Content of The Voices
- Beliefs About The Agency, Meaning, Purpose, and Consequences of The Voices

Beck, Reiner, Stolar & Grant, 2009





### Treatment of Voices

**Providing Psychoeducation and Normalization**

- Educating the consumer on the stress-vulnerability model of voice development

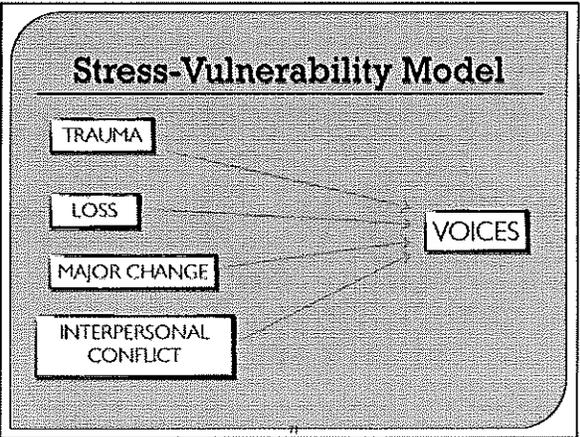
**Socializing The Consumer To The Cognitive Model**

- Developing awareness of the role of appraisals and beliefs in the production of distress around the voices

**Implementing Cognitive and Behavioral Approaches**

- Implementing behavioral strategies
- Targeting of voice content
- Targeting delusional beliefs about voices
- Targeting safety behaviors

Fock, Kertesz, Siskin & Grant 2008



### Normalization

**Accumulates Evidence For Alternate Explanations**

- Analyze Chronology Of Voices

**Precipitating And Triggering Factors:**

- Substance Abuse & Withdrawal
- Sleep Problems
- Fatigue
- Anxiety And Depression
- Suspiciousness
- Interpersonal Conflict

### Coping Strategies

---

**AUDITORY:**

- Humming
- Singing a Song
- Earplugs: Dominant Ear/Both Ears
- White Noise
- Walkman
- iPod
- Walkman

**DISTRACTION:**

- Reading
- Watching TV
- Word or number puzzles
- Play cards or board game
- Color
- Walking
- Exercise
- Crafts
- "Voice time"
- Pets
- Time With Friends

Beck, Reuter, Stolar & Grant, 2004

### Coping Strategies

---

**PHYSICAL ACTIVITY:**

- Increase: Exercise
- Decrease: Relaxation
- Postural Changes: Standing, Sitting, Lying
- Breathing Exercises

**MENTAL ACTIVITY:**

- Meditation
- Thought Stopping
- Prayer

### Use of Coping Strategies

Strategies	Faloon (N=40)	Rommé (N=188)	O'Sullivan (N=40)	Caster (N=100)	Nyaal (N=100)
Music	73	--	38	58	30
Relaxing/ sleeping	73	--	43/45	48/53	43
Talking	48	--	50	57	63
Distraction thoughts	73	24	--	48	39
Lying or walking	63	--	40	--	23
Exercise	55	24	--	43	13
Medication	53	--	48	45	--
Ignoring	--	52	38	40	--
Prayer/ Meditation	--	--	43	43	--

% Used: Shergil, Murry & McGilver (1998)

### Targeting of Voice Content

---

**Exploring The Accuracy of Content**

- Socratic Questioning
- Decrease Distress, Shame, Guilt, Overall Impact

**Modified Daily Thought Record**

- Explore Evidence For and Against
- Binds Emotional Regulation to More "Accurate" Interpretations

**Exploring Historical Basis for Voice Content**

- Voices Frequently Represent Past "Stuck Points"
- Explore Patterns in Source or Content

Beck, Reuter, Stolar & Grant, 2004

### Targeting Delusional Beliefs

**"The Experience of Hallucinations Alone Does Not Lead to Psychosis, But the Development of Delusions About the Voices, Particularly Their Significance, Predicts the Development of Psychosis."**

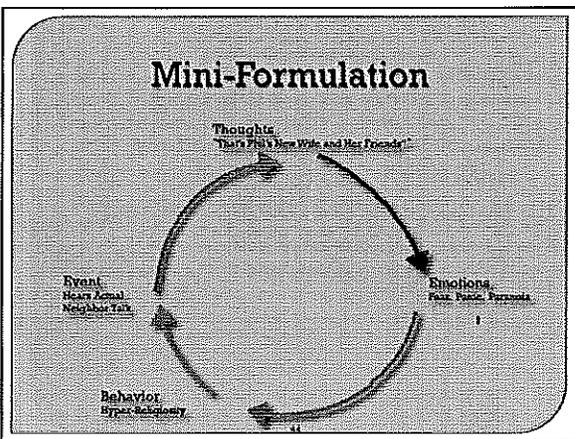
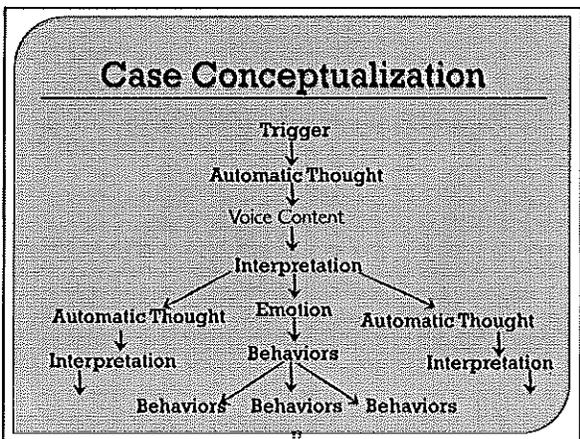
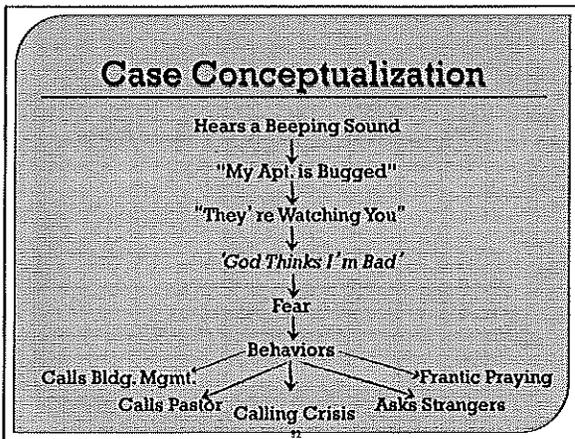
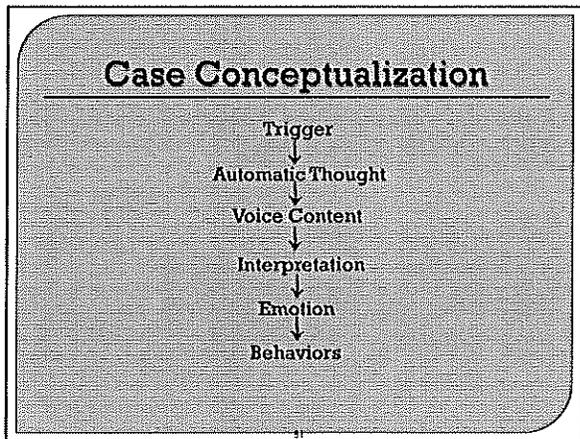
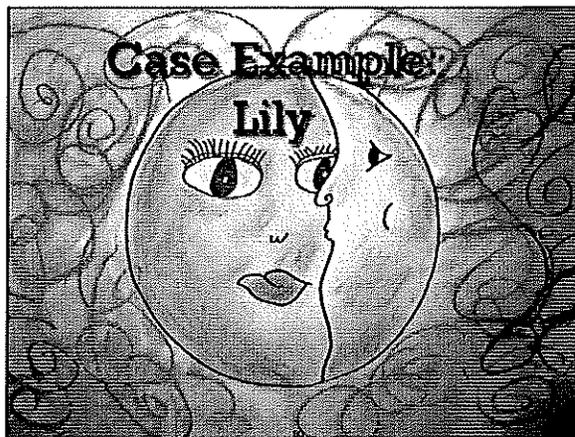
(Van Os & Krabbedam, 2004)

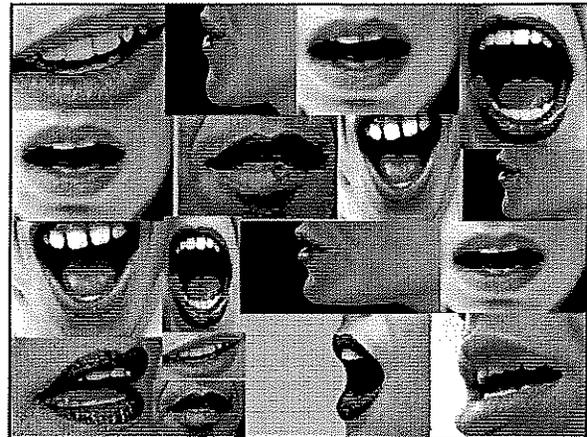
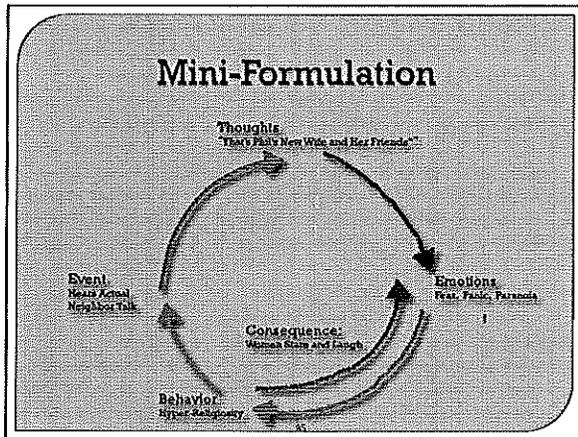
### Delusional vs. Non-Delusional Beliefs

### Targeting "Safety Behaviors"

- Maladaptive Overt and Covert Measures to Reduce Voice Related Distress
- Strategies Generally Reinforce and Maintain Voices
- Romme & Escher: 65% Not Successful at Avoiding or Escaping
- Frequently Leads to "Rebound Effect" Similar to Attempts to Suppress Ordinary Thoughts

Beck, Reuter, Solaz & Grand, 2009  
Morrison, 2001





You could call me insane  
Walkin' 'round with all these whispers  
Runnin' 'round here in my brain  
I just can't help but hear 'em  
Man, I can't avoid it



I hear voices  
I hear voices like  
My dad sayin' work that job  
But don't work your life away  
Mama tellin' me to drop some cash  
In the offering plate on Sunday  
And granddad sayin' you can have a few  
But don't ever cross that line  
Yeah I hear voices all the time

Turns out I'm pretty dang lucky  
For all that good advice  
Those hard to find words of wisdom  
Holed up here in my mind  
And just when I've lost my way  
Or I got to many choices  
I hear voices

Chris Young "Voices"

### Web Resources

- The National Empowerment Center  
<http://www.power2u.org/index.html>
- Hearing Voices Network, USA <http://www.hearingvoicesusa.org/reading-list.html>
- Making Common Sense of Voices  
[www.peter-lehmann-publishing.com/articles/others/klafki\\_making.htm](http://www.peter-lehmann-publishing.com/articles/others/klafki_making.htm)
- National Alliance on Mental Illness  
[www.nami.org](http://www.nami.org)

### Illustrative References

- Barrowcliff, A.L. & Haddock, G. (2006) The relationship between command hallucinations and factors of compliance: A critical review of the literature. *The Journal of Forensic Psychiatry and Psychology*, 17 (2), 266-298.
- Beck, A.T., Rector, N.A., Stolar, N. & Grand, P. (2005) *Schizophrenia: Cognitive Theory, Research and Therapy*. New York: The Guilford Press
- Gladwick, P. & Birchwood, M.J. (1995) The omnipotence of voices II. The Belief About Voices Questionnaire (BAVO). *British Journal of Psychiatry*, 166 (4), 713-716.

### Illustrative References

- Chang, J.S., Yi, J.S., Ahn, Y.M., Kim, J.H. & Kim, Y.S. (2008) Substitution of the internal structure of persistent auditory verbal hallucinations in schizophrenia. *The Royal Australian and New Zealand College of Psychiatrists*, 43, 214-231.
- Fletcher, P.C. & Frith, C.D. (2009) Perceiving is believing: A Bayesian approach to explaining the positive symptoms of schizophrenia. *Nature Reviews Neuroscience*, 10 (Jan), 49-58.
- Haddock, G., McCarron, J., Tarrier, N. et al (1998) Scales to measure dimensions of hallucinations and delusions: The psychotic symptom rating scales (PSYRATS). *Psychological Medicine*, 28, 673-684.

## Illustrative References

- Key, S.R., Opler, L.A. & Landenmayer, J.P. (1988) Reliability and validity of the Positive and Negative Syndrome Scale for schizophrenics. *Psychiatry Research*, 23(1), 99-110.
- Morrison, A.P., Wells, A. & Nothard, S. (2000) Cognitive factors in predisposition to auditory and visual hallucinations. *British Journal of Clinical Psychology*, 39(Pt. 1), 67-78.
- Oulis, P.G., Mavreas, V.G., Mamounas, J.M. & Stefanis, C.M. (1995) Clinical characteristics of auditory hallucinations. *Acta Psychiatrica Scandinavica*, 92, 97-102.
- Overall, J.E. & Gorham, D.R. (1962) The Brief Psychiatric Rating Scale. *Psychological Reports*, 10, 799-812.

## Illustrative References

- Fector, N.A. & Seeman, M.V. (1992) Auditory hallucinations in women and men. *Schizophrenia Research*, 7, 233-236.
- Kenlbach, U., Bleich, S., Mainzhofer, C., Kornhuber, J. & Sperling, W. (2007) Specific and unspecific auditory hallucinations in patients with schizophrenia: A magnetoencephalographic study. *Neuropsychobiology*, 65, 83-96.
- Reynolds, N. & Scragg, P. (2010) Compliance with command hallucinations: The role of power in relation to the voice and others. *Journal of Forensic Psychiatry and Psychology*, 21 (1), 121-133.

## Illustrative References

- Rounsie, M.A.J. & Escher, A.D. (1985) Hearing Voices. *Schizophrenia Bulletin*, 115 (7) 209-216.
- Sorkin, A., Weisshard, D. & Peled, A. (2008) The distortion of reality perception in schizophrenia patients, as measured in Virtual Reality. *Studies in Health Technology and Informatics*, 473-490.
- Shergil, S.S., Murray, M. & McGuire, P.R. (1998) Auditory hallucinations: A review of psychological treatments. *Schizophrenia Research*, 31, 137-150.
- World Health Organization (1974) The international pilot study of schizophrenia. *Schizophrenia Bulletin*, 11, 21-34.

## Illustrative References

- Wright, J.W., Turkington, D., Kingdom, D.G., & Basco, M. (2009) *Cognitive - Behavior Therapy for Severe Mental Illness*. Washington, D.C. American Psychiatric Publishing, Inc.