The Awakened Brain:
From Greed, Hatred, and Heartache
To Gladness, Peace, and Love

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Topics

- Three evolving neural systems: Avoid, Approach, Attach

- Two modes for each system:
  - Responsive (replenishing)
  - Reactive (expending)

- The negativity bias and threat reactivity

- Stimulating and strengthening Responsive
Three Evolving Neural Systems:
Avoid, Approach, Attach
Three Goal-Directed Systems Evolved in the Brain

- **Avoid** “sticks,” threats, penalties, pain

- **Approach** “carrots,” opportunities, rewards, pleasure

- **Attach** to “us,” proximity, bonds, feeling close

Although the three branches of the vagus nerve loosely map to the three systems, the essence of each is its **aim**, not its neuropsychology.

Each system can draw on the other two for its ends.
Love and the Brain

- Social capabilities have been a primary driver of brain evolution.

- Reptiles and fish avoid and approach. Mammals and birds *attach* as well - especially primates and humans.

- Mammals and birds have bigger brains than reptiles and fish.

- The more social the primate species, the bigger the cortex.

- Since the first hominids began making tools ~ 2.5 million years ago, the brain has roughly tripled in size, much of its build-out devoted to social functions (e.g., cooperative planning, empathy, language). The growing brain needed a longer childhood, which required greater pair bonding and band cohesion.
The Responsive Mode
What is the nature of the brain when a person is:

- Experiencing inner peace?
- Self-actualizing?
- Enlightened (or close to it)?
Home Base of the Human Brain

When not threatened, ill, in pain, hungry, upset, or chemically disturbed, most people settle into being:

- **Calm** (the Avoid system)
- **Contented** (the Approach system)
- **Caring** (the Attach system)
- **Creative** - synergy of all three systems

This is the brain in its *responsive* mode.
Responsive Mode

![Responsive Mode Diagram](image)
## Responsive Mode

<table>
<thead>
<tr>
<th></th>
<th>View</th>
<th>Action</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid</strong></td>
<td>Resources, challenges-in-context</td>
<td>Govern/restrain, truth-to-power,</td>
<td>Strength, safety, peace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>forgive</td>
<td></td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Sufficiency, abundance, disenchantment</td>
<td>Aspire, give, let go</td>
<td>Glad, grateful, fulfilled, satisfied</td>
</tr>
<tr>
<td><strong>Attach</strong></td>
<td>Connection, belonging, social supplies</td>
<td>Open to others; join; be empathic, compassionate, kind, caring; love</td>
<td>Membership, closeness, friendship, bonding loved and loving</td>
</tr>
</tbody>
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The Reactive Mode
But To Cope with Urgent Needs, We Leave Home . . .

With activations of the three systems:

- **Avoid**: When we are threatened or harmed
- **Approach**: When we can’t attain important goals
- **Attach**: When we feel isolated, disconnected, unseen, unappreciated, unloved

This is the brain in its *reactive* mode of functioning - a kind of inner homelessness.
The Reactive Triangle

- Approach
- "Greed"
- Ignorance
- Suffering
- "Hatred"
- Avoid
- Heartache
- Affiliate
The urgency of survival needs have made the *reactive* mode very powerful in the *rapidity*, *intensity*, and *inflexibility* of its activations.
# Reactive Mode

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<tr>
<td><strong>Avoid</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harms present or lurking</td>
<td>Fight, flight, freeze</td>
<td>Fear, anger, weakness</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scarcity, loss, unreliability, not expected rewards</td>
<td>Grasp, acquire</td>
<td>Greed, longing, frustration, disappointment</td>
</tr>
<tr>
<td><strong>Attach</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated, being “beta,” devalued</td>
<td>Cling, seek approval, reproach</td>
<td>Loneliness, heartbreak, envy, jealousy, shame</td>
</tr>
</tbody>
</table>
Reactive Dysfunctions in Each System

- **Approach** - Addiction; over-drinking, -eating, - gambling; compulsion; hoarding; driving for goals at great cost; spiritual materialism

- **Avoid** - Anxiety disorders; PTSD; panic, terror; rage; violence

- **Affiliate** - Borderline, narcissistic, antisocial PD; symbiosis; *folie a deux*; “looking for love in all the wrong places”
The Negativity Bias and Threat Reactivity
A key component of the Reactive mode is a focus on scanning for, reacting to, storing, and retrieving negative stimuli: the negativity bias.
Negativity Bias: Causes in Evolution

- “Sticks” - Predators, natural hazards, social aggression, pain (physical and psychological)

- “Carrots” - Food, sex, shelter, social support, pleasure (physical and psychological)

During evolution, avoiding “sticks” usually had more impact on survival than approaching “carrots.”

- **Urgency** - Usually, sticks must be dealt with immediately, while carrots allow a longer approach.

- **Impact** - Sticks usually determine mortality, carrots not; if you fail to get a carrot today, you’ll likely have a chance at a carrot tomorrow; but if you fail to avoid a stick today - whap! - no more carrots forever.
With the negativity bias, the Avoid system hijacks the Approach and Attach systems, inhibiting them or using them for its ends.
Negativity Bias: Physiology and Neuropsychology

**Physiology:**
- Greater bodily arousal to negative stimuli
- Pain is produced anywhere; pleasure is circumscribed.

**Neuropsychology:**
- Separate, low-level systems for negative and positive stimuli
- Right hemisphere specialized for negative stimuli
- Greater brainwave responses to negative stimuli
- ≈ 65% of amygdala sifts for negative stimuli
- The amygdala-hippocampus system flags negative experiences prominently in memory: *like Velcro for negative experiences but Teflon for positive ones.*
- More negative “basic” emotions than positive ones
Negativity Bias: Attention and Learning

- Negative stimuli command more attention.
  - They’re less common and thus more informative.
  - They’re perceived more easily and quickly.
  - Reaction times are faster for angry faces than happy ones.
  - Empathy is elicited more for negative experiences.

- In nature: multiple chances to learn how to approach rewards, but no chance for trial-and-error learning about dangers.
  - Learning based on punishments is generally faster.
  - Strong dislikes are acquired more quickly than strong likes.
Negativity Bias: Consequences (1)

- Negative beats positive head to head:
  - “Endowment effect,” “prospect function,” “loss aversion”: People will do more to avoid a loss than to acquire a gain.
  - Immorality contaminates more than morality elevates.
  - “Pariahs” contaminate more than “saints” elevate.

- Negative beats positive in combination:
  - Negative information about a person shapes opinions most.
  - It’s easy to create learned helplessness, but hard to undo.
  - In health, parenting, and relationships, absence of negative generally matters more than presence of positive.
Negativity Bias: Consequences (2)

- Negative is more differentiated:
  - There are more words for negative experiences.

- Negative is more alarming than positive is reassuring:
  - Negativity of negative stimuli grows faster with approach in time or space than positivity of positive stimuli.

- Negative vicious cycles:
  - Minimal inhibitory feedback on cortisol
  - Negative social behaviors produce confirming feedback.

- Individual differences in negativity bias: vulnerabilities for reactivity, stress, anxiety, anger, and depression
Negativity Bias: Complications

- Positive events are more common, but negative events are more urgent; our ancestors evolved to handle both.

- When mildly negative and positive stimuli come together, we tend to regard their gestalt as mildly positive. Negative stimuli dominate positive stimuli when both are intense.

- Compensatory processes tilt personal memories in a positive direction over time (so the more time that’s passed, the more positive the memory).

- There’s a positivity bias for positive stimuli that are rare (e.g., heroic acts, exceptional ability).
A Major Aspect of the Negativity Bias: Threat Reactivity

- Two mistakes:
  - Thinking there is a tiger in the bushes when there isn’t one.
  - Thinking there is no tiger in the bushes when there is one.

- We evolved to make the first mistake a thousand times to avoid making the second mistake even once.

- This evolutionary tendency is intensified by temperament, personal history, culture, and politics.

- Threat reactivity affects individuals, couples, families, organizations, nations, and the world as a whole.
Results of Threat Reactivity
(Personal, Organizational, National)

- Our initial appraisals are mistaken:
  - Overestimating threats
  - Underestimating opportunities
  - Underestimating inner and outer resources

- We update these appraisals with information that confirms them; we ignore, devalue, or alter information that doesn’t.

- Thus we end up with views of ourselves, others, and the world that are ignorant, selective, and distorted.
Costs of Threat Reactivity  
(Personal, Organizational, National)

- Feeling threatened feels bad, and triggers stress consequences.
- We over-invest in threat protection.
- The boy who cried tiger: flooding with paper tigers makes it harder to see the real ones.
- Acting while feeling threatened leads to over-reactions, makes others feel threatened, and creates vicious cycles.
- The Approach system is inhibited, so we don’t pursue opportunities, play small, or give up too soon.
- In the Attach system, we bond tighter to “us,” with more fear and anger toward “them.”
Besides its impacts at the personal and organizational level, threat reactivity is a major source of prejudice, oppression, and war.

Reducing threat reactivity is a key way to make this world a better place.
Choices . . .

Or?

Respo
Stimulating and Strengthening the Responsive Mode
Stimulate, Strengthen Responsive Mode


Approach system
- Be glad and grateful.
- Find the sobriety of now; beware the intoxication of anticipation.
- Give over to your best purposes.

Attach system
- Sense suffering in others.
- Access the sense of being cared about.
- Act with unilateral virtue.

Avoid system
- Cool the fires.
- Recognize paper tigers.
- Tolerate risking the dreaded experience.
Let’s explore:
• Taking in the good
• Feeling cared about
• Mindfulness of threats and fear
• Feeling stronger and safer
How to Take in the Good

1. Look for positive facts, and let them become positive experiences.

2. Savor the positive experience:
   - Sustain it for 10-20-30 seconds.
   - Feel it in your body and emotions.
   - Intensify it.

3. Sense and intend that the positive experience is soaking into your brain and body - registering deeply in emotional memory.
Kinds of “Good” to Take in

- The small pleasures of ordinary life
- The satisfaction of attaining goals or recognizing accomplishments - especially small, everyday ones
- Feeling grateful, contented, and fulfilled

- Things are alright; nothing is wrong; there is no threat
- Feeling safe and strong
- The peace and relief of forgiveness

- Being included, valued, liked, respected, loved by others
- The good feelings that come from being kind, fair, generous
- Feeling loving

- Recognizing your positive character traits
- Spiritual or existential realizations
How to Take in the Good

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Feeling Cared About

As we evolved, we increasingly turned to and relied on others to feel safer and less threatened.

- Exile from the band was a death sentence in the Serengeti.
- Attachment behaviors: relying on the secure base
- The well-documented power of social support to buffer stress and aid recovery from painful experiences

Methods:

- Recognize it’s kind to others to feel cared about yourself.
- Look for occasions to feel cared about and take them in.
- Deliberately bring to mind the experience of being cared about in challenging situations.
- Be caring yourself.
Mindfulness of Threats and Fear

- Mindfulness of the negativity bias itself:
  - Primes recognition of threat reactivity in general
  - Fuels correcting of cognitive errors

- Mindfulness alerts us to specific assumptions or exaggerations of threat.

- Through mindfulness, we disidentify from threat appraisals and the reactive cascade.

- Mindfulness draws us into a centered place that feels relatively strong and safe.
Parasympathetic Activation

- Parasympathetic inhibits sympathetic and hormonal arousal.

- Attitude: Regard stressful activation as an affliction.

- Methods for stimulating the parasympathetic nervous system:
  - Multiple, long exhalations
  - Relaxing the tongue
  - Pleasant tastes
  - Relaxing the body

- Get in the habit of rapidly activating a damping cascade when the body gets aroused.

- Regard bodily activation as just another compounded, “meaningless,” and impermanent phenomenon; don’t react to it.
Feeling Stronger and Safer

- Be mindful of an experience of strength (e.g., physical challenge, standing up for someone).

- Staying grounded in strength, let things come to you without shaking your roots, like a mighty tree in a storm.

- Be mindful of:
  - Protections (e.g., being in a safe place, imagining a shield)
  - People who care about you
  - Resources inside and outside you

- Let yourself feel as safe as you reasonably can:
  - Noticing any anxiety about feeling safer
  - Feeling more relaxed, tranquil, peaceful
  - Releasing bracing, guardedness, vigilance
“Taking the Fruit as the Path”

Gladness

Love

Peace
Great Books

See www.RickHanson.net for other great books.

Key Papers - 1

See www.RickHanson.net for other scientific papers.


Key Papers - 2


- Hanson, R. 2008. Seven facts about the brain that incline the mind to joy. In *Measuring the immeasurable: The scientific case for spirituality*. Sounds True.


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