

# Buddha Meets the Neuroscientist: Implications for Restoration of Self After Traumatic Brain Injury

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## Nature of Talk

- Disclaimers
  - No funding conflicts to declare
  - Not a Buddhist
  - Not (really) a neuroscientist
  - Not a flaky talk
- Based on clinical experience; not research
- The concept is the contribution: new ways to think about treatment

## Buddha Meets the Neuroscientist

- Concept of Self and TBI
- Treating TBI as a Disorder of the Self
- The Self: Intersection of Buddhism and Neuroscience
- Implications for Treatment of TBI
- Discussion – Q/A

## Concept of Self and (m)TBI

## THE SELF (I)

That core sense of one's capacities that provides a stable point of reference in negotiating the complex and shifting demands of everyday life.

## THE SELF (II)

Enables predictability: the ability to anticipate the effectiveness of one's potential actions. Guides choices in career, friends, partner, goals, and day to day decisions.

## THE SELF (III)

Provides an inner stability and security, based on self-experience and self-knowledge, which makes possible successful and satisfying work, relationships, enjoyment. Necessary for maintaining a sense of well-being and self-worth.

## THE SELF (IV)

Strength of self varies from person to person. Dependent on genetic and environmental variables. Personality factors. Neurological, biological, and psychological underpinnings. May be fragile and vulnerable in some individuals.

## THE SELF (V)

**Shaken sense of self** often results from MTBI. Sudden change in cognitive capacities despite normal appearance. Unpredictable emotional reactions. Begin to distrust self. Lose sense of predictability, inner stability. Disconnection from old self. Lack of confidence / anxiety affect ability to function optimally.

## THE SELF (VI)

### The Vulnerable Sense of Self after MTBI:

- Outward appearance of normalcy
- Inner experience of chaos
- External invalidation
- Feelings of going crazy
- Shaken sense of self

## Treating (m)TBI as a Disorder of the Self

### **Treating MTBI as a Disorder of the Self**

- **Validation of Self** (Acceptance of Symptoms)  
Validate subjective symptoms
  - Build working relationship
  - Develop new language to reframe
- **Understanding the Self** (Primary vs. Secondary Symptoms)
  - Impairment vs. reaction to impairment
  - What, when, why of breakdowns
  - Intrusion of old issues

## **Treating MTBI as a Disorder of the Self (cont'd)**

- **Re-Establishing an Effective Self** (Gain Control over Symptoms)
  - Compensation
  - Environmental control
  - Surviving panic/anxiety and functioning
  - Redefining Expectations
  - Establishing success (cognitive exercises)
  - Doing what works

## **Treating MTBI as a Disorder of the Self (cont'd)**

- **Reintegration of Self** (Psychotherapy)
  - Resolve intersection of MTBI with old issues
  - Desensitize post-traumatic responses
  - Re-establish family / supports
  - Self-responsibility; stop blaming others/situation

## **Treating MTBI as a Disorder of the Self (cont'd)**

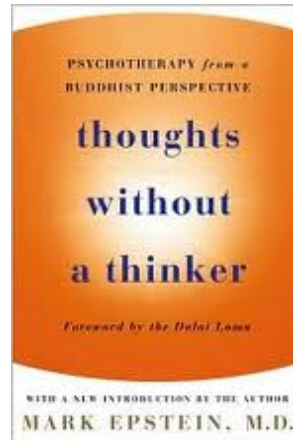
- **Calming the Biological Self** (Medication)
  - Psychological Issues (readiness, self responsibility)
  - Focus: Sleep, antidepressants, anxiolytics, stimulants, neuroleptics, mood stabilizers, cognitive enhancers)
  - Dealing with compliance, consistency, side-effects, dealing with physician
- **Self-Acceptance** (The Final Common Denominator)

## The Self: Intersection of Buddhism and Neuroscience (A Personal Tale)



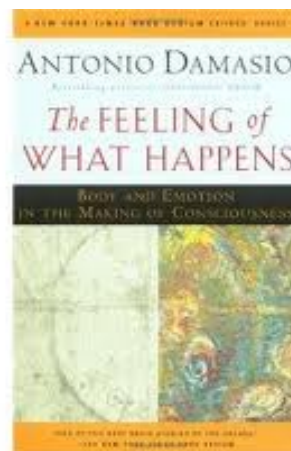
## Thoughts Without a Thinker

- Mark Epstein
- Psychiatrist Private Practice, NYC
- Basic Books, 1995



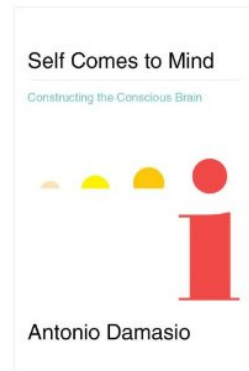
## The Feeling of What Happens

- Antonio Damasio
- Harcourt, 1990
- Professor of Neuroscience, USC
- Director, Brain and Creativity Institute
- University of Iowa, 1976 - 2005



## Self Comes to Mind: Constructing the Conscious Brain

- Antonio Damasio
- Knopf, 2010
- Available 11/9/10 (!)



## A Buddhist Perspective on Self

Epstein, Thoughts without a Thinker

## The Buddha On the Self

All worry about the self is vain; the ego is like a mirage, and all the tribulations that touch it will pass away. They will vanish like a nightmare when the sleeper awakes.

## Epstein on the False (“Small”) Self

It is the tendency of the developing mind to impose a false coherence on itself, to become infatuated with the *image* of self, to grasp for an identity by identifying with something or with nothing, to make the self into something *other* than what it actually is. It is this thirst of certainty, this misapprehension of self, that confuses the mind. (pp. 69-70)

## Epstein: Meditation and the Self (1)

In mindfulness practice, self is experienced as a flow, a process, a rushing and teeming patterning that changes over time.

## Epstein: Meditation and the Self (2)

The most basic self-feelings become the primary focus at this stage of practice, and the closer one looks at them, the more absurd they start to seem. These self-feelings are suddenly revealed to be nothing but *images*: the reflection that had assumed an independent existence in the psyche is seen for what it always was – a metaphor or mirage.

### Epstein: Meditation and the Self (3)

In stripping away people's cravings to have to be *something*, the insight practices actually allow meditators to function in the everyday world unencumbered by the need to protect the false sense of "I."

### Epstein: Meditation and the Self (4)

Self, it turns out, is a metaphor for a process that we do not understand, a metaphor for that which *knows*. The insight practices reveal that such a metaphor is unnecessary, even disruptive. It is enough, these practices reveal, to open to the ongoing process of knowing without imputing *someone* behind it all.

## Epstein: Meditation and the Self (5)

In fact, the distinguishing characteristic of Buddhist meditation is that it seeks to eradicate, once and for all, the conception of self as an entity. In various critical ways, the three major meditative strategies – concentration, mindfulness, and insight – all work to this end.

## Epstein: Meditation and the Self (6)

Meditation is not just about creating states of well-being; it is about destroying the belief in an inherently existent self (the “small” self).

## A Neuroscience Perspective on Self

Damasio, The Feeling of What Happens

### Damasio: Consciousness (1)

Perhaps the most startling idea in this book is that, in the end, consciousness begins as a feeling, a special kind of feeling to be sure, but a feeling nonetheless.

## Damasio: Consciousness (2)

We do not see consciousness or hear consciousness. Consciousness does not smell or taste. Consciousness feels like some sort of pattern built with the nonverbal signs of body states.

## Damasio: Experience of Self (1)

As the brain forms images of an object – such as a face, a melody, a toothache, the memory of an event - and as the images of the object *affect* the state of the organism, yet another level of brain structure creates a swift, non-verbal account of the events that are taking place in the varied brain regions activated as a consequence of the object-organism interaction.



## Damasio: Experience of Self (2)

The mapping of the object-related consequences occurs in first order neural maps representing proto-self and object; the account of the *causal relationship* between object and organism can only be captured in second order neural maps.

## Damasio: Experience of Self (3)

Looking back, and with the license of metaphor, one might say that the swift, second-order nonverbal account narrates a story: *that of the organism caught in the act of representing its own changing state as it goes about representing something else*. But the astonishing fact is that the knowable entity of the catcher has just been created in the narrative of the catching process.

## Damasio: Experience of Self (4)

Most importantly, the images that constitute this narrative flow like shadows along with the objects for which they are providing an unwitting, unsolicited, comment. To come back to the metaphor of movie-in-the-brain, they are *within* the movie. *There is no external spectator.*

## Damasio: Proto-Self

A non-conscious collection of representations of the multiple dimensions of current organism states.

## Damasio: Core Self: “The Feeling of Knowing” (1)

You rise above the sea level of knowing, transiently but incessantly, as a *felt* core self, renewed again and again, thanks to anything that comes from outside the brain into its sensory machinery or anything that comes from the brain’s memory stores toward sensory, motor, or automatic recall.

## Damasio: Core Self: “The Feeling of Knowing” (2)

You know it is *you* seeing the story because the story depicts a character – you – doing the seeing. The first basis for the conscious *you* is a feeling which arises in the re-representation of the *non-conscious proto-self in the process of being modified* within an account which establishes the cause of the modification.

## Damasio: Autobiographical Self (1)

The consequence of that complex learning operation is the development of autobiographical memory, an aggregate of of dispositional records of who we have been physically and of who we have usually been behaviorally, along with records of who we plan to be in the future.

## Damasio: Autobiographical Self (2)

We can enlarge this aggregate memory and refashion it as we go through a lifetime. When certain personal records are made explicit in reconstructed images, as needed, in smaller or greater quantities, they become the *autobiographical self*.

## Damasio: Autobiographical Self (3)

The display of autobiographical self is the more open to refashioning than the core self, which is reproduced time and again in essentially the same form across a lifetime.

... Autobiographical memory grows continuously with life experience but can be partly remodeled to reflect new experiences.

## Damasio: Kinds of Self

### Autobiographical Self

Identification with accumulated personal memories



### Core Self

Awareness of ongoing experience; illusion of a stable self

————— CONSCIOUSNESS —————



### Proto-Self

Neural representation of the state of the organism.

## Damasio: Core Consciousness (Structures)

In short, core consciousness depends most critically on the activity of a restricted number of phylogenetically old brain structures, beginning in the brain stem and ending with the somatosensory and cingulate cortices.

## Damasio: Consciousness (Structures)

### Proto-Self Structures:

Upper brain stem and hypothalamus



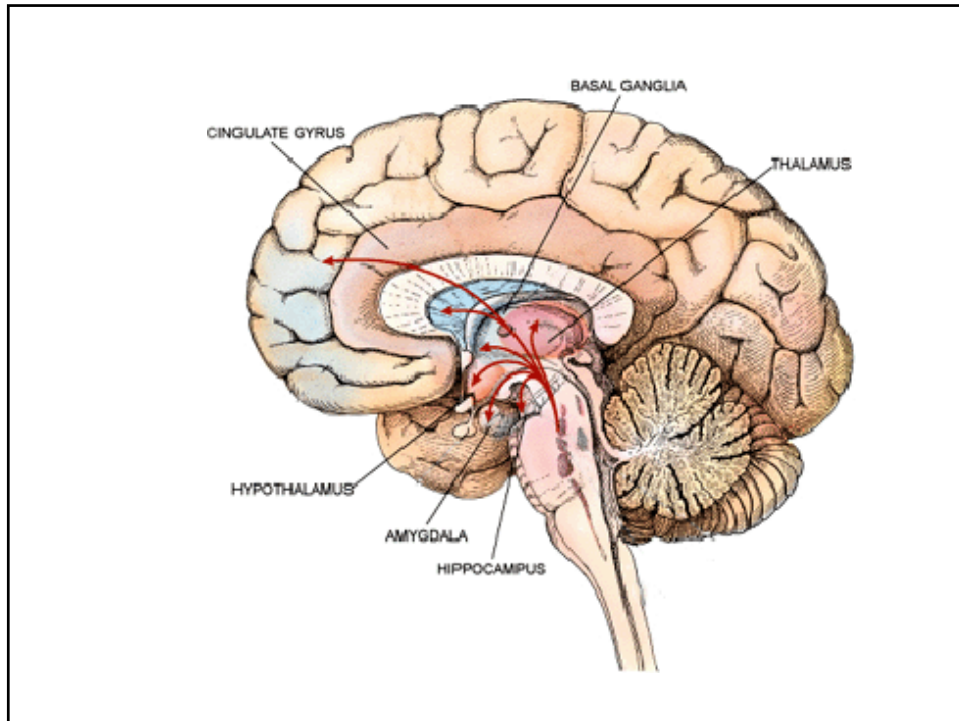
### Second-Order Structures:

Thalamus and cingulate



### Autobiographical Structures:

Temporal and pre-frontal cortices



## Damasio: Core Consciousness (Neural Networks)

None of the functions outlined above is executed at the level of a single neural site or center, but rather, these functions emerge as a result of cross-regional integrations of neural activity.

## Implications for Treatment of TBI

### Topics to Be Discussed (1)

- Damage is to Autobiographical, not Core Self
- Attachment to and Identification with Autobiographical Self Causes Suffering
- Conviction but Illusion that Core Self is Lost
- Need to Mourn Loss of Old Capacities, not Essence of Self



## Topics to Be Discussed (2)

- What should we be doing?
  - Try to restore/rehabilitate old sense of self
  - Try to establish a new, positive sense of self
- Alternative: Promote Detachment from *Identification* with the Autobiographical (“Small”) Self
- Self as Process: “Canoe Therapy”
- Place in a “Community”

## Discussion – Q/A

