We’re Living in a Worried World
Political Events
Terrorism

Global Warming

[Graph showing terrorist incidents worldwide]
What Exactly is Anxiety?

- A normal, adaptive emotional state
- Facilitates response to a perceived threat
- Physiological, cognitive, behavioral components
- Organizes perception, memory, & action

Meet C. Elegans

- Small nematode worm
- Natural habitat: soil
- Length: ~1 mm
- Food: E.Coli
- Life cycle: ~3 days
- Cellular structure: ~1000 eukaryotic cells, 300 neurons
- First multi-cellular organism to have its genome sequenced
Sydney Brenner (1927 - )

- South African biologist
- D.Phil. from Oxford
- Molecular biologist with Salk Institute
- Nobel Prize in 2002
- Discovered mRNA; Employed C. Elegans to study genetics and cellular development.

First Complete Genetic Map

- 100 million base pairs
- ~20,000 genes

A Simple Nervous System

Nervous system consists of 302 neurons that form a small-world network
Their interconnections have been completely mapped out
Cognition, Emotion & Behavior (Kendall)

- **Cognitive deficiencies**
  Associated with externalizing behavior and limited emotional distress

- **Cognitive distortions**
  Associated with internalizing behavior and greater emotional distress

Parents, Parenting & Child Anxiety

- Family/parenting styles (inconsistent findings)
- Mothers (intrusive involvement in situations with negative affect)
  (Hudson, Comer & Kendall, 2008)
- Fathers (limited risk-taking play behavior; unpredictable, punitive, explosive)
  (Bogels et al, 2007; Hughes, Furr, Sood, Barmish, & Kendall, 2009)
What Do Children Worry About?

Five Factor Model (Ollendick, 1983)

1. Failure & Criticism
2. Unknown
3. Injury & Small Animals
4. Danger & Death
5. Medical Fears

Developmentally Appropriate Fears

1. Infancy: Separation, strangers
2. Early childhood: Loud noises, dark, doctors, animal
3. Middle childhood: Frightening events (Scary movies)
4. Adolescence: New experiences, social rejection

Normal Fears of Childhood
Normal Fears of Teens

The Essence of Anxiety

- Fearful Anticipation
- Rumination, Worry
- Vigilance
- Autonomic Arousal
- Avoidance

Anxious Children Tend To:

1. Experience their moods more intensely
2. Demonstrate poor affect regulation
3. Feel they are unable to manage situations
4. Show inappropriate emotional expression
5. Be viewed as labile, inflexible, negative
Epidemiology

- 5-18% of all children and adolescents
- 80% of adults with anxiety disorders report anxiety symptoms prior to 18 yrs
- High levels of comorbidity
- Increased risk of anxiety, substance abuse, and depression in adulthood
- Impaired academic, social, family functioning

Epidemiology

- GAD 2-5%
- Social Anxiety 3-18%
- Selective Mutism >1%
- Specific Phobias 3-20%
- Separation Anxiety 3-5%
- Panic 1%
- PTSD 6%
- OCD 1-4%

Comorbidity: Number of diagnoses in an anxiety disordered sample

![Graph showing comorbidity rates for different diagnoses.](image)
5. **Cognitive Specificity Hypothesis**: Moods and clinical disorders may be distinguished on the basis of cognitive **contents** and **processes**.

**The Anxious Individual**

Cognitive contents incorporate themes of **danger** and **vulnerability**. They view the world as a dangerous place, and feel incapable of preventing or managing these risks. Threats may be physical, social, or psychological. Anxiety serves an adaptive function in preparing the individual to avoid threat.

**Etiology**

- Genetics
- Environment
- Temperament (shy, inhibited, risk averse)
Heritability of Psychiatric Disorders

<table>
<thead>
<tr>
<th>Heritability</th>
<th>Psychiatric Disorder</th>
<th>Other conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>Language, Religion</td>
<td></td>
</tr>
<tr>
<td>20-40%</td>
<td>Anxiety, Depression, Bulimia</td>
<td>Myocardial Infarction, Breast Cancer, Hip Fracture, Personality</td>
</tr>
<tr>
<td>40-60%</td>
<td>Alcohol, Drug Dependence</td>
<td>Blood Pressure, Adult Onset Diabetes, Plasma Cholesterol, Asthma</td>
</tr>
<tr>
<td>60-80%</td>
<td>Schizophrenia, Bipolar Disorder</td>
<td>Weight, Bone Density</td>
</tr>
<tr>
<td>80-100%</td>
<td>Autism</td>
<td>Height, Brain Volume</td>
</tr>
</tbody>
</table>

RDoC Construct-Acute Threat (Fear)

- Domain: Negative Valence
- Construct: Acute threat (Fear)
- Genes: BDNF, SHT, CRF, FKB5, GABAARs, COMT, NMDAR-DAT, CAM kinase (Ca+), MAP kinase (Mitogen Activated Protein Kinase)
- Circuits: Amygdala, Hippocampus, Insula, Hypothalamus, Pons, ANS, Central Nucleus
- Behavior: Freeze, avoid, response inhibition

RDoC Construct-Potential Threat (Anxiety)

- Gene: CRF
- Circuit: Stria
- Physiology: ACTH, Cortisol
- Behavior: Startle
**RDoC Construct-Sustained Threat**
- Gene:
- Circuits: Amygdala, Cingulate, Hypothalamus, Striatum, Caudate, Visual cortex
- Physiology: HPA
- Behavior: Anxious arousal, attentional bias to threat, decreased appetitive behavior, helplessness, punishment sensitivity, perseverative

**Brain Metabolism in OCD**
- Basal Ganglia (Caudate)
- R. Anterior Cingulate
- R Orbitofrontal Cortex

**Learning Theories**
- Classical conditioning (E/RP)
- Operant conditioning (Contingency management)
- Vicarious or observational learning (modeling)
  - Employ all three in understanding and treating anxiety
William James

“The first fact for us… is that some form of thinking goes on.”

Cognitive Concomitants of Anxiety

- Increased Vigilance
- Hypersensitivity to Threat Cues
- Appraisal of Situations as Threatening
- Overlook Safety Cues
- High Standard for Security or “Guarantees”
- Threat-Related Imagery

➢ These serve as clinical targets

Epictetus (55 –135)
The Enchiridion

“What disturbs men’s minds is not events but their judgements on events. Death is nothing dreadful, or else Socrates would have thought it so. No, the only thing dreadful about it is men’s judgement that it is dreadful. When we are hindered, or disturbed, or distressed, let us never lay the blame on others, but on ourselves, that is, on our own judgements….Ask not that events should happen as you will, but let your will be that events should happen as they do, and you shall have peace.”

Epictetus

Milton

“The mind is its own place, and in itself, can make a Heaven of Hell and a Hell of Heaven.”

William Shakespeare

“There is nothing either good or bad, but thinking makes it so.”

Hamlet
Act II, Scene II
The Cognitive Formulation (Reinecke)

\[ \text{Anxiety} = \sum (\text{impending threat}) (\text{impaired coping}) \]

The specific nature of the fear will differ depending upon the perceived threat.

Cognitive Formulation -Salkovskis-

- Increased estimate of likelihood
- Increased estimate of “awfulness”
- Increased perception of responsibility

Making the Diagnosis

- K-SADS-PL
- Anxiety Disorders Interview Schedule for DSM-IV (ADIS-C/P)
Assessing Fears and Anxieties
Observational Methods

- Behavioral Avoidance Tests (BATs)
- Parent / Teacher / Clinician Ratings

Assessing Fears and Anxieties

- Think-aloud procedures
- Thought-listing procedures
- Cartoons with “thought bubbles”
- Fear Thermometer

Assessing Fears and Anxieties
Physiological Methods

- Heart rate
- Sweat index
- Respiration
- Finger pulse volume
Assessing Fears and Anxieties
-Self Report Methods-

- Revised Children’s Manifest Anxiety Scale (RCMAS)
- Fear Survey Schedule for Children (FSSC)
- Scale for Child Anxiety Related Emotional Disorders (SCARED)
- Social Phobia and Anxiety Inventory for Children (SPAI-C)
- Negative Affectivity Self-Statement Questionnaire (NASSQ)
- Spence Children’s Anxiety Scale (SCAS)

Assessment Instrument
Our Favorites

- Multidimensional Anxiety Scale for Children (MASC)
- Pediatric Anxiety Rating Scale (PARS)

Behavioral Interventions

- Develop fear hierarchy
- Relaxation / Controlled Breathing
- Modeling
- Systematic Desensitization
- Exposure, Flooding
- Contingency Management
- Self-Management
Cognitive Interventions

- Mood monitoring (Fear thermometer)
- Problem solving
- Rational Disputation (Distortions, Schema)
- Adaptive Self-Statements
- Contingency management (Efficacy, control)
- Mindful acceptance

Flow With the Current of Life

"By letting it go, it all gets done... But when you try and try, the world is beyond winning."

Lao Tsu

Go With The Flow of the River
Be Like a Stick

Components of Effective Treatment (Kendall)

- Psychoeducation
- Relaxation
- Behavior management (reinforcement)
- Modeling
- Problem Solving
- Exposure

Temple “FEAR” Program

<table>
<thead>
<tr>
<th>F</th>
<th>Feeling frightened?</th>
<th>Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Expecting bad things?</td>
<td>Cognitions</td>
</tr>
<tr>
<td>A</td>
<td>Attitudes &amp; Actions.</td>
<td>Coping</td>
</tr>
<tr>
<td>R</td>
<td>Results &amp; Rewards</td>
<td>Reinforce</td>
</tr>
</tbody>
</table>
Kendall's “Coping Cat”

1. Build rapport, socialize to treatment
2. Identify feelings, distinguish anxiety
3. Identify somatic responses (F-step)
4. Parent session
5. Relaxation exercises, monitor tension
6. Identify thoughts, self talk (E-step)
7. Relaxation and cognitive change (A-step)
8. Self-rating performance, reward (R-step)
9. Parent session
10. Practice FEAR

Perfectionism

Do you believe…

- For every problem there is a single, best solution?
- There's always room for improvement?
- Perfection can and should be pursued, no matter what the cost?
- One should expect the best, and settle for nothing less?

Maniacal Perfectionism

“I'm a maniacal perfectionist. And if I weren't, I wouldn't have this company. .. It's the best rap! Nobody's going to fault me for that. I have proven that being a perfectionist can be profitable and admirable when creating content across the board: in television, books, newspapers, radio, videos. .. All that content is impeccable.”

Martha Stewart (2000)
Being Imperfect… is highly desirable

“Trying to be perfect may be sort of inevitable for people like us, who are smart and ambitious and interested in the world and in its good opinion. At one level it's too hard, and at another, it's too cheap and easy. It requires you mainly to read the zeitgeist of wherever and whenever you happen to be… and be the best of whatever the zeitgeist dictates or requires. When you're clever you can read them and do the imitation required. But nothing important, or meaningful, or beautiful, or interesting, or great ever came out of imitations. The thing that is really hard, and really amazing, is giving up on being perfect and beginning the work of becoming yourself.”

Anna Quindlen (1999)

Perfect Solutions Don’t Exist

- Perfect doesn’t exist, conceptually or in practice
- Perfectionism is highly correlated with both depression and anxiety
- Failure to meet “ideal” standards is associated with stress and guilt
- In a changing world, flexibility and creativity are more valuable than a relentless pursuit of perfection
Intrusive Thoughts

- You just can’t stop the flying monkeys!
- Hail Dorothy!

Worrying is Highly Overrated

1. Many people believe that worrying is a good thing
2. 7 ± 2 Bits of Information
3. Two types—Productive and unproductive
4. Two solutions—Action plan and acceptance

Steven King

Oh no! I’ve got to stop thinking that!

vs.

Buckets of blood at the prom. Cool! I’ll write a screen play!
Does CBT Work?

- Review of 21 RCT’s of CBT for childhood depression and anxiety indicates CBT is the “treatment of choice”


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Does CBT Work?

- Review of 10 RCT’s of CBT for child and adolescent anxiety indicates CBT is effective compared to no-treatment control.


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CBT in the Schools

School-based anxiety interventions are effective compared to control (Mychailyszyn et al., 2013)

- Skills for Social and Academic Success program (Masia Warner et al., 2007)
- FRIENDS program (Lowry-Webster et al., 2001)
- Cool Kids Program (Mifsud & Rapee, 2005)
- Modular CBT for anxious youth (Ginsburg et al., 2012)
Kendall (1994)

- N=47 9-13 years old
- CBT vs. Wait List Control
- Treatment: 16 sessions of Coping Cat
- Respondents: Self-report, parent, teacher
- Measures: ADIS, RCMAS, STAIC, FSSC-R

- Clinically significant improvement; Diagnosis free at 1 year follow-up: 60% vs. 10%


Kendall et al. (1997)
Follow-Up

- N=94 9-13 years old
- CBT vs. Wait List Control
- Treatment: 16 sessions of Coping Cat
- Respondents: Self-report, parent, teacher
- Measures: ADIS, RCMAS, STAIC, FSSC-R

- Clinically significant improvement; Diagnosis free at 1 year follow-up: 71% vs. 7%


Barrett, Dadds & Rapee (1996)
Griffith University Study

- n=79 7-14 years old
- Separation anxiety disorder, overanxious disorder, social phobia
- CBT, CBT + family management; wait list
- Diagnosis free at post-test: 70% vs. 26% of waitlist
- At 12 month follow-up 96% of Comb and 70% of CBT did not meet criteria
  - JCCP 1996 64: 333-342
CAMS Project

- RCT examining the efficacy of CBT, sertraline, and their combination (COMB) against pill placebo (PBO) for the treatment of separation anxiety, generalized anxiety and social phobia in 488 children and adolescents across 6 sites.


CBT Is Acceptable
CAMS Drop Out by Condition

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>COMB</th>
<th>SRT</th>
<th>CBT</th>
<th>PBO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed Study</td>
<td>128</td>
<td>112</td>
<td>134</td>
<td>61</td>
</tr>
<tr>
<td>Dropped Out</td>
<td>12</td>
<td>21</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td>133</td>
<td>139</td>
<td>76</td>
</tr>
</tbody>
</table>

CAMS: PARS change over time
CAMS: Treatment Response

![Bar chart showing treatment response percentages: COMB 81%, CBT 60%, SRT 55%, PBO 24%]

CAMS: 36 Week Follow-Up


What Enhances Improvement?

- Child involvement (Chu & Kendall, 2004; Braswel et al, 1985)
- Therapist “relationship building” strategies (Creed & Kendall, 2005)
- Therapist flexibility (Kendall & Chu, 2000)
- Therapist flexibility associated with increased child involvement (Chu & Kendall, in press)
| **What Not To Do**  
<table>
<thead>
<tr>
<th>(Kendall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Teachy-preachy style</td>
</tr>
<tr>
<td>- Forcing kids to talk about feelings</td>
</tr>
<tr>
<td>- Excessive focus on “tasks”</td>
</tr>
<tr>
<td>- Mechanical self-talk</td>
</tr>
<tr>
<td>- Tension and upset about scheduling</td>
</tr>
<tr>
<td>- Create an aversive context</td>
</tr>
<tr>
<td>- “Wimpy” role-plays or exposure tasks; go big or go home!</td>
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</table>

<table>
<thead>
<tr>
<th><strong>What we don’t know</strong></th>
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<tbody>
<tr>
<td>- Proper role for parents in treatment</td>
</tr>
<tr>
<td>- Mechanisms of change</td>
</tr>
<tr>
<td>- How to help treatment nonresponders</td>
</tr>
<tr>
<td>- Active components of the program</td>
</tr>
<tr>
<td>- Effective methods for dissemination</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>“Sure CBT works, but so did main frame computers”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Zinbarg (2015)</td>
</tr>
</tbody>
</table>
**Basic CBT Model**

- Trigger → Automatic Negative Thought → Anxiety → Avoid → Relief
- Hypervigilance, interpretation bias
- Schema/Fear Network
- Relaxation
- Arousal
- Cognitive Restructuring, Acceptance
- Exposure, Acceptance

**Shortcomings of CBT**

- 40 to 50% of those who complete treatment don’t experience clinically significant improvement.
- 25-30% of patients decline treatment.
- 15-20% of patients discontinue treatment.
- CBT homework compliance often is low.
**Additional Shortcomings**

- Multiple sessions, time-consuming, expensive
- Attention to context; Treats the patient in an interpersonal vacuum
- Dissemination barriers, including multiple protocols
- Most patients don’t seek treatment

**Recent Advances**

- CBT APPs (real-time help)
- Motivational Interviewing
- Inhibitory Learning (Craske, 2006)
- Adjunctive Medications (D-cycloserine)
- Cognitive Reappraisal (McRae et al., 2011)
- Cognitive Bias Modification (Hallion & Ruscio, 2011)

**Anxiety - A deficit in Inhibition**

Craske

Anxiety disorders characterized by:

- Elevated excitatory learning, amygdala activation  
  (Lissek et al., 2005; Craske et al., 2008; Milad et al., 2009)

- Deficits in inhibitory learning, deficits in vmPFC  
  (Lissek et al., 2005; Craske et al., 2008; Jovanovic et al., 2010; Milad et al., 2009)

- Deficits in safety learning  
  (Craske et al., 2009; Craske et al., 2012; Liao & Craske, 2012)

- What are the clinical applications? How do we use this?
**What Can Be Done?**

**Improve Inhibitory Learning by Violating Expectations**

- Mismatch between expectancy and outcome, violation of expectancy by surprise (Rescorla & Wagner, 1974)

  ✓ The more the expectancy can be aroused and violated, the greater the learning

  ✓ “Always be open to the power of the unexpected!”

  ✓ How can you do this with your patients? Clients?

---

**Craske Inhibitory Learning Paradigm**

To strengthen inhibitory learning:

1. Violate expectancies
2. Wean safety cues and behaviors
3. Consolidate learning
4. Teach inhibitory regulation; affect labeling
5. Increase variability of stimulus and emotion
6. Consolidation scheduling
7. Change context, offset retrieval cues

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**Shantideva (685-763)**
Shantideva

“For as long as space remains, and as long as sentient beings remain, until then may I too remain to dispel the suffering of others.

If you can solve your problem, then what is the need of worrying?

If you cannot solve it, then what is the use of worrying?

What need is there to say more?”

The Elephant of the Mind

Wandering where it will, the elephant of the mind, Will bring us down to unrelenting pains of deepest hell.

No worldly beast, however wild or crazed, Could bring upon us such calamities.

If, with mindfulness’ rope, The elephant of the mind is tethered all around, Our fears will come to nothing, and Every virtue drop into our hands.
The Elephant of the Mind

By simple binding of this mind alone,
All these things are likewise bound.
By simple taming of this mind alone,
All these things are likewise tamed.

For all anxiety and fear,
All sufferings in boundless measure,
Their source and wellspring is the mind itself,
Thus the Truthful One has said.

Summary...
What Works

- Keep in mind that anxiety works for you
- Think clearly. Keep problems in perspective
- Approach the things you fear
- Exposure, Exposure, Exposure
- Active problem solving, solution-focused thinking
- Balance active coping with mindful acceptance
- Take the long view, the larger view
- Live with faith, hope, and equanimity

Keep Calm and Carry On
LITTLE WAYS TO KEEP CALM AND CARRY ON

TWENTY LESSONS FOR MANAGING WORRY, ANXIETY, AND FEAR

MARK A. RINECKE, PH.D.