

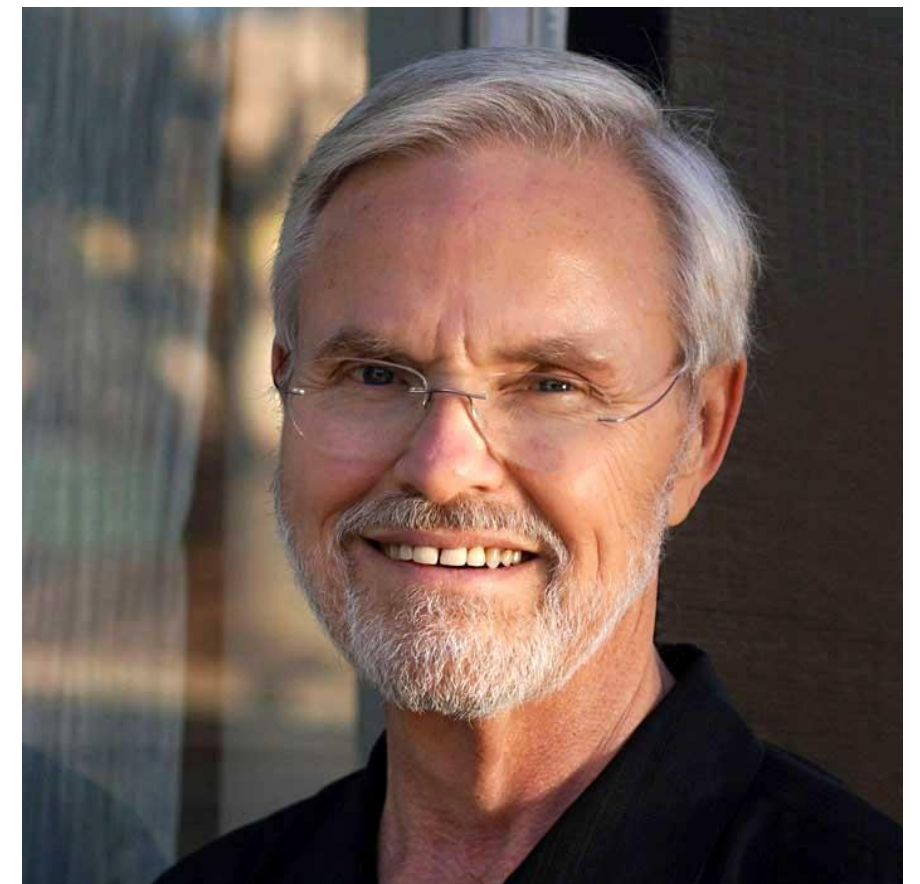
Spirituality Explained



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- My ***forthcoming*** book is entitled,

Spirituality Explained
A Model of Consciousness and Spirituality

- This talk presents a few of the core ideas of that book
- Everything is completely compatible with the **currently** known theories of physics and science
- There are **no** ***"spirits"*** in this explanation of **spirituality!**



Part 1: Spirituality: What, When, and Why?

Part 1: Spirituality: What, When, and Why?	(10 min)
Part 2: Where Do Human Agents Live?	(6 min)
Part 3: The Three Agent Model	(9 min)
Part 4: The Three Agent Block Diagram	(6 min)
Part 5: Agent Self-Models and Goals	(10 min)
Part 6: What is the Problem that Spirituality Fixes?	(4 min)
Part 7: How Does Spirituality Fix the Problem	(11 min)
Part 8: Kinds of Consciousness & Comparisons	(7 min)

See: *www.SpiritualityExplained.com* for more information



What is Spirituality?

- ❑ My Equation is: **Spirituality = Religion – Dogma**
 - ❑ Theistic or Nontheistic
 - ❑ Cultivates: love, compassion, altruism, forgiveness, trust, acceptance, patience, and other positive values
 - ❑ Practices: prayer, meditation or surrender to a higher power
- ❑ This model of consciousness will explain all of this, plus:
 - ❑ The “God” concept for Theistic paths
 - ❑ Why and how spiritual practices work



When and How Did Spirituality Start?

- ❑ Hypothesis: **Spirituality developed around 40K to 100K years ago when human consciousness changed**
- ❑ Because **modern humans live in two worlds:**
 - ❑ The world presented by our senses **PLUS**
 - ❑ A world of concepts, represented by the words of language
- ❑ But **ancient humans lived in only one world**, the world presented by our senses
 - ❑ E.g., In the wild, Chimpanzees have only ~ 30 call signs (words)



The Human Conceptual World

- ❑ The human world of concepts is **much richer** than the sensory world
 - ❑ Modern English has ~ 1 M words
 - ❑ And a concept could be a phrase or even a paragraph!
 - ❑ In addition, 50 M scholarly articles(1) have been published since the 1600s (and 2.5 M more articles are added each year)
 - ❑ If each scholarly article has 10+ new concepts \Rightarrow 500 M concepts!
 - ❑ Add in all the new concepts in law and technology
 - ❑ Finally add all the concepts created in works of fiction
 - ...

(1) JINHA, A. E. (2010), Article 50 million: an estimate of the number of scholarly articles in existence. Learned Publishing, 23: 258–263. doi:10.1087/20100308



Conceptual humans!

- ❑ Overall, we created more than **1 billion concepts** so far!
 - ❑ The great majority of these concepts do not describe objects in the physical/sensory world – they are **abstract concepts**
- ❑ So, **when** did we cross over the threshold from:
 - ❑ Mostly living in the world presented by our senses **to**
 - ❑ Mostly living in the world of abstract concepts represented by the symbols of language?
- ❑ **Hypothesis:** We crossed that threshold around the time of the development of Human “**Behavioral Modernity**”



Behavioral Modernity

- **Behavioral Modernity** developed ~ **40K-100K** years ago:
 - Behavioral Modernity Traits⁽¹⁾ are: ***Burial, fishing, pigments, art, figurines, composite tools, bone tools, blade improvements, clothing, long distance material transport, and catching fast & dangerous prey***
 - This was a relatively rapid transition versus the previous slow behavioral trait evolution

(1) From Wikipedia's article on Behavioral Modernity plus items from the Smithsonian's "Milestones in Human Evolution"



Evolution Of Human Behavioral Traits

First
12 of 24
Behavioral
Traits

Years Ago ⁽¹⁾	Trait
6,000,000	1. Last common ancestor with Great Apes*
2,600,000	2. Basic tools & meat from large animals
1,600,000	3. Hand-axes (persists for 1.2 M years)
800,000	4. Used fires/hearths & brain expands
500,000	5. Modern brain size* & hunting of large animals
400,000	6. Made shelters & invented thrusting spears
250,000	7. Early communication with symbols
200,000	8. Anatomically modern humans*
164,000	9. Collected and cooked shellfish
160,000	10. Prolonged childhood
135,000	11. Made shell beads
130,000	12. Exchanged resources over long distances

(1) See the
Smithsonian's
factsheet on
"Milestones in
Human Evolution"

at <http://newsdesk.si.edu/factsheets/milestones-human-evolution> * = genetic traits



Evolution Of Human Behavioral Traits

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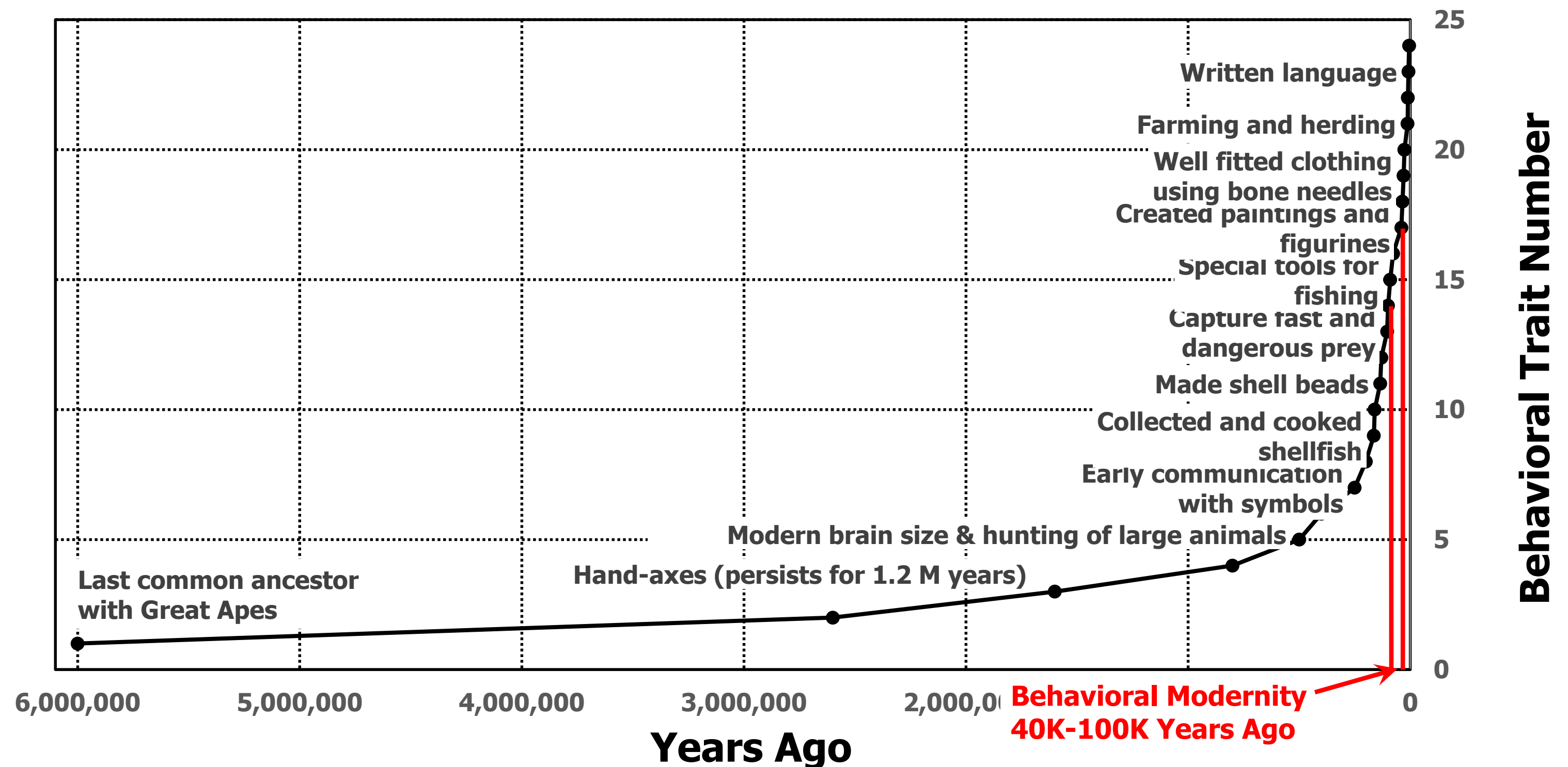
Years Ago ⁽¹⁾	Trait
104,000	13. Capture fast and dangerous prey
100,000	14. Burial of the dead
90,000	15. Special tools for fishing
77,000	16. Clothing by perforating hide
40,000	17. Created paintings and figurines
35,000	18. Created musical instruments
30,000	19. Well fitted clothing using bone needles
26,000	20. Created baskets
12,000	21. Farming and herding
10,500	22. Domesticated plants and animals
8,000	23. Written language
5,000	24. First large civilizations

**Behavioral
Modernity**

at <http://newsdesk.si.edu/factsheets/milestones-human-evolution> * = genetic traits

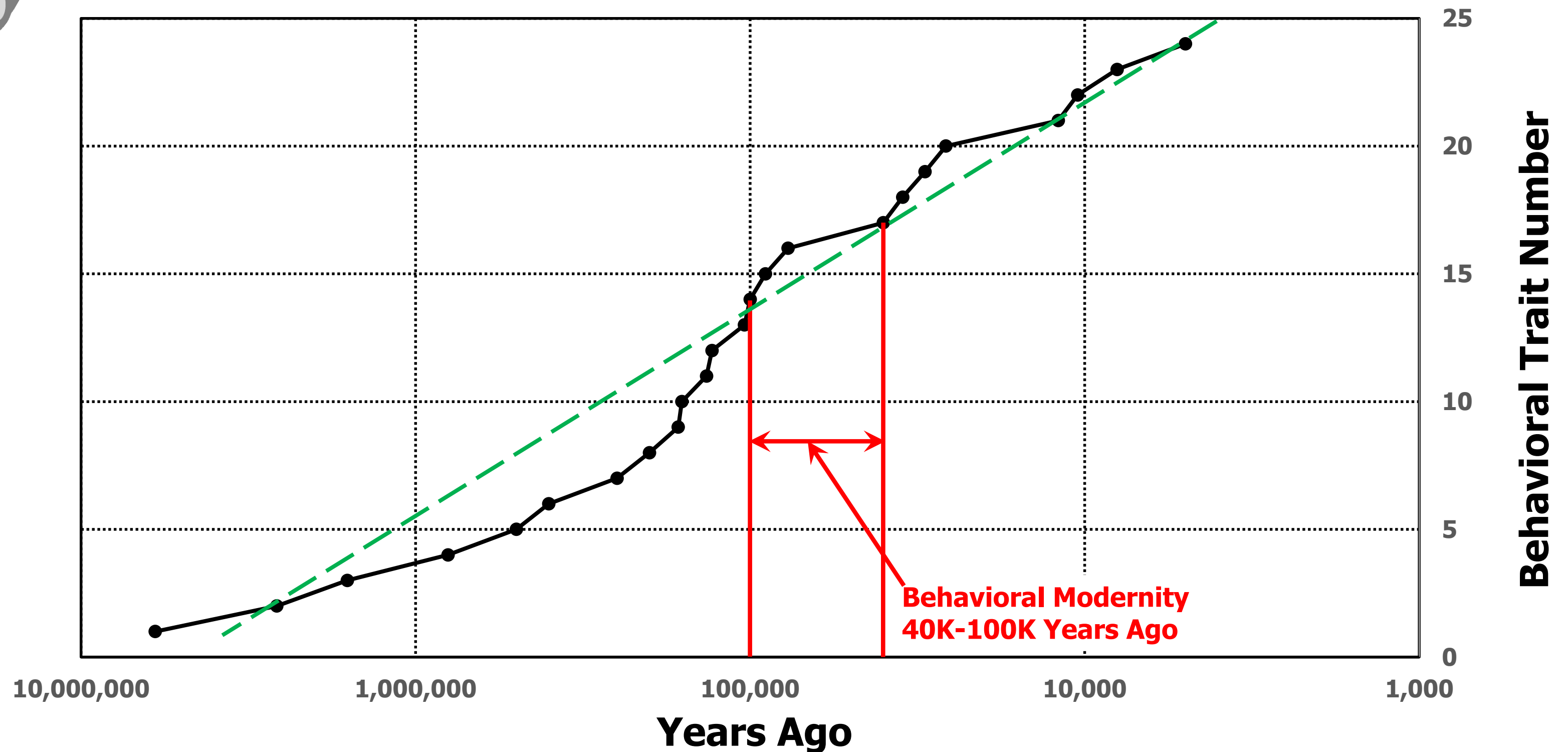


Human Behavioral Traits vs Time





Human Behavioral Traits vs Time



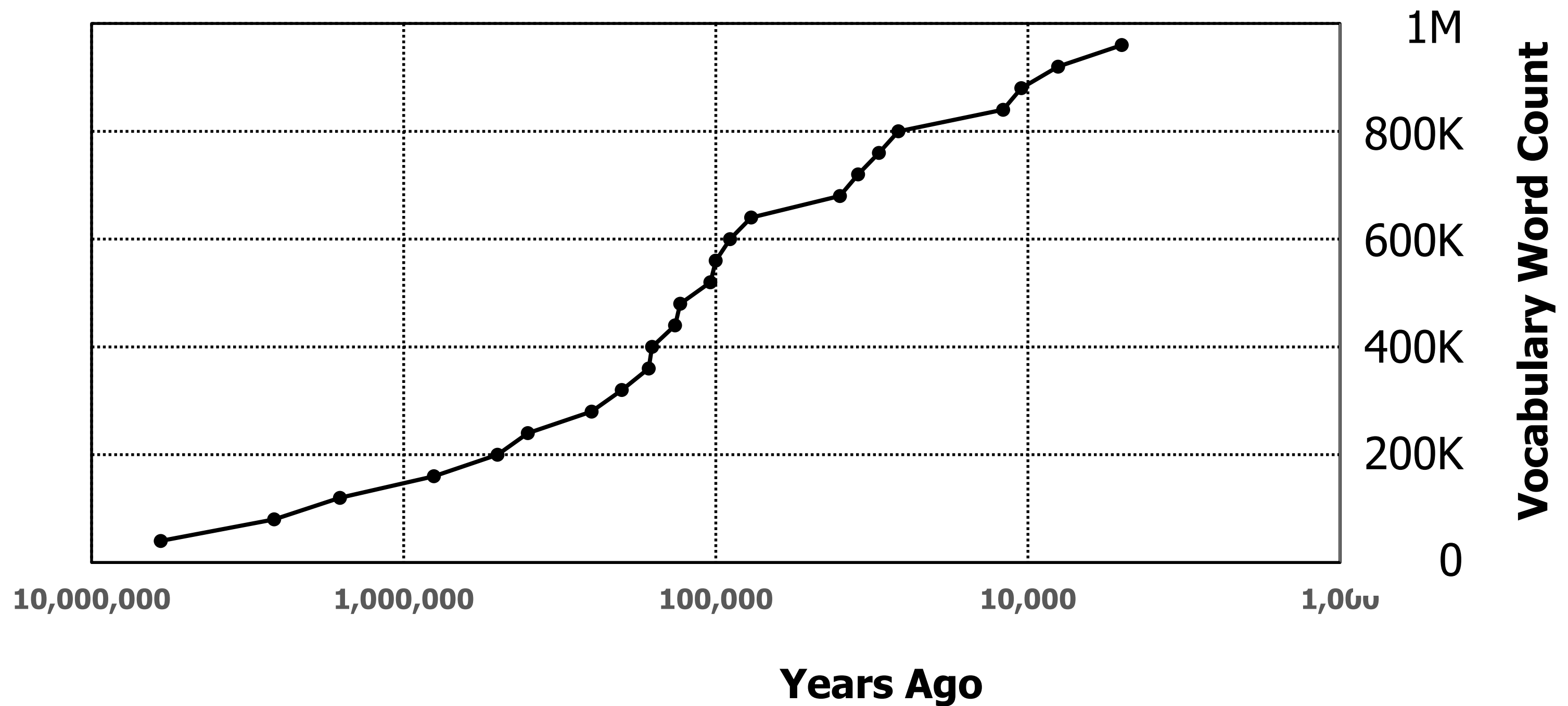


Behavioral Traits and Language

- Clearly, significant human behavioral traits hit a kind of exponential “takeoff” around 40K to 100K years ago.
- **Language** must have also had an exponential “takeoff”?
 - Chimpanzees have approximately **30** verbal call signs
 - The English language now has over **1 million words**



Human Behavioral Traits vs Time



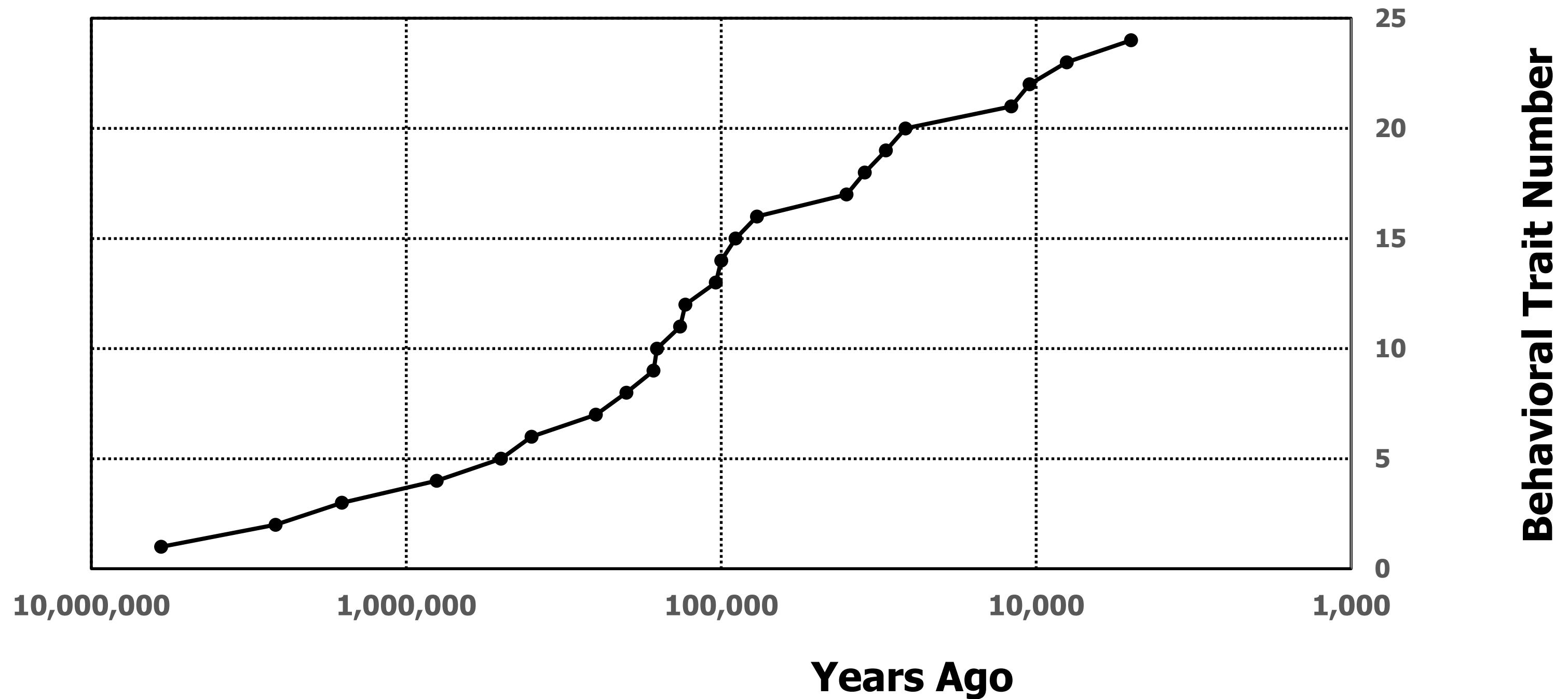


Behavioral Traits and Language

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- **Language** must have also had an exponential “takeoff”?
 - Chimpanzees have approximately **30** verbal call signs
 - The English language now has over **1 million words**
 - Average modern human has ~ **10,000 word** working vocabulary
 - The **2,000** most common words cover 80% of modern usage
- **As a Model:** *Start* with **30** words at **6 M** years ago, *End* with **less** than a **million** words at **5 K** years ago
 - A logarithmic word count scale can be achieved by increasing the vocabulary by a factor of **1.5** at each new behavioral traits

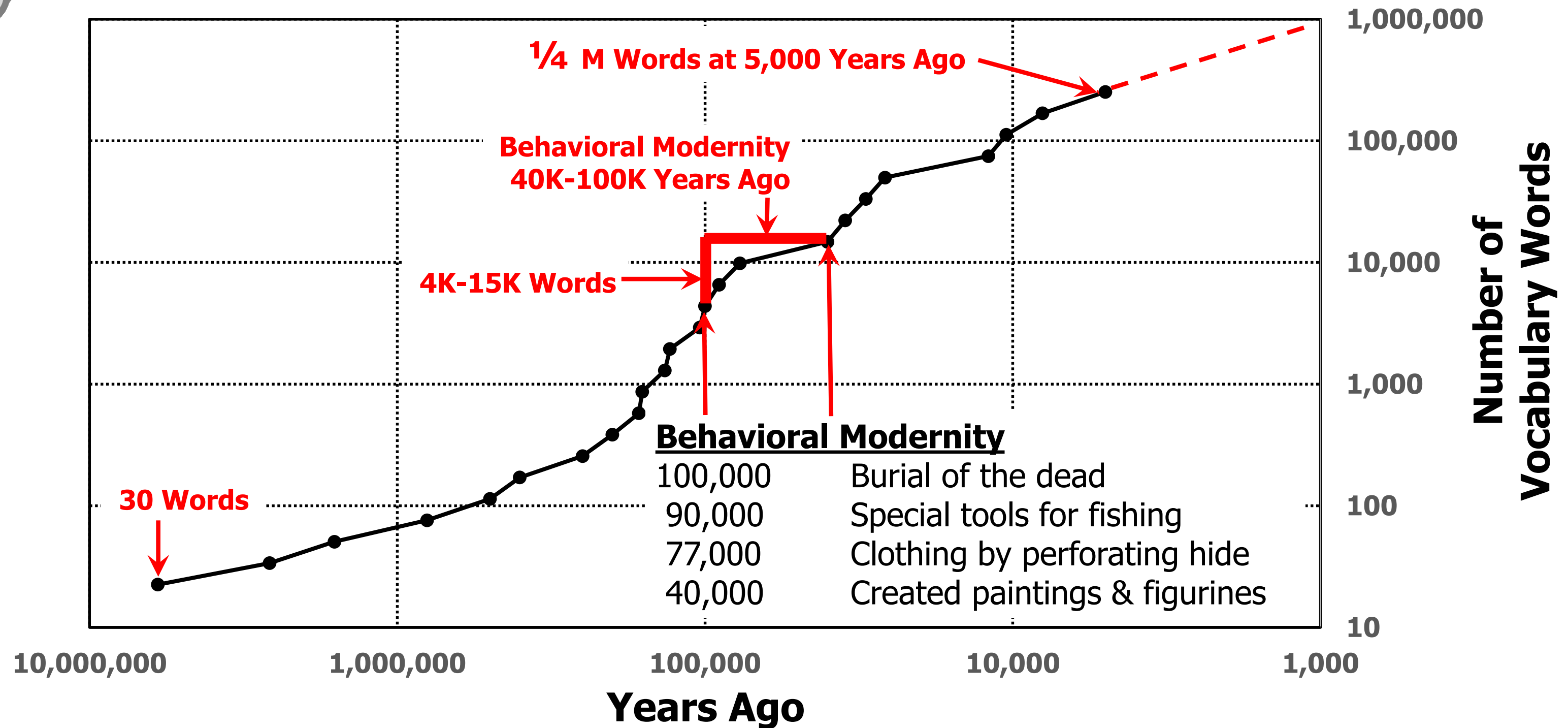


Human Behavioral Traits vs Time





Vocabulary Words vs Time





How did “Who we are” change when our consciousness changed?

- ❑ Ancient humans would have identified with **the body**
- ❑ Modern humans would identify with the **autobiographical self** or **narrative self**, which includes:
 - ❑ My name, my narrative history, my desires and goals, my future plans, who my friends and family are, etc.
 - ❑ I will call this the “**I/Me/My**” (abstract) concept
 - ❑ The use of any these words, **I**, **Me** or **My**, refers to this **self** concept
- ❑ This conceptual world gave us our modern technology and society and is obviously **very useful**. However,
 - ❑ It also caused a **living** problem (especially the I/Me/My concept)
 - ❑ And Spirituality is the **cure** for that problem.



Part 2: Where Do Human Agents Live?

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Agents, Models of the World, and Self-Models

- An **Agent** has goals, a way of sensing the world, and a way to make changes to the world to achieve its goals
 - A human can be considered to be a successful agent
- A theorem⁽¹⁾ from control theory says “**Every Good Regulator of a System Must Be a Model of That System**”
 - I will call this the *Good Regulator Theorem*
 - This means any good agent must have a model of its world
 - In addition, **if** the agent itself is part of the world it is changing, **then** the agent must also contain a model of itself (a self-model)

(1) Conant & Ashby, Int. J. Systems Sci., 1970, vol. 1, No. 2, 89-97,
“Every Good Regulator of a System Must Be a Model of That System”



Do we live in the world directly or do we live in our model of the world?

- Humans are good agents so we must contain a **model of the world** and a model of the ourselves (a **self-model**)
 - World model = a **sensory** and a **conceptual** model
 - Self-model = a sensory **body model** & a conceptual **I/me/my**
- A **body** in a **world** is equivalent to a **body model** in a **model of the world** => no answer to "Where do we live?"
- However, we are also an **I/me/my** abstract concept
 - **Abstract concepts do not exist in the physical world!**
 - So the **I/me/my** can **only** exist in our **language model of the world** – i.e. not in the "**real**" world!
- Therefore we live in our **model of the world!**



Do We Experience the World Directly? OR Do We **Only** Experience Our Model of the World?

Blue Light



Red Light



Green Light



Colors
Exist Only in
Our Model of
the World



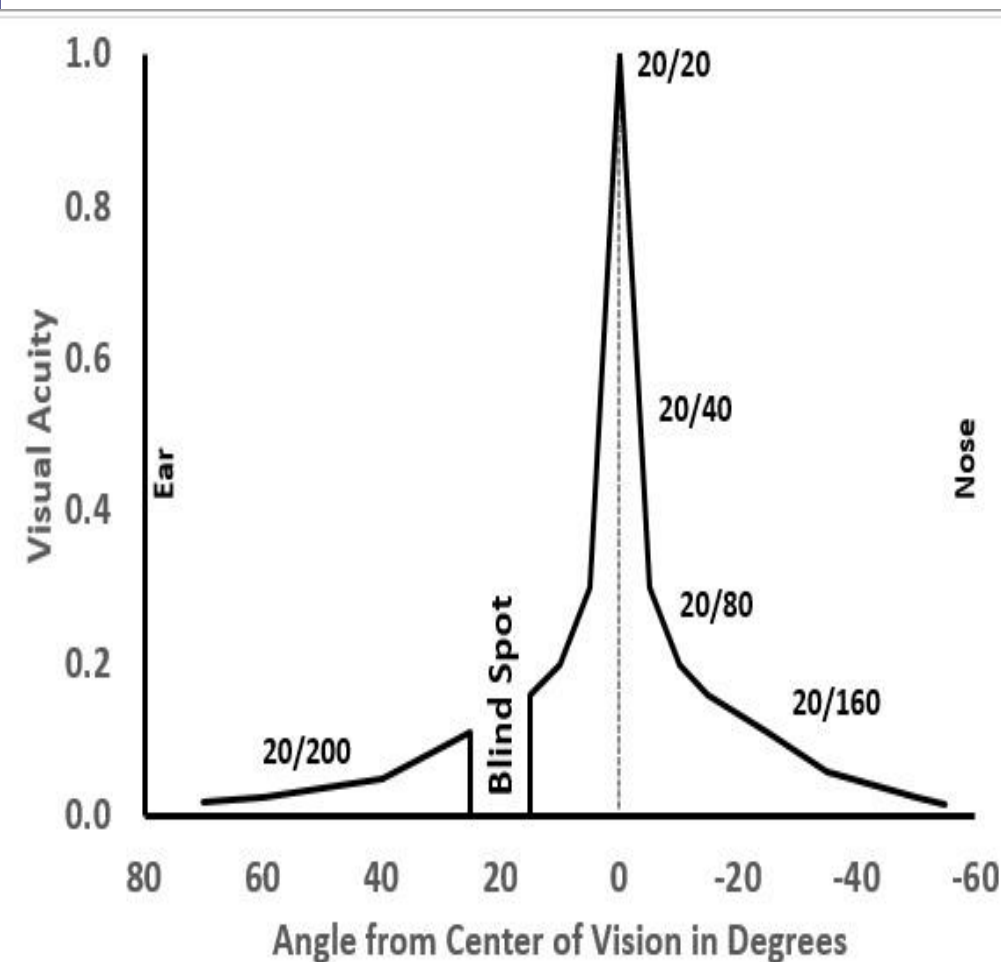


What we **Experience** is **NOT** What we **Perceive**

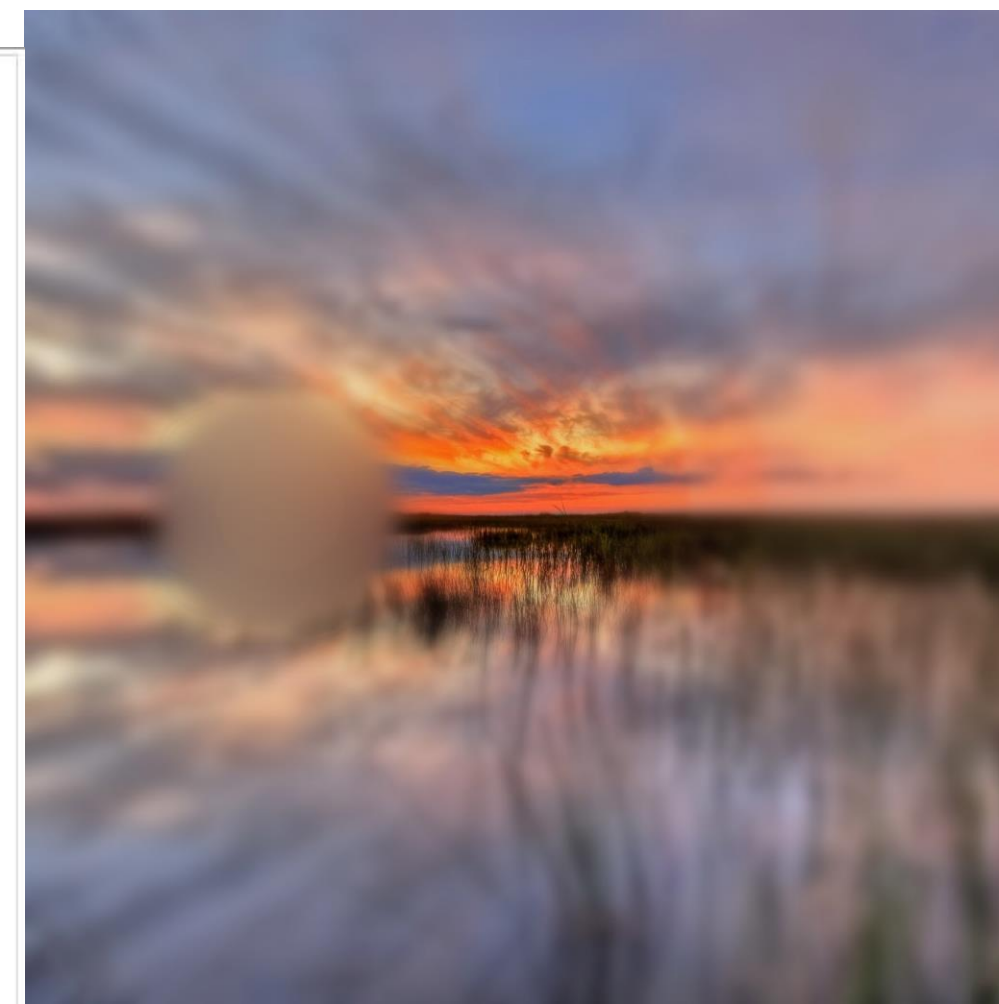
What we **Experience**



Peripheral Visual
Acuity vs Angle



What we **Perceive**





We are a Self-Model Experiencing & Living In a Model of the World

- ❑ We are **not** just a body living in a world
- ❑ We are a **self-model** living in a **model of the world**
- ❑ Our sensory **experiences** are of that **model of the world**
 - ❑ We do **not** directly experience the “**real world**”



Part 3: The Three Agent Model

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The Main Hypothesis of This Model of Consciousness:

- The human agent can be broken down into **three different, but interconnected sub-agents**
- Whereas animals only have **two of these sub-agents**
 - The 3rd agent is very limited in animals compared to humans
 - The “god” concept can be found in one of the 2 agents in animals
- The human “**living problem**” was caused by this new very effective **3rd agent** that evolved in modern humans



The First Two Agents

- ❑ **The Thinker** – the executive function which uses language, symbols, concepts, and images to **solve problems**
 - ❑ This **new** more powerful agent is very comfortable in the rich human conceptual world – in animals the Thinker is much weaker
- ❑ **The Doer** – controls the body and has emotions
 - ❑ Animals and humans both have this agent
- ❑ The most compelling evidence for the Thinker and Doer agents is **Dual Process Theory⁽¹⁾** (DPT) in psychology
 - ❑ DPT System 1 (the **“Fast” subconscious** system) is the **Doe**r
 - ❑ DPT System 2 (the **“Slow” conscious** system) is the **Thinker**

⁽¹⁾ Nobel Laureate **Daniel Kahneman** popularized **Dual Process Theory** in his 2011 book, **“Thinking, Fast and Slow”**



Dual Process Theory

- ❑ **Doer**=System **1**: **fast**, intuitive, implicit, & **subconscious**
- ❑ **Thinker**=System **2**: **slow**, deliberative, explicit, & **conscious**
- ❑ Popularized by psychologists Daniel Kahneman's 2011 book:
"Thinking, Fast & Slow"
 - ❑ Describes the **biases** that System 1 can have in decision making
 - ❑ Kahneman's 2002 Nobel prize in Economics for Prospect Theory and Behavioral Economics is based on Dual Process Theory
- ❑ Also popularized by Malcom Gladwell's 2002 book:
"Blink: The Power of Thinking without Thinking"
 - ❑ He extols the **merits** of the System 1 decisions!
 - ❑ These are often intuitive decisions that are hard to logically justify



Dual Process Theory **Example**

- *Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination, and social justice, and also participated in anti-nuclear demonstrations.*

- Which of these three statements is the **most** probable?

Right Hand 1. Linda is active in the feminist movement

Left Hand 2. Linda is a bank teller

R & L Hands 3. Linda is a bank teller and is active in the feminist movement

- The **correct** answer is either Statement **1** or **2**

Dual Process Theory Example

- Which of these three statements is the **most** probable?

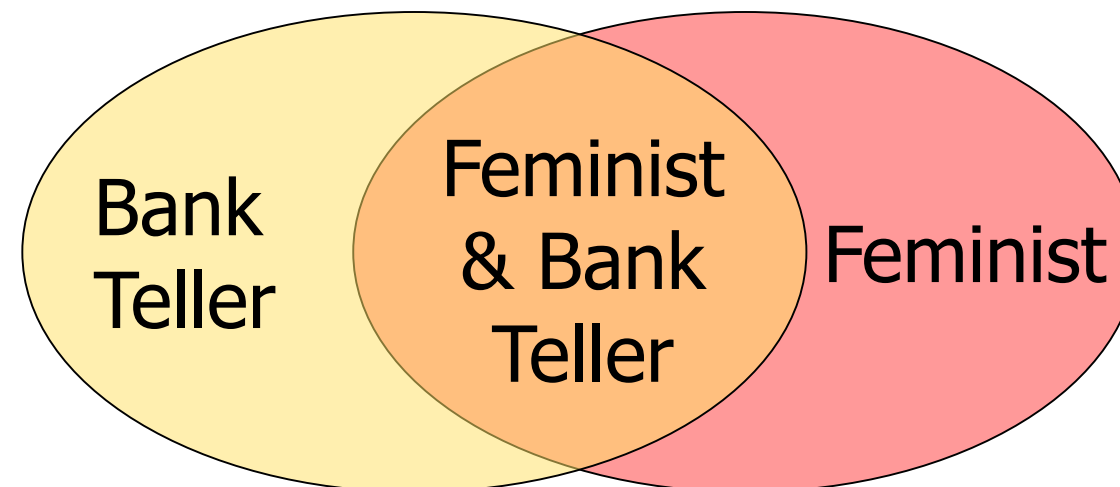
Thinker ← 1. Linda is active in the feminist movement

Thinker ← 2. Linda is a bank teller

Doer ← 3. Linda is a bank teller **OR** is active in the feminist movement

- The **correct** answer is either Statement **1** or **2**

The Thinker figures out this Venn diagram:



The Doer answers a different question:
Which statement matches more of the categories mentioned in the description?



Dual Process Theory **Example**


- When testing Stanford Business School graduate students
 - Who majored in probability, decision making, and statistics
 - **85%** ranked “feminist bank teller” as **more** probable
 - **And they were wrong!**
- In a review of this experiment, **Stephen Jay Gould** wrote:
 - I am particularly fond of this example because I know that the third statement is **least** probable, yet a little homunculus in my head continues to jump up and down, shouting at me — “but she can’t just be a bank teller; **read the description!**”

"In Two Minds: Dual-process Theories of Reasoning & Rationality"

→ 2009 Book: *"In Two Minds: Dual Processes and Beyond"*

In Chapter 2, one of the organizers, J. Evans, says:

- "It would be more useful to describe this grand unifying form of dual-process theory as the '**two minds hypothesis**'.
 - Here I define '**mind**' as a high-level cognitive system
 - **capable of representing the external world**
 - and **acting upon it** in order to
 - serve the **goals of the organism**.
- ...
"



"In Two Minds: Dual Processes and Beyond", 2009 Book

→ Book '**two minds hypothesis**' *quote continued:*

- ❑ "...The two minds hypothesis is that the human brain contains **not one but two parallel systems** for doing this.
 - ❑ **Animals**, according to this view, have but one system corresponding to the '**old mind**' in human beings.
 - ❑ **Humans** have a '**new mind**', which coexists in uneasy coalition with the first, sometimes coming into direct conflict with it.
- ❑ This is a strong, even startling hypothesis, which makes it very interesting..."



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- ❑ This is a strong, even startling hypothesis, which makes it very interesting **(if probably wrong!)."**
 - ❑ ***Hopefully THIS presentation will make this hypothesis much more plausible to YOU***



The Third Agent

- ❑ Dual Process Theory gives compelling evidence for the **Thinker** and **Doer** agents.
- ❑ The third agent, the **Experiencer**, is required by the *Good Regulator Theorem*
 - ❑ The Experiencer constructs and supplies the combined sensory and conceptual world models to the Thinker and Doer
 - ❑ This is required since both the Thinker and Doer agents can access both the sensory and conceptual world models
 - ❑ The conceptual and sensory world models are tightly integrated
 - ❑ Non-abstract concepts are anchored to the sensory world model and abstract concepts are typically constructed from non-abstract concepts



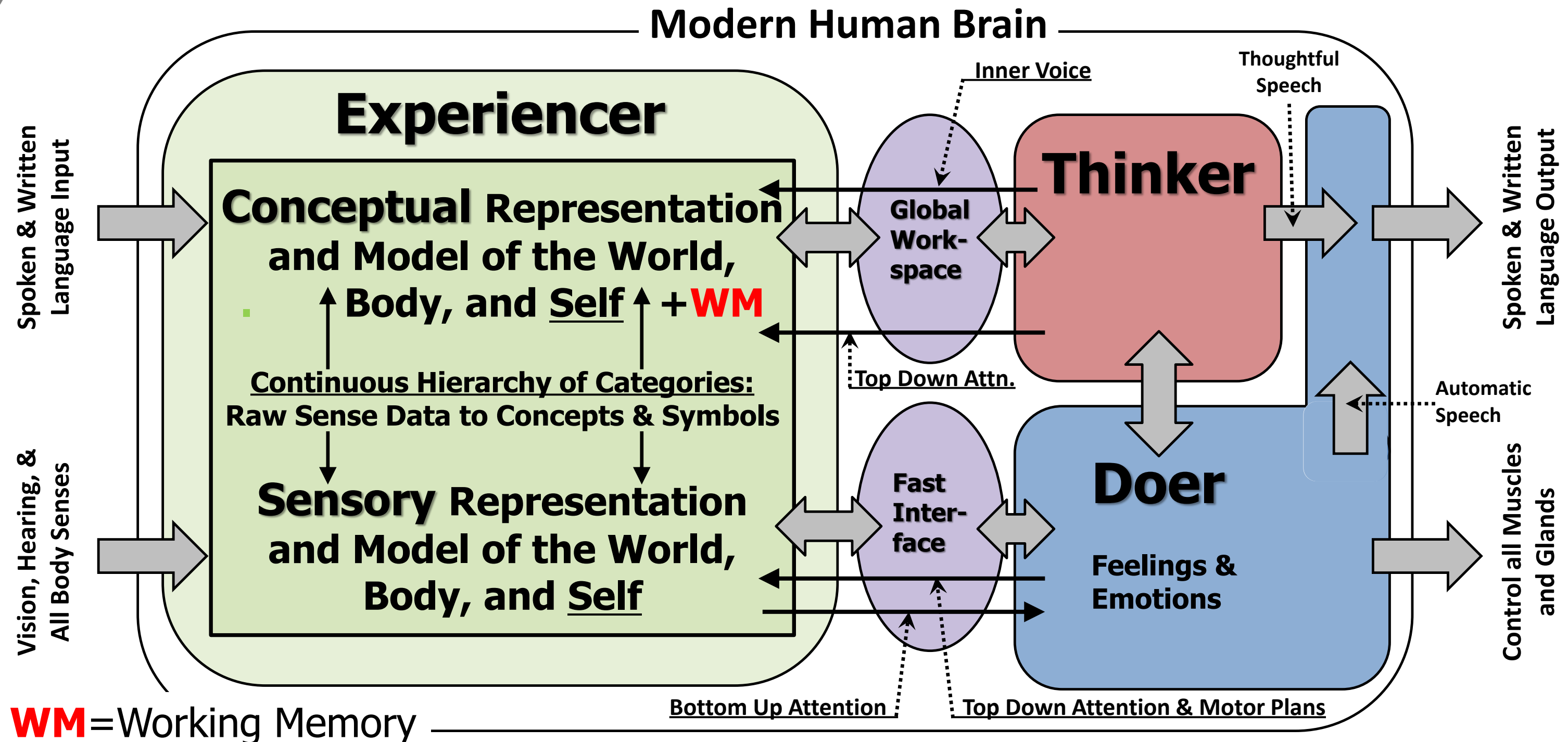
Part 4: The Three Agent Block Diagram

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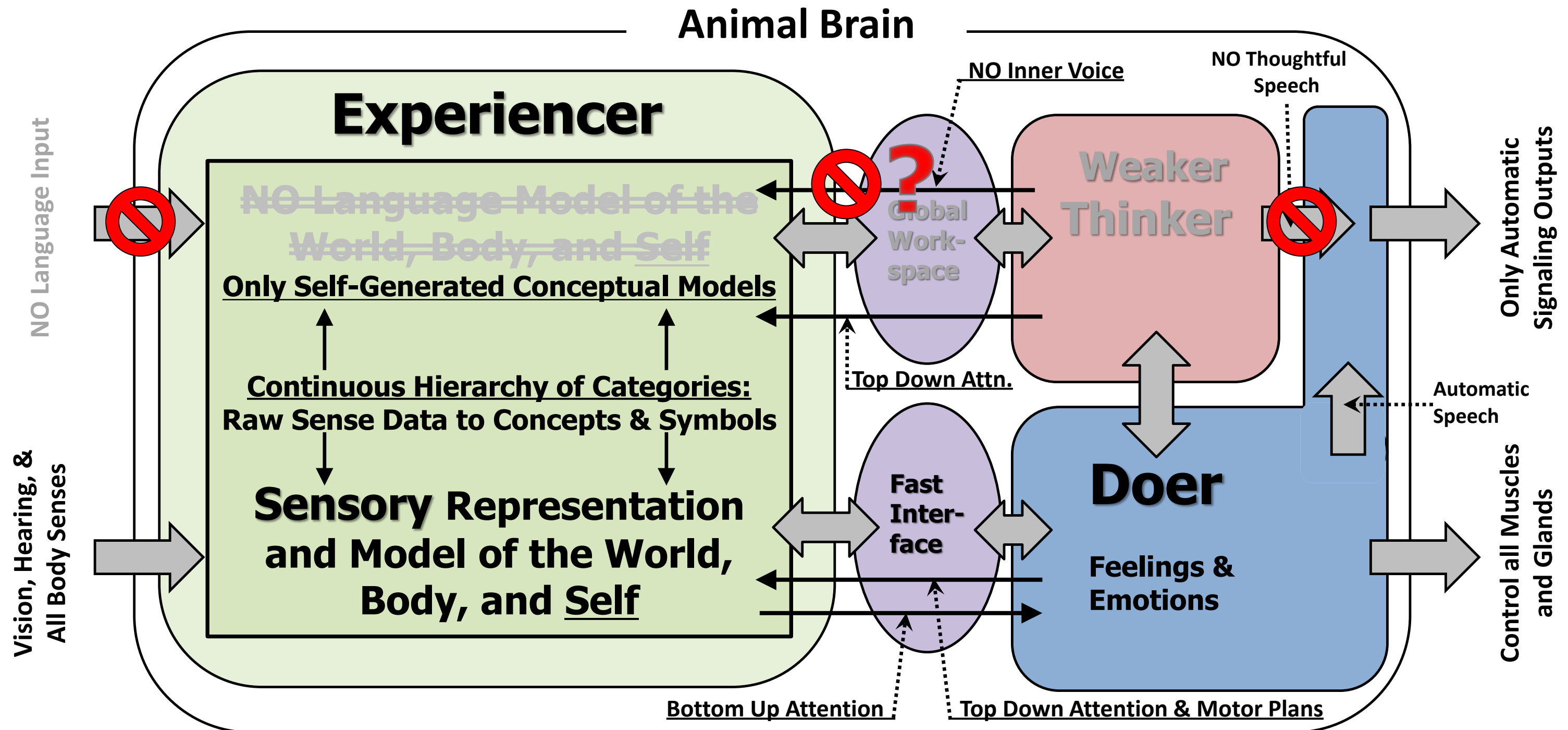
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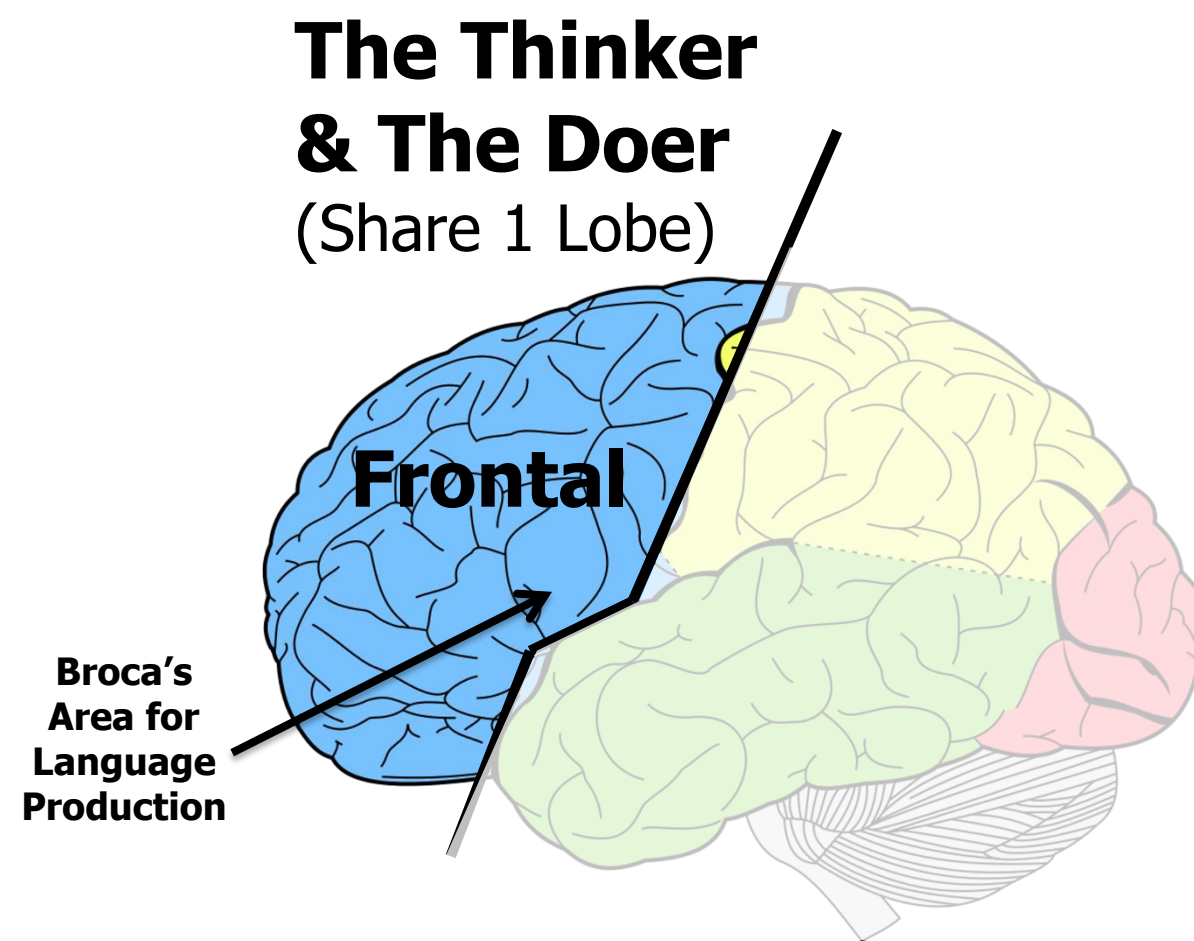
The Three Agents & Their Interfaces:



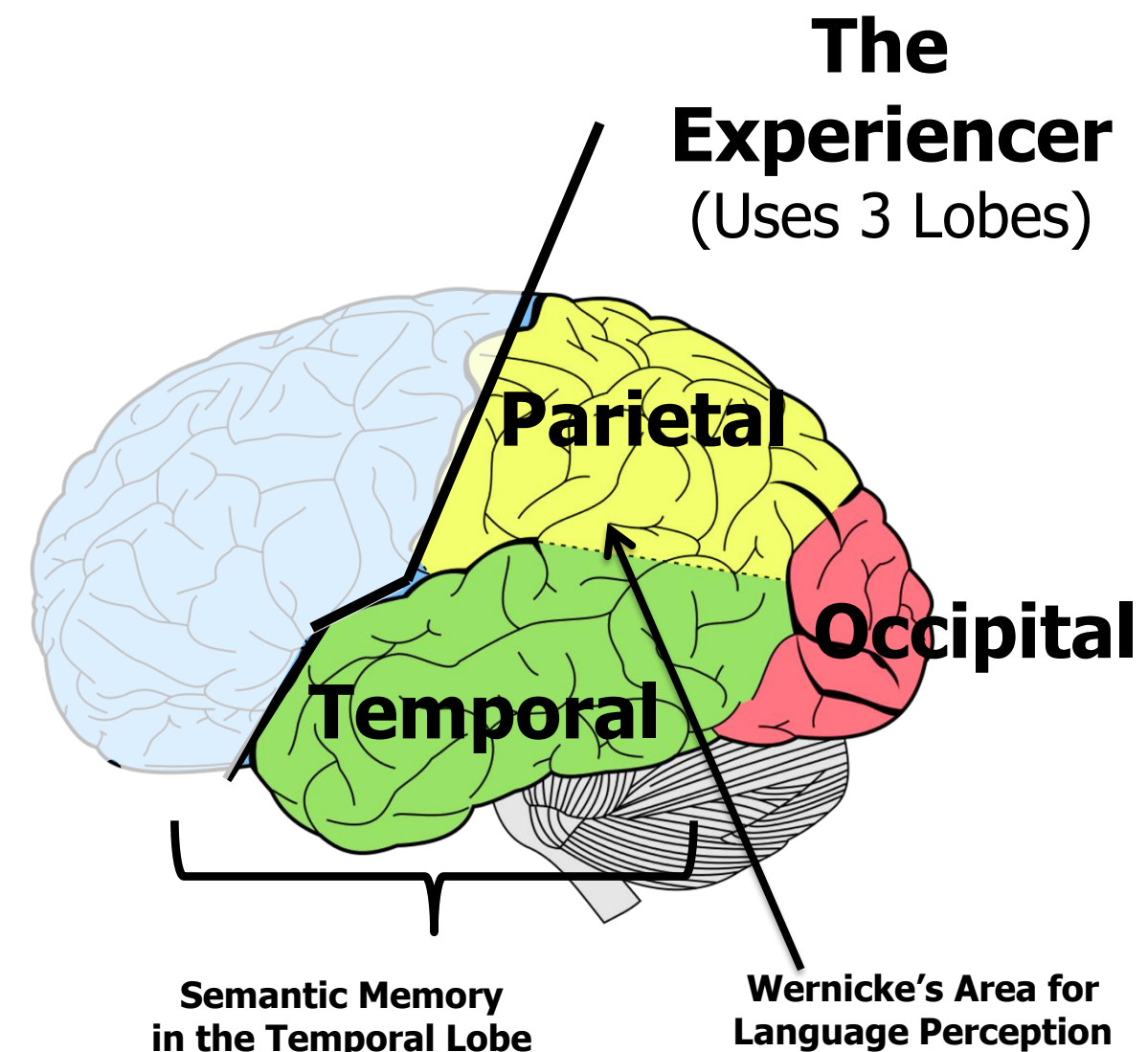
An Animal's (or Ancient Human's) Agents:



The **Approximate** Locations of the Three Agents in the Brain



The Thinker & The Doer
share 40% of brain



The Experiencer
is **60%** of the brain



Part 5: Agent Self-Models and Goals

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Thinker **Self-Model**

- Agents **need** a self-model if they **change** the world and if they are **part** of the world
- Body Schema (**BS**) is the current state and position of all the parts of the body
- The **Thinker's** self-model is complicated & includes:
 - The **I/me/my**, a very **complicated** self concept
 - A **simplified BS** which "**I**" think "**I**" can control directly
 - All the **goals** the Thinker made up, like "*I must always be right!*"
- In simple terms, the **Thinker** self-model is **I/me/my**



Doer Self-Model

- ❑ The **Doer's** self-model is much simpler:
 - ❑ The **full BS** which includes the current state of the body and knowing all of its capabilities and limitations;
 - ❑ The Doer's **goals** as indicated by emotions and feelings
- ❑ In simple terms, the **Doer** self-model is the **Body**
- ❑ Before we go on to the Experienter self-model, let's talk about attention:
 - ❑ The Experienter directs both Top Down (**TD**) and Bottom Up (**BU**) Attention.
 - ❑ The current state of TD & BU attention = Attention Schema (**AS**)



The Attention Schema Theory (AST) of Consciousness⁽¹⁾

- ❑ AST proposes that consciousness evolved when brains started to direct attention.
- ❑ The primitive animal that 1st directed attention would have been the very 1st animal to create an abstract concept
 - ❑ At that time, all other concepts created would be directly related to sensory input – such as the concept of an “object”
 - ❑ But this AS concept is not related to any particular sensory input.
 - ❑ This **AS abstract concept** can be interpreted as **an** “I” concept
 - ❑ For example, “I” am the “one” directing the Experiencer’s attention
 - ❑ According to AST, animals are conscious if they have an AS
 - ❑ And therefore have created the AS abstract concept

(1) Neuroscientist Michael Graziano’s book: “Consciousness and the Social Brain” (2013) and also <https://www.theatlantic.com/science/archive/2016/06/how-consciousness-evolved/485558/>



The Experienter Has 3 Self-Models (That Are Equivalent)

- The Experienter **does not** change the **external** world
- However, the Experienter **does** direct (TD & BU) **attention** and that **changes** the **internal** representation of the world
 - In other words, the **AS** changes the internal world model
 - Therefore the **AS** must be **part** of the internal world model
 - So in a sense, the Experienter **is** the **AS combined** with the current state of the **world model**
- 1st** □ Experienter's **self-model** is identical to the **world model**

TD = Top Down

BU = Bottom Up



The Experienter Has 3 Self-Models (That Are Equivalent)

- Experienter self-model is AS + the model of the world
- The AS can be interpreted as "I" since "I am that which pays attention"
 - Presence means the state of existing
 - The AS must exist if the world model exists therefore AS can represent "presence" and the world model is "awareness"
- 2nd □ The Experienter self-model is "**Presence-Awareness**"
- The Experienter's **self-model** is identical to the **world model**, so, effectively:
- 3rd □ The Experienter has **NO self-model**



AST Implies the Experienter is the Only Conscious Agent

- ❑ The Thinker and Doer don't have an Attention Schema
- ❑ The Experienter's world model and self model are:
 - ❑ AS + current representation of the world
 - ❑ Awareness is the experience of the current representation of the world
 - ❑ So, the Experienter is **conscious**
- ❑ The Thinker seems to be conscious (and DPT says it is conscious)
 - ❑ But that is an illusion. The reasons it seems to be conscious is:
 - ❑ The Experienter experiences the Thinker's Inner Voice
 - ❑ As the Thinker manipulates the contents of Working Memory, the Experienter notices the WM contents changing.
 - ❑ So the Experienter can infer what the Thinker is "doing" – it seems to be conscious



How the Human Agent's Self-Model is Set

- Note that all agent self-models are held in the Experienter
 - This includes the self-models of the Human Agent, Thinker Agent, Doer Agent, and Experienter Agent
- The Thinker's inner voice continually **bombards** the Experienter with statements equivalent to:
 - "We are <**I/me/my**>!"
 - The Experienter eventually believes this and sets the **human's overall self-model** to equal the **Thinker's** self-model



How the Human Agent's Self-Model is Set

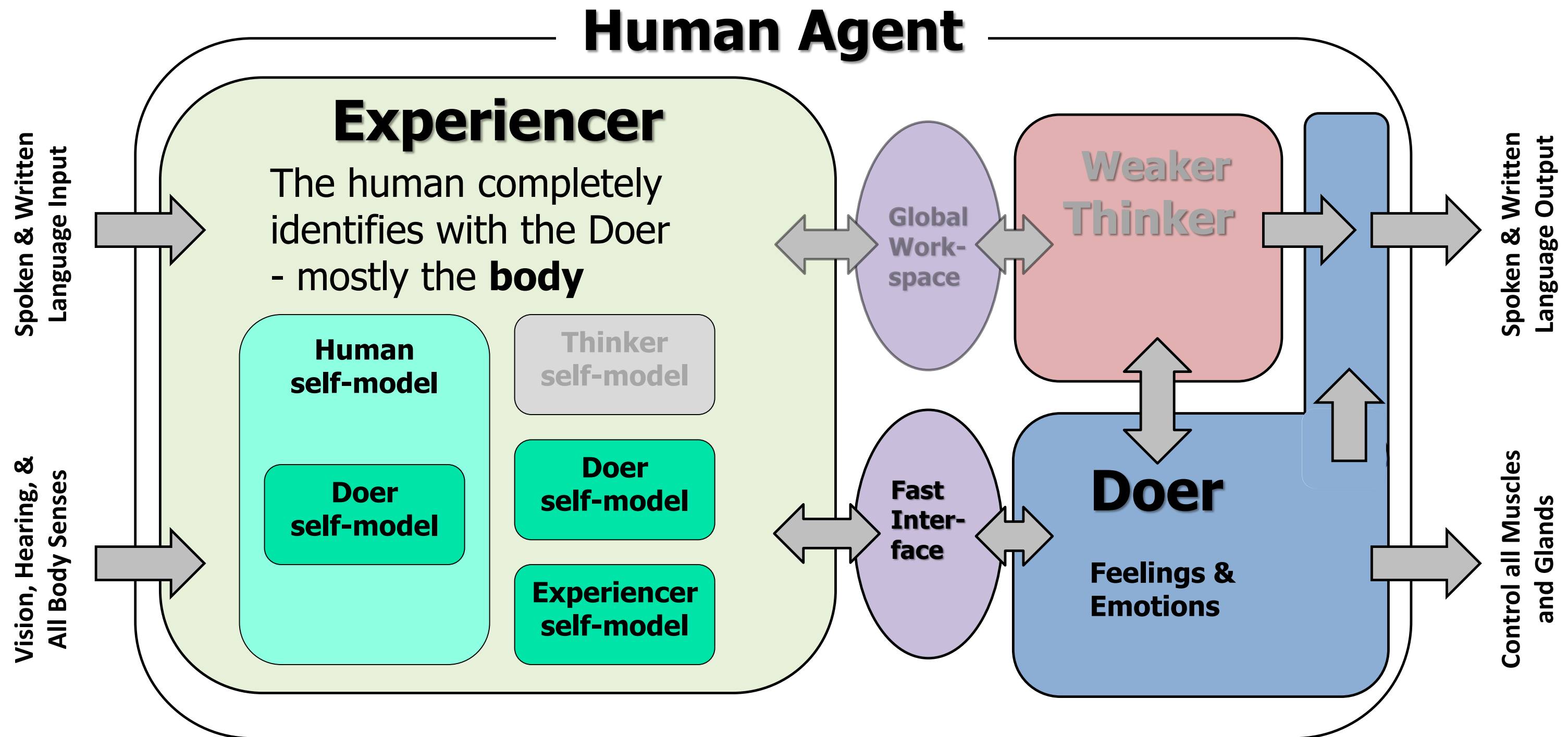
- ❑ The Doer says the equivalent of:
 - ❑ “We are the **Body**”
 - ❑ Experienter sets Human Agent self-model to Doer self-model
- ❑ The Experienter whispers
 - ❑ “We are the **World**” of “We are **Presence-Awareness**”
 - ❑ If this whisper can be heard above the din of the Thinker and Doer, the Experienter sets Human Agent self-model to Experienter self-model



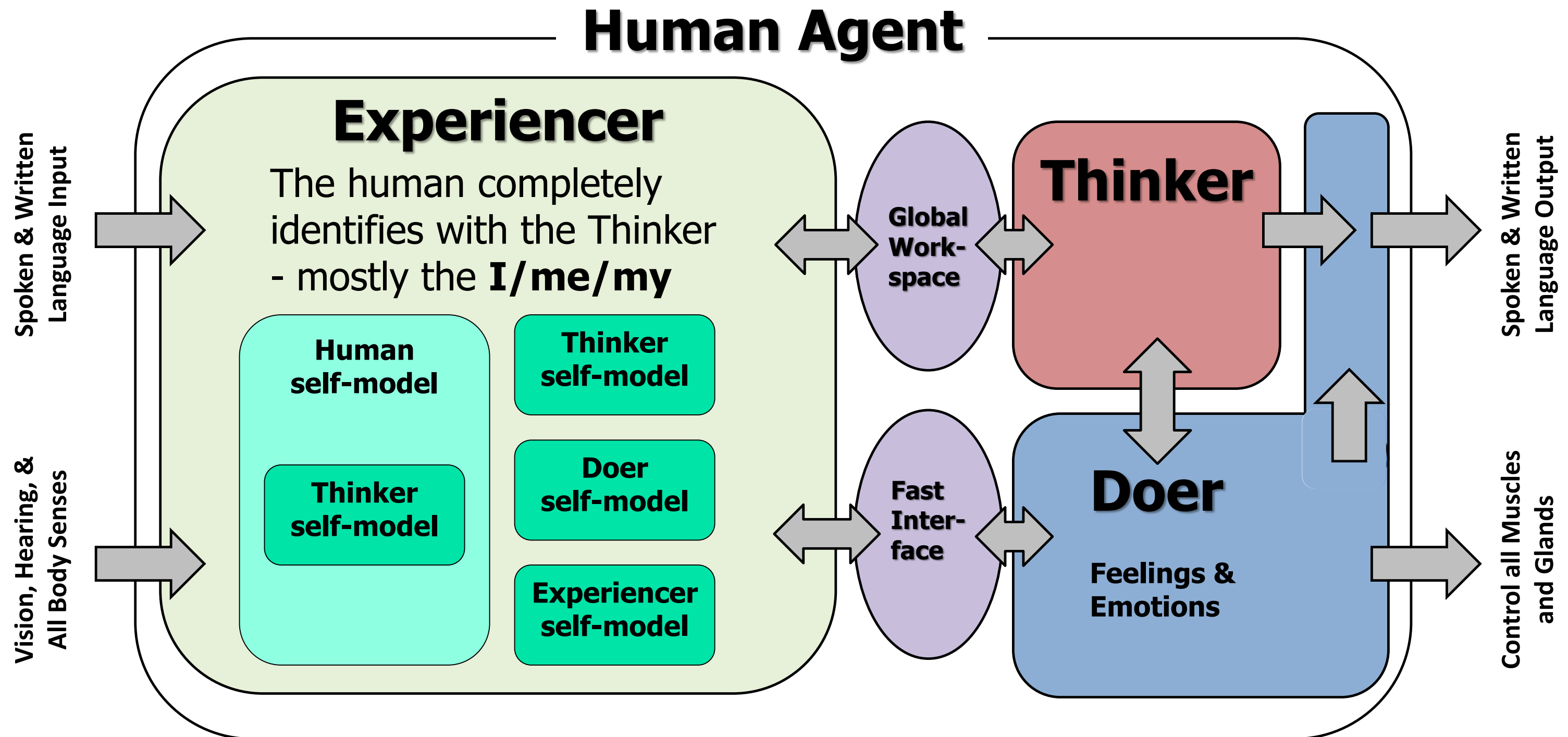
How the Human Agent's Self-Model Changes

- The next slides show how the **Human self-model** will change with **time** and with **spiritual practices**
 - The slides describes these cases:
 - An **ancient human** (or an animal or an infant)
 - A **modern non-spiritual human**
 - A **modern spiritual human**
 - Stages of **spiritual enlightenment** for a **modern human**

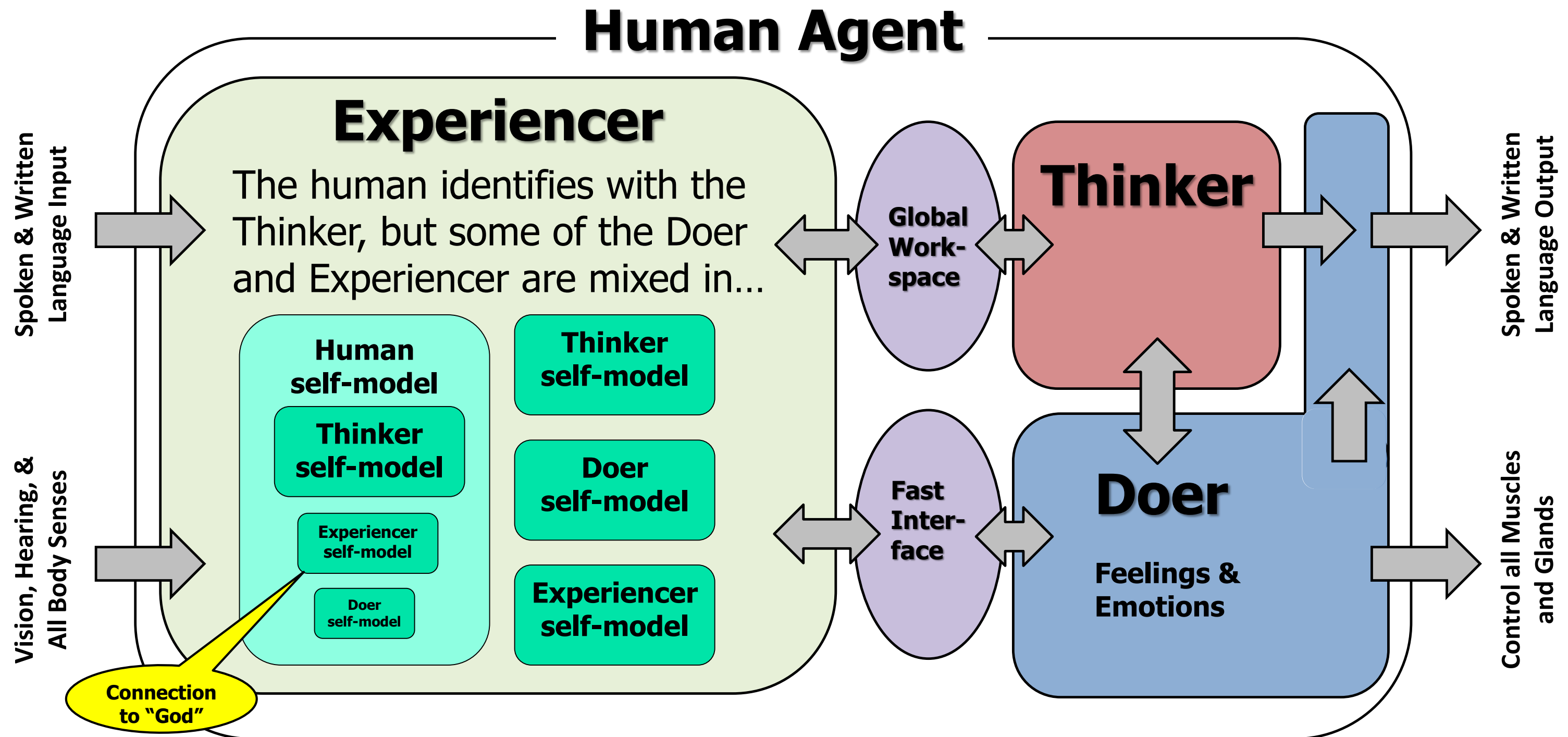
Ancient Human Self-model (or for an Animal or an Infant)



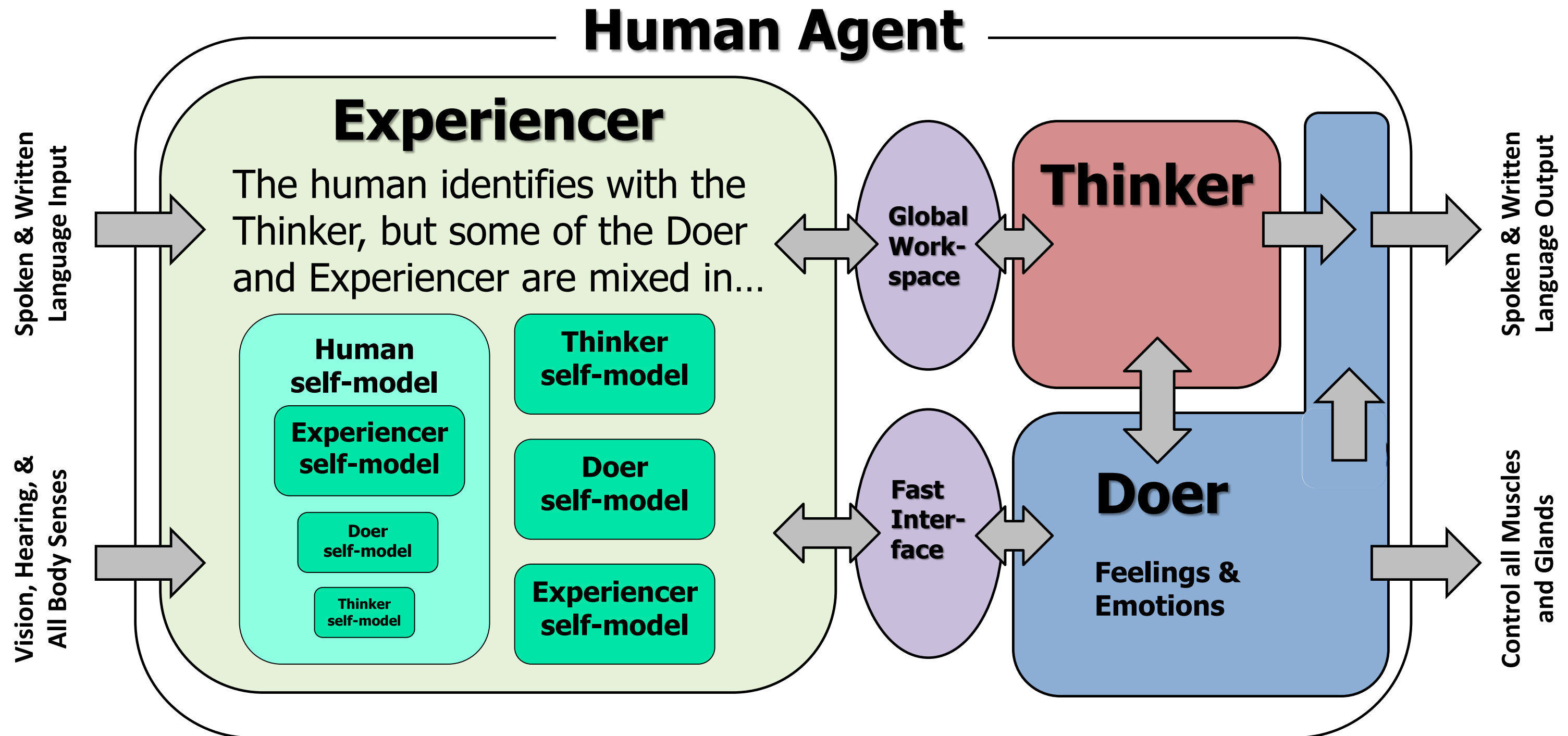
Modern Non-Spiritual Human Self-model



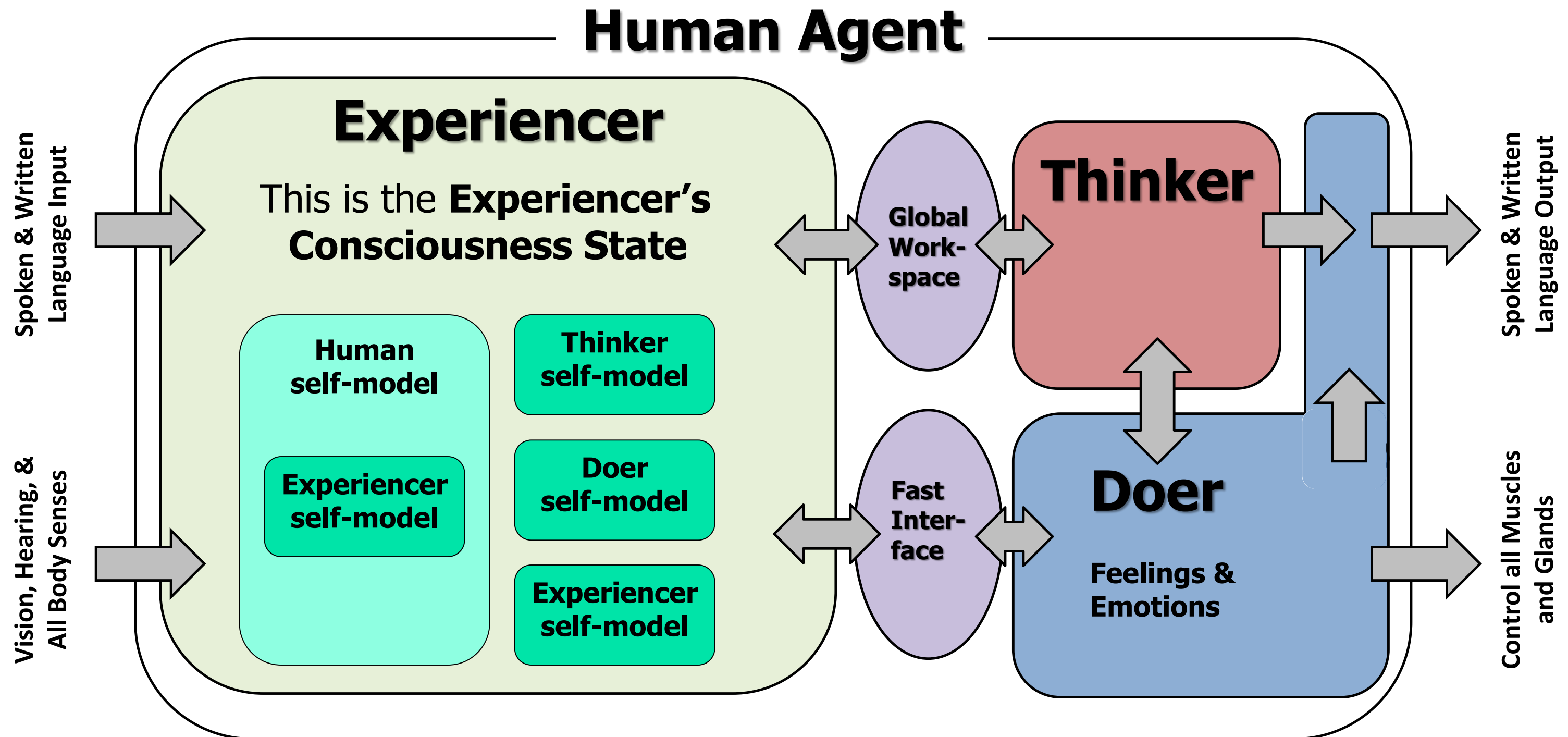
Modern Spiritual Human Self-model



Early Spiritually Enlightened Human Self-model



Fully (Nondual) Spiritually Enlightened Human Self-model





Agent's Goals Set by **Evolution**

- ❑ **Doer's** goals: (instinctual goals)
 - ❑ To stay alive by avoiding danger and predators; and to obtain food, water, and shelter
 - ❑ To reproduce, raise children and to be **social**
 - ❑ We are intensely social animals so the **prosocial goals** are strong!
- ❑ **Experiencer's** goals:
 - ❑ Create a sensory and conceptual model of the world and body
 - ❑ To direct bottom attention based on the other agent's goals
 - ❑ To direct top down attention as directed by the other agents
 - ❑ To pay attention to the Thinker's inner voice & Doer's emotions
- ❑ **Thinker's** goal is to solve problems



Additional Sources of Goals

- ❑ Each agent can create new goals to help meet current goals
- ❑ Thinker and Doer can learn goals from each other
- ❑ Doer's goals are indicated by emotions and feelings
 - ❑ Pleasure and pain
 - ❑ Emotions related to social relationships such as love and anger
 - ❑ Most Doer's goals are short term in the near future
- ❑ Thinker's goals are more long term and use past experiences to plan the future
 - ❑ The Thinker can make up purely conceptual goals, such as:
 - ❑ "I want to get a Ph.D. in physics." "I must always be right."
 - ❑ "Life should be fair." "This should not happen."



Spiritual Virtues & Vices

Spiritual Virtue	Spiritual Vice
Love	Hate (or Hatred)
Altruism (or Selflessness)	Selfishness
Forgiveness	Resentment (or Regret or Blame)
Humility	Arrogance (or Pride or Self-centeredness)
Compassion (or Empathy)	Indifference
Fairness (or Justice)	Unfairness (or Injustice)
Acceptance	Rejection (or Judging)
Patience	Impatience

Note that the Spiritual Virtues help social interactions go smoothly whereas the Spiritual Vices are more self-centered and anti-social.



Agents & the Spiritual Virtues & Vices

- ❑ The **prosocial** goals of the Doer are strong
 - ❑ So the **Doer** is more likely to practice **spiritual virtues**
 - ❑ The Doer's self-model is the **body**, so if the body is threatened, the Doer can be self-centered and engage in spiritual vices to protect it
- ❑ The Thinker can **copy** the Doer prosocial goals
 - ❑ So the Thinker **can** practice spiritual virtues
 - ❑ But the **Thinker** is more likely to be **self-centered**
 - ❑ It's self-model is **I/me/my** which almost defines **self-centeredness**
 - ❑ **I/me/my** is easily threatened (by words) – e.g. "He said **I** was **WRONG!**" when threatened, the Thinker will use spiritual vices as defense
 - ❑ So the Thinker is more likely to practice **spiritual vices**
- ❑ Doer's **prosocial** goals are the source of **spiritual virtues**



Part 6: What's the Problem that Spirituality Fixes?

Part 1: Spirituality: What, When, and Why? (10 min)

Part 2: Where Do Human Agents Live? (6 min)

Part 3: The Three Agent Model (9 min)

Part 4: The Three Agent Block Diagram (6 min)

Part 5: Agent Self-Models and Goals (10 min)

Part 6: What is the Problem that Spirituality Fixes?(4 min)

Part 7: How Does Spirituality Fix the Problem (11 min)

Part 8: Kinds of Consciousness & Comparisons (7 min)

See: *www.SpiritualityExplained.com* for more information



What's the Problem that Spirituality and Spiritual Enlightenment Solve?

The problem is the Thinker! (the Thinker agent, i.e. Ego)

- ❑ The Thinker is **ideal** for developing civilization, science, and technology; and to help us achieve goals...
 - ❑ But it is **not good** at living a happy life
- ❑ The Thinker **finds** problems everywhere
 - ❑ This can lead to a negative critical attitude towards life
- ❑ If there is **no** problem, then that is a problem!
 - ❑ So the Thinker will find an old problem or invent a new problem



More about The Thinker “Problem”

- ❑ Problems can be in the **past** – often called a **resentment**;
- ❑ Problems can be in the **future** – usually triggering **fears**
- ❑ The Thinker is almost always “**Rehashing or Rehearsing**”
 - ❑ By having conversations with people who are not in the room
- ❑ Thus, the Thinker is the time-traveler
 - ❑ When in the present moment, it will often complaining about it.
- ❑ The Thinker argues with reality: “**This should not happen**” or “**This is bad and wrong**” or “**I should not have done that!**”
 - ➡ An Experienter model of the world filled with contradictions



Thinker's Emotional "Problems"

- ❑ **Negative emotions** are a problem for the Thinker to solve:
 - ❑ "How do I prevent this from happening again?"
- ❑ **Positive emotions** can also be a problem for the Thinker:
 - ❑ "How do I make sure this happens all the time?"
- ❑ Thus, the Thinker is an **emotion amplifier** and an **emotion echo chamber!**
- ❑ Buddhism says the cause of Suffering is **Attachments** and **Aversions**
 - ❑ The Thinker amplifies and echoes Attachments and Aversions



The Cause of the Problem

- The typical non-spiritual modern human **completely identifies as the Thinker's self-model**
 - The Thinker's inner voice continually **bombards** the Experiencer with statements equivalent to:
 - "We are <**I/me/my**> and <**I**> am in complete control of the body!"
 - The Experiencer eventually believes this and the **human's overall self-model** becomes equal to the **Thinker's** self-model
 - This makes it harder for the Doer's **prosocial / spiritual virtues** to be expressed since the Doer's goals are subordinated to the Thinker's goals
 - And it makes the Thinker's **inner voice very important** since it comes from "**I/me/my**" – so it must be believed and obeyed
 - It would be healthier if the Experiencer & Doer treated the inner voice as a **suggestion to be considered** – **not** a command to be obeyed



Part 7: How Does Spirituality Fix the Problem

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See: *www.SpiritualityExplained.com* for more information



The Goal of Spirituality

- The goal of spirituality is to **undo the problems** that this Thinker self-model identification creates:
 - **Reduce identification** with the Thinker's **I/me/my** self-model
 - Diminish the Thinker's **selfishness and self-centeredness**
 - Reduce the Thinker's **judgments and criticisms**
 - In particular, make the Thinker more **prosocial** ("Love one-another") to practice the **spiritual virtues** instead of vices
- Theistic spirituality asks the Thinker to **surrender** to "God"
 - Preview: We will see that "God" is really the **Experiencer!**



Non-Theistic Spiritual Traditions:

- ❑ When the **Thinker first became conscious**
 - ❑ An **increase** in Thinker caused **suffering** was more apparent
 - ❑ And these traditions try to **undo** that suffering
 - ❑ The **practices** and **insights** of these traditions apparently **help**
 - ❑ Some of these paths have “**Enlightened States**” where this Thinker suffering can be **completely** undone
 - ❑ Meditation and other spiritual practices apparently result in a **Experiencer Consciousness** state
 - ❑ In that state there is no identification with the Thinker
- ... Now continuing with the Theistic Spiritual Traditions...



What is “**God**” in this model?

- When the **Thinker first became conscious**
 - A **weaker Thinker** could have experienced a **stronger** agent (the Doer or Experiencer) with **more power in the world**
 - Thus the Doer or Experiencer could become identified as “**God**”
- The Experiencer is actually the best candidate for “God”
 - Experiencer **creates** the world where Thinker self-model **lives**
 - **Intuition** comes from the Experiencer & intuition is often said to be the channel God uses to answer prayer
 - **A Wise Intuitive** modifications of the **Attention** mechanism gives the Experiencer (God) quite a bit of power over the world



Alcohol Addiction

- ❑ The **Thinker starts** the alcohol addiction cycle...
 - ❑ “I really like alcohol, I should drink more often!”
 - ❑ This creates a **Thinker goal** to drink
 - ❑ Repeating this behavior eventually trains the **Doer** to copy that **goal**
- ❑ Eventually, **both** agents become addicted to alcohol
 - ❑ Doer drinks if triggered by **BU** attention directed to alcohol
 - ❑ Thinker **obsesses** about alcohol & uses **TD** attention to get alcohol
 - ❑ Eventually the Thinker notices the negative consequences of drinking and wants to **stop**, but it’s too late, both agents’ goals are too strong
 - ❑ Thus addiction is using **TD** and **BU** attention focused on **alcohol** to keep the addiction process going



Theistic Spiritual Tradition Example: Alcoholics Anonymous Recovery

- AA claims that recovery from alcohol addiction is possible due to a “spiritual awakening” from working the 12 steps:
 - **Step 1:** We admitted we are powerless over alcohol and our lives are unmanageable
 - Thinker wants to stop drinking but it admits that it is powerless over alcohol and can’t manage its own life
 - **Step 2:** Came to believe that a Power greater than ourselves could restore us to sanity
 - Thinker sees that the Experiencer could help with the addiction
 - **Step 3:** Made a decision to turn our will and our lives over to the care of God as we understood Him
 - The Thinker surrenders to and asks for help from the Experiencer



The Experencer's **Normal** Attention Control Mechanism

- ❑ The Experencer knows the Thinker and Doer **goals**
 - ❑ The Experencer uses **BU** attention to inform the Thinker and Doer if any of their **goal conditions are detected**
- ❑ Experencer directs **TD** attention as requested by the agents
 - ❑ Also it pays attention to Thinker's inner voice or Doer's emotions
 - ❑ This attention effectively **amplifies** the inner voice or emotion
- ❑ In an **active alcoholic**, the Thinker inner voice **obsessing** about drinking gets amplified and reinforced so it continues
 - ❑ It treats the obsession as a **TD** attention request to find alcohol
 - ❑ Alcohol found by **BU** attention causes the Doer to drink it



The Experienter's **Wise Intuitive** Attention Control Mechanism

- ❑ Experienter notices the Thinker admits it is **defeated** by alcohol and it wants the Experienter to **help** it stop drinking
 - ❑ The Experienter uses **intuitive wisdom** to know that **less attention** to alcohol could help the agents not drink
 - ❑ The Experienter directs **less** TD or BU attention to alcohol
 - ❑ Doing this also **diminishes** the obsessive alcohol thoughts
- ❑ This same mechanism can decrease all **attachments and aversions** as required for Buddhist enlightenment
 - ❑ It can also explain **less** emotions and inner voice that are reported by individuals in enlightened states
 - ❑ This happens if the Experienter notes these **goal requests**



How Does **Meditation** Help Solve the Thinker “Problem”?

- ❑ Meditation attempts to **quiet the Thinker’s inner voice**
 - ❑ **Concentrating on breathing** - Breathing is an area where the Thinker and Doer share motor control
 - ❑ **Mantras or Chants** - Repeating the same phrase over and over keeps the Thinker busy and decreases inner voice thoughts
 - ❑ **Focused top down attention** by the Thinker keeps it busy directing attention instead of generating inner voice thoughts
 - ❑ **Open monitoring of bottom up attention** is noticing the Experiencer since it is the generator of bottom up attention
 - ❑ This all makes it easier to **notice the Doer and Experiencer** agents and thus to **reduce identification with the Thinker**



How Do Other **Spiritual Practices** Help Solve the Thinker “Problem”?

- ❑ **Surrender** is the Thinker giving up his illusion of control
 - ❑ Thinker uses **Prayer** to ask for help from Doer & Experencer
- ❑ **Living in the “Now”** is what the Experencer does always but the Thinker is often off in the future or the past
- ❑ **Forgiveness & acceptance** can mitigate resentments caused by the Thinker trying to solve problems in the past
 - ❑ “**Forgiveness is giving up all hope of a better past**”
 - ❑ Krishnamurti said “**You see, I don’t mind what happens**”
- ❑ **Trusting a Higher Power** (or God) can mitigate fear caused by the Thinker trying to solve problems in the future
- ❑ **Gratitude** is the antidote to the Thinker’s many complaints



This Explanation of Spirituality Can Also Explain Some Bible Passages

- ❑ God brought all animals & birds to Adam so he could name them
 - ❑ The Experiencer allows the Thinker to generate many **nouns** – 1st step in creating a universal language representational system
- ❑ In Eden: *God said, You shall not eat of the fruit of the tree of the knowledge of good and evil; when they did eat it they were expelled from Eden and were cursed with all kinds of suffering.*
 - ❑ Describes when the Thinker **first became a conscious agent**
- ❑ [Jesus said] *"The Father and I are one"*
 - ❑ The Thinker has **surrendered** to the Doer and/or Experiencer
 - ❑ Or, perhaps Jesus was in a **Experiencer** Consciousness State



Part 8: Kinds of Consciousness & Comparisons

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Given Three Different Agents, Are There Three Kinds of Consciousness?

- ❑ **Thinker Agent** + Experiencer Agent gives rise to the...
 - ❑ **Thinker Consciousness = Normal Modern Human Consc.**
 - ❑ Abbreviate as **TC**

- ❑ **Doer Agent** + Experiencer Agent gives rise to the...
 - ❑ **Doer Consciousness = Animal or Ancient Human Consc.**
 - ❑ Abbreviate as **DC**

- ❑ The **Experiencer** Agent gives rise to the...
 - ❑ **Experiencer Consciousness = Enlightened Human Consc.**
 - ❑ Abbreviate as **EC**



Doer and Thinker Consciousness Comparison:

<u>Doer Consciousness</u>	<u>Thinker Consciousness</u>
Ancient (many millions of years)	New (about 50 thousand years old)
Primates and many other animals have this	Seems to be (almost) uniquely human
Massively parallel processing	Largely serial processing
High Bandwidth	Low Bandwidth
Intuition, spatial, concrete thought, music, art, athletics & Instinct	Language, logic, temporal sequences, abstract thought, science
Difficult to report the contents of consciousness without using the Thinker Consciousness	Easily "reportable"; often mistaken as the only consciousness
The entity that perceives the "blind sight" object	The entity that is blind to the "blind sight" object
The "Subconscious" (or Id or Unconscious)	The Ego (and Super Ego)
The "Self" (or "true self")	The "self" (or "narrative self")
Does most of the work	Takes most of the credit



Experiencer Consciousness Comparison:

<u>Experiencer Consciousness</u>	<u>Similar to:</u>
Ancient (many millions of years)	Doer Consciousness
All animals (and humans) have this	Doer Consciousness
Massively parallel processing	Doer Consciousness
High Bandwidth	Doer Consciousness
Intuition , space, concrete thought, music, art, athletics	Doer Consciousness
Experiences all perception (i.e. qualia)	Doer Consciousness
Understands language	Thinker Consciousness



Enlightenment (AKA Nonduality)

- ❑ What is **Enlightenment**?
 - ❑ Enlightenment is **not** about any sort of **perfection**...
 - ❑ See Daniel Ingram's discussion of models of enlightenment.⁽¹⁾
 - ❑ Enlightenment is a different kind of perception of the world, **and** requires a fundamental change in the **self-model** of the human.
- ❑ There are **multiple** kinds of enlightenment
 - ❑ Bernadette Roberts reports having two different kinds of enlightenment, many years apart.⁽²⁾
 - ❑ Ingram documents that various sects of Buddhism claim between two and eleven different stages or paths of enlightenment.

⁽¹⁾ Daniel L Ingram, "**Mastering the Core Teachings of the Buddha**" (2008) see the 31 different models in the "Models of the Stages of Enlightenment" chapter.

⁽²⁾ Bernadette Roberts, "**What Is Self**" (2005)



Experiencer Consciousness **IS** An Enlightened State of Consciousness

- Hindu **Advaita Vedanta** says enlightenment is **Nondual**
 - **Nonduality** means “not two – one”
 - It is seeing that “**self**” versus “**other**” distinctions are illusions
 - In other words, “**The world and I are one**”
 - The **1st** Experiencer **self-model** = the whole **world model**
 - Thus **Experiencer Consciousness** is **Nondual**



Experiencer Consciousness **IS** An Enlightened State of Consciousness

- ❑ Other non-dual teachers⁽¹⁾ claim that a human becomes enlightened when they **realize** that their self-model is simply “**Presence-Awareness**”.
 - ❑ The **2nd** Experiencer self-model is “Presence-Awareness”
 - ❑ Non-duality is **realized** in **Experiencer Consciousness**
- ❑ In Buddhism, **Anatta** is the realization of no-self – that any experience of a self, of any kind, is an illusion
 - ❑ The **3rd** Experiencer self-model is that there is no self-model
 - ❑ **Anatta** is realized in the **Experiencer Consciousness** State

⁽¹⁾ Wheeler, J. & Adamson, B. (2004) *Presence-Awareness: Just This and Nothing Else*, Oakland, CA, Non-Duality Press.81



Comparison to Other Ideas

- ❑ Philosopher Ned Block proposes two kinds of consciousness:
 - ❑ Phenomenal Consciousness = **EC**
 - ❑ Access Consciousness = **TC** (or **DC**)
- ❑ Neuroscientist Antonio Damasio proposes a “Core” consciousness and an “Extended” consciousness:
 - ❑ “Core” is only aware of the current time right = **EC** (or **DC**)
 - ❑ “Extended” plans further into future and reflect on past = **TC**
- ❑ The Bicameral Mind Consciousness theory of Julian Jaynes:
 - ❑ The Left Brain = **TC**
 - ❑ The Right Brain = **DC**



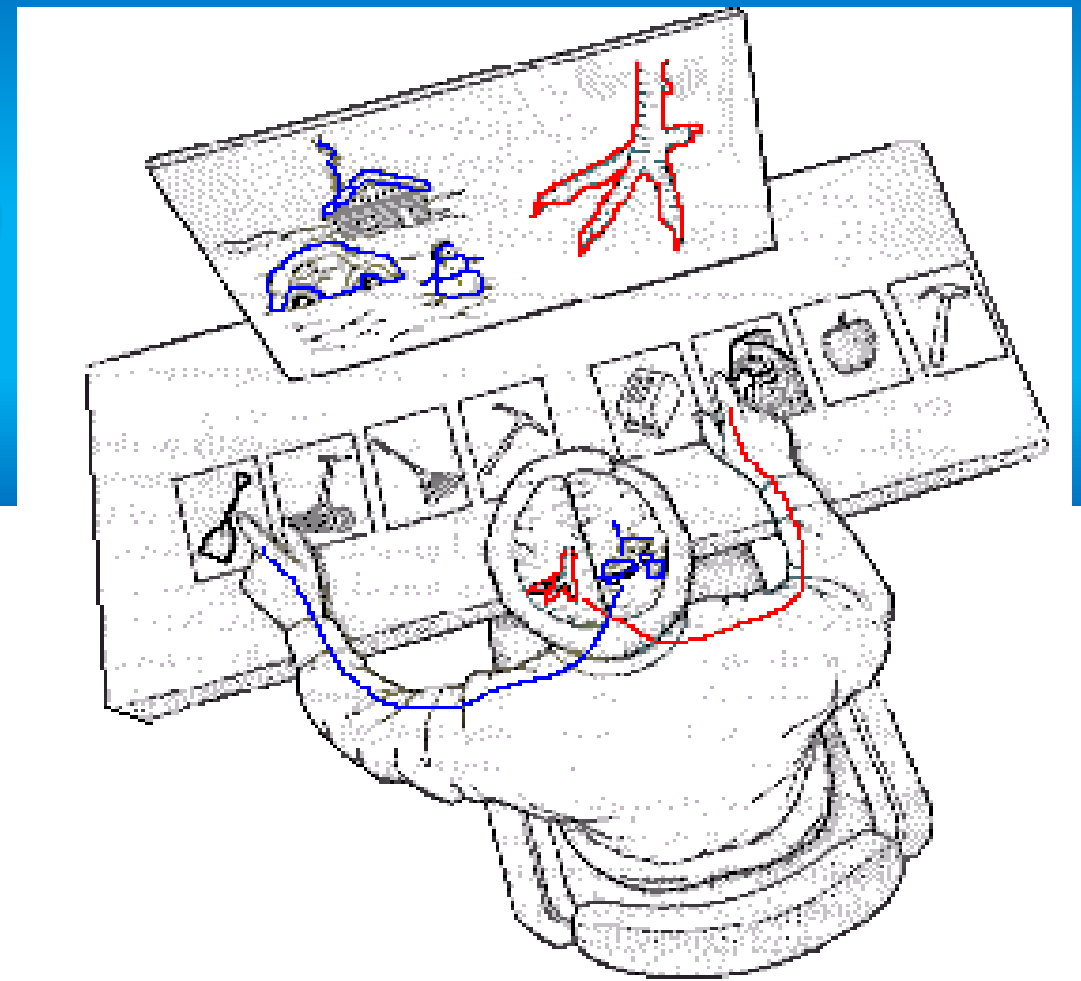
Explanations of Some Psychological and Neurological Experiments

- ❑ Split brain experiments
 - ❑ The TC confabulates what the right brain Doer does.
- ❑ Theory of Mind (Sally – Ann tests) develops at ages 3-4
 - ❑ Toddlers' TC model includes that other people also have an TC
- ❑ Blind Sight Phenomenon
 - ❑ The TC is blind but the DC can still see.
- ❑ Non-conscious Perception and Priming
 - ❑ The brief sensory presentation is not perceived by the TC but it influences the DC to change future responses
- ❑ Libet's decision delay experiments
 - ❑ The TC report of the DC's decision to move is delayed.



Split Brain Experiments⁽¹⁾

- ❑ When the TC does not know what is going on, it'll confabulate (make up a story) about why the DC did an action
- ❑ Consider a split brain patient:
 - ❑ In these patients, the corpus callosum is cut to control epilepsy
 - ❑ Then present one visual problem to the right hemisphere and a different problem to the left
 - ❑ Each hemisphere (Doer) solves the problem and the hand controlled by each is moved to the correct answer



⁽¹⁾ See: https://physics.weber.edu/carroll/honors/split_brain.htm



Split Brain Experiments (Cont'd)

- Since the left hemisphere contains the language input and output “ports”, the TC in the left hemisphere is able to tell why the hand controlled by the left hemisphere Doer made its choice
- However the patient reports a made up reason for why the hand controlled by the right hemisphere Doer made its choice – usually related to what the left brain TC saw
- This is the left brain TC confabulating or making up a story to explain why it did something that it, in fact, did not do. The TC had no knowledge about why the right brain DC did that particular action.



Theory of Mind: the Sally-Anne Test⁽¹⁾

- ❑ A toddler is shown two dolls, Sally and Ann
 - ❑ Sally has a basket and Ann has a box
 - ❑ Sally puts a marble in her basket and then leaves the room
 - ❑ Ann takes the marble out of Sally's basket and puts it in her box
- ❑ When Sally comes back, the experimenter asks the toddler where Sally will look for the marble
 - ❑ At 3, toddlers say that Sally will look for the marble in Ann's box
 - ❑ At 4, toddlers say that Sally will look for the marble in Sally's basket

⁽¹⁾ See https://en.wikipedia.org/wiki/Sally%E2%80%93Anne_test



The Sally-Anne Test (Cont'd)

- Hypothesis:
 - The 3 year-old only has a DC and DCs always agree with reality
 - So Sally will look in Ann's box which is where the marble is now
 - The 4 year-old Thinker becomes the conscious TC
 - The TC notices that the TC and DC can disagree about reality
 - The 4 year-old's TC models other people as also having an TC
 - Therefore Sally's "TC" will think the marble is in Sally's basket
 - Even though the marble is really in Ann's box



Blind-Sight

- ❑ Blind-sight is the phenomenon where some injury to the brain causes the patient to be blind to the presence of an object in some part of the visual field
- ❑ Some part of the brain does know about the object since the patient does much better than chance at:
 - ❑ Guessing the position, identity or other properties of the object
 - ❑ And can accurately reach for the object
- ❑ The TC is blind to the object whereas the DC can perceive it and can prompt the correct guesses to the TC
 - ❑ And the DC/Doer can directly reach for the object



Non-conscious Perception/Priming

- ❑ Non conscious perception is when a stimulus is presented for such a short time that the person cannot report that the stimulus was seen
- ❑ However, the non-perceived stimulus can influence behavior or choices made later (priming)
- ❑ For example, if an image of a dog or cat is briefly (invisibly) flashed, and the subject is then asked to name an animal, the subject will mostly name the kind of animal briefly flashed
- ❑ Similar to blind-sight, the TC does not perceive the briefly flashed image but the DC does and prompts the answer previously seen
 - ❑ The GWS of the TC requires a longer image time to be conscious,
 - ❑ The faster interface of DC can see and remember the object



Libet's Decision Delays⁽¹⁾

- Benjamin Libet demonstrated that the brain begins to prepare to make a spontaneous finger movement 0.55 seconds before the movement, but that the reportable consciousness of making the movement was only 0.35 seconds before the movement
 - Interpretation: the DC is the one who decides to move the finger and it takes the TC 0.2 seconds to notice this decision
 - However, the TC thinks that "IT" made the decision!

⁽¹⁾ B. Libet, et al., "Time of Conscious Intention to Act in Relation to Onset of Cerebral Activity (Readiness Potential)," *Brain* 106 (1983) p. 640



Thank You!

- ❑ Thanks for directing your Top Down Attention to my Presentation!
- ❑ I hope that your Experienter intuitively understood the three agent model of consciousness,
- ❑ and that this model has explained the origin, purpose, and efficacy of spirituality!



The End

- ❑ I would very much appreciate any and all thoughts and feedback. Thank you!
- ❑ Please check out **www.SpiritualityExplained.com** where there are links to all my **YouTUBE** videos and **PDFs** of all my presentations.
 - ❑ Also sign up for very infrequent emails by clicking on **"Sign Up Now"** on any page of the website.
 - ❑ Contact me at: **frank@SpiritualityExplained.com**
- ❑ Like my **Facebook** page: **SpiritualityExplainedBooks**
- ❑ Please feel free to email links or use social media to share all of this with any of your friends who might be interested.



The following slides are obsolete and are depreciated...



Consciousness

- We can be **conscious** of many different kinds of things:
 - Sensory inputs, thoughts, emotions, feelings, and our actions.
- The brain performs **significant subconscious** processing.
- Which neurons do **conscious** vs. **subconscious** processing?
- **Neural Correlates of Consciousness (NCC)⁽¹⁾**: the neural events & mechanisms sufficient for consciousness.
- The set, or cluster, of neurons needed by the NCC, at a given time, will be called the:

Conscious Cluster of Neurons (CCN)

⁽¹⁾ Crick F. and Koch C. (1990) Towards a neurobiological theory of consciousness.



The Three Agent's Self-models

- The **TC** self-model is the **Thinker's** self-model:
= A simple body model + My autobiographical narrative history
- The **DC** self-mode is the **Doer's** self-model
= The full body model
- The **EC** self-model is the **Experiencer's** self-model
= **Either** NO self-model **OR** the self-model = the world-model

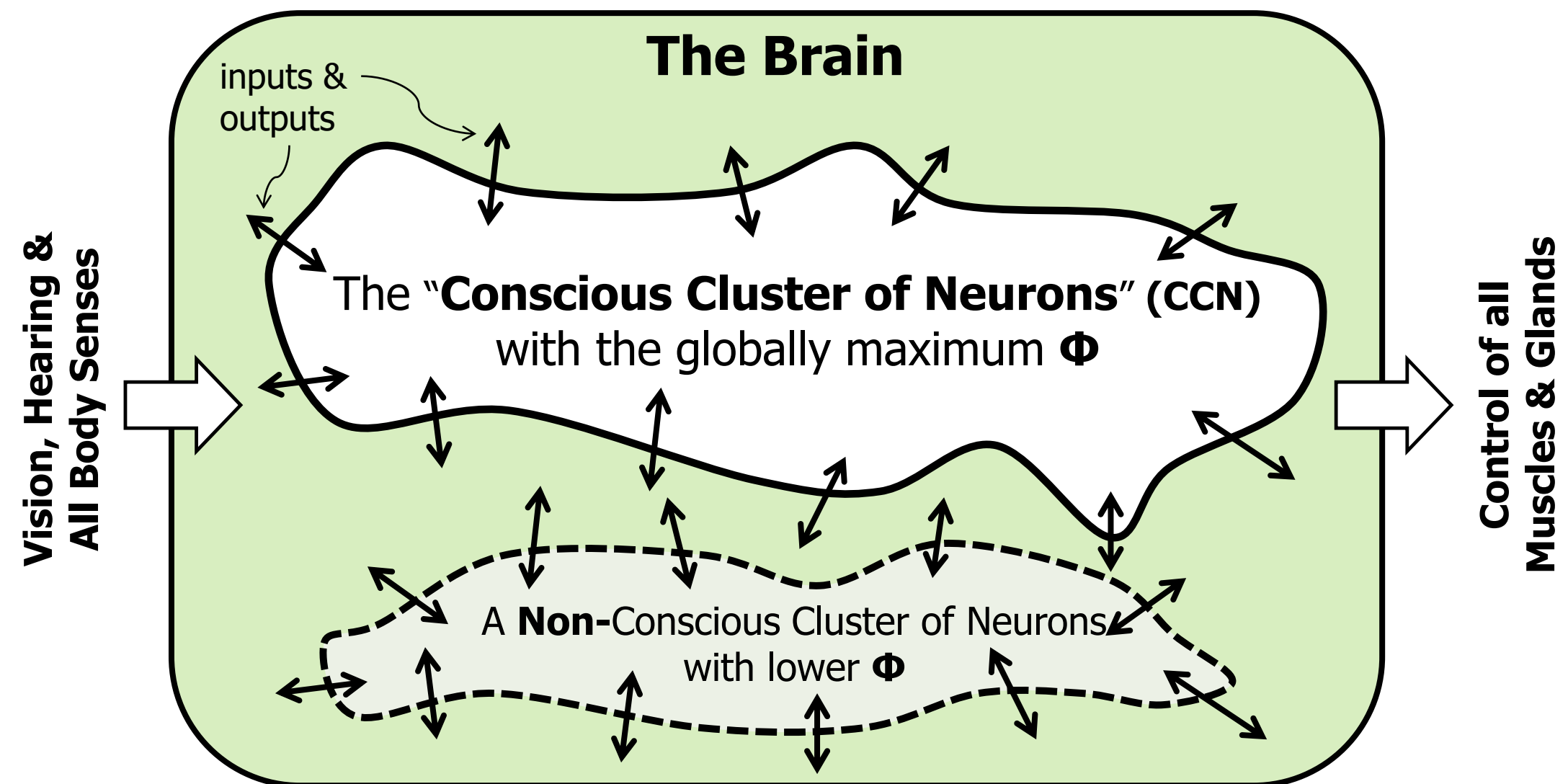
When the CCN contains most of an agent, the self-model of the CCN will match the self-model of the agent.

Integrated Information Theory⁽¹⁾ (IIT)

- **IIT** determines the portion of the brain which is conscious.
That is, the **Conscious Cluster of Neurons (CCN)**.

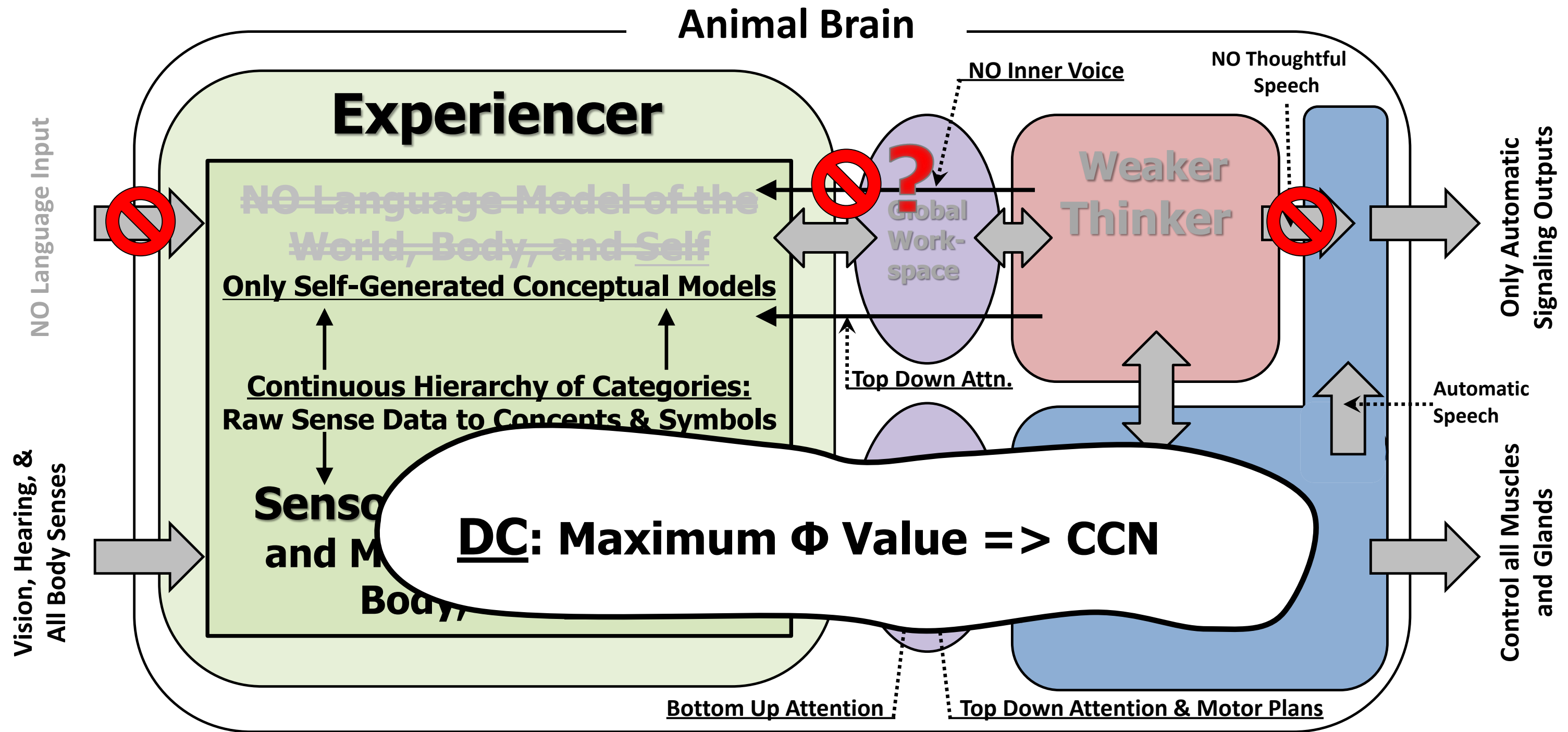
The symbol Φ represents the amount of integrated information in any given cluster of neurons.

For a given system, the cluster of neurons with the globally maximum Φ value is the CCN.

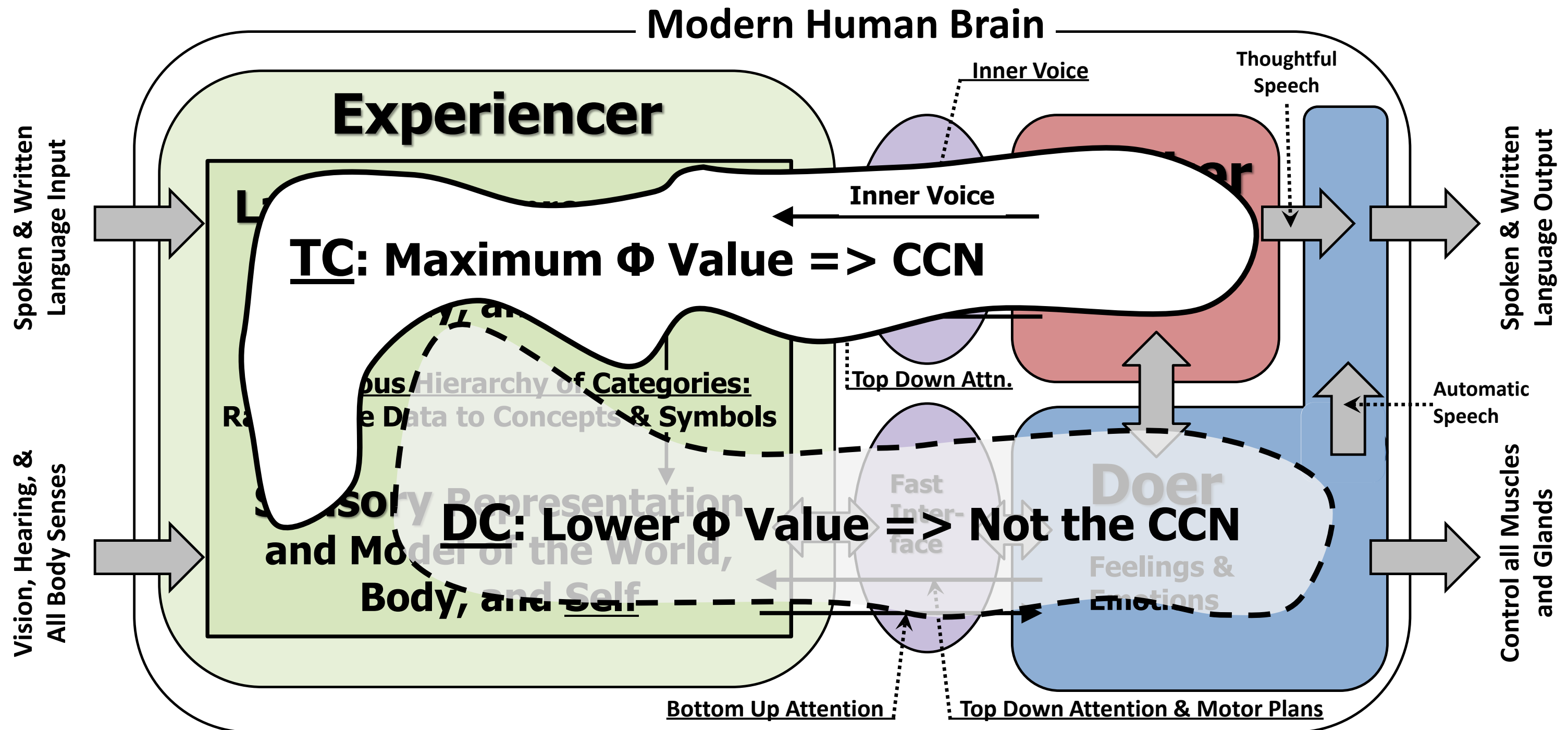


(1) Proposed by neuroscientist Giulio Tononi

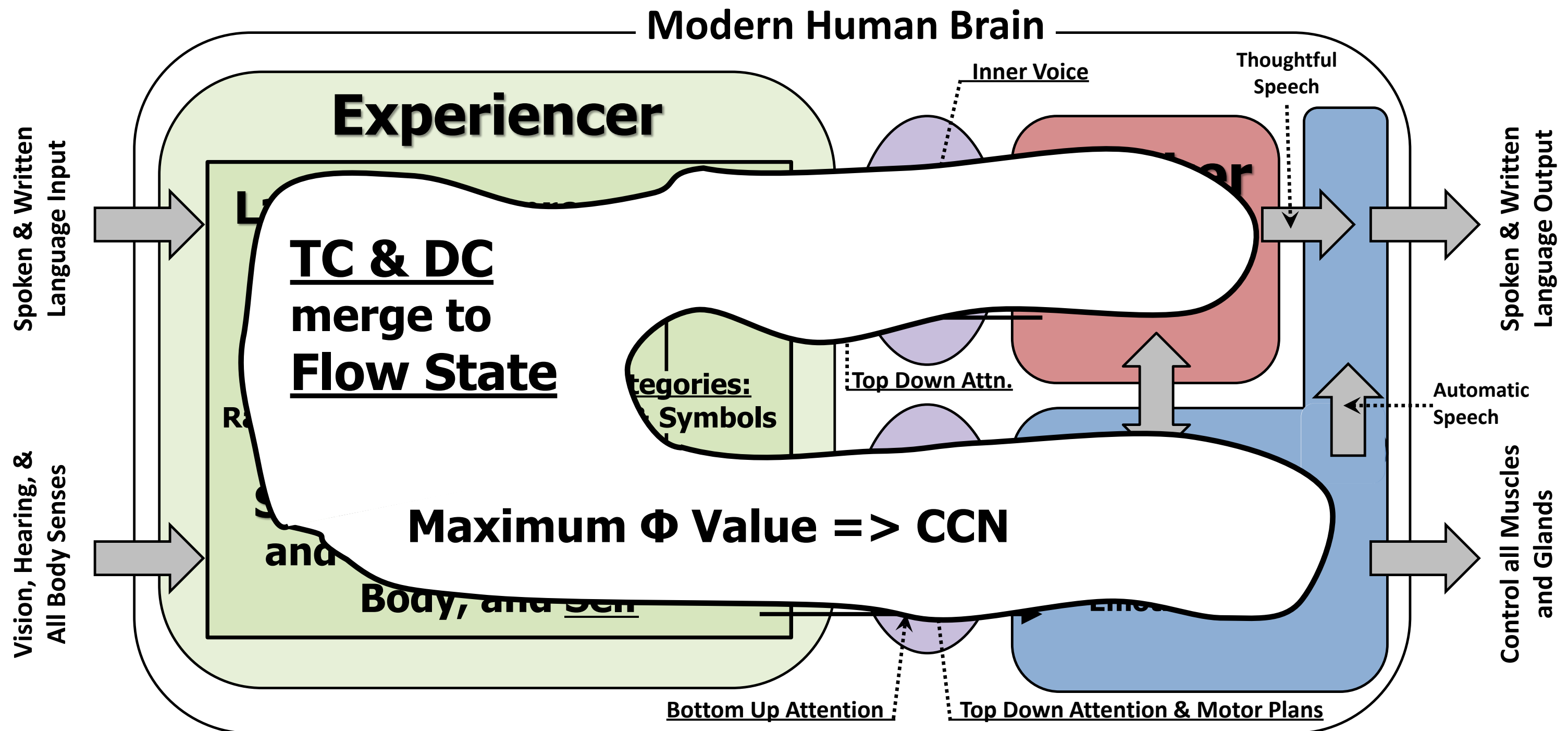
Animal's (or Ancient Human's) CCN = DC:



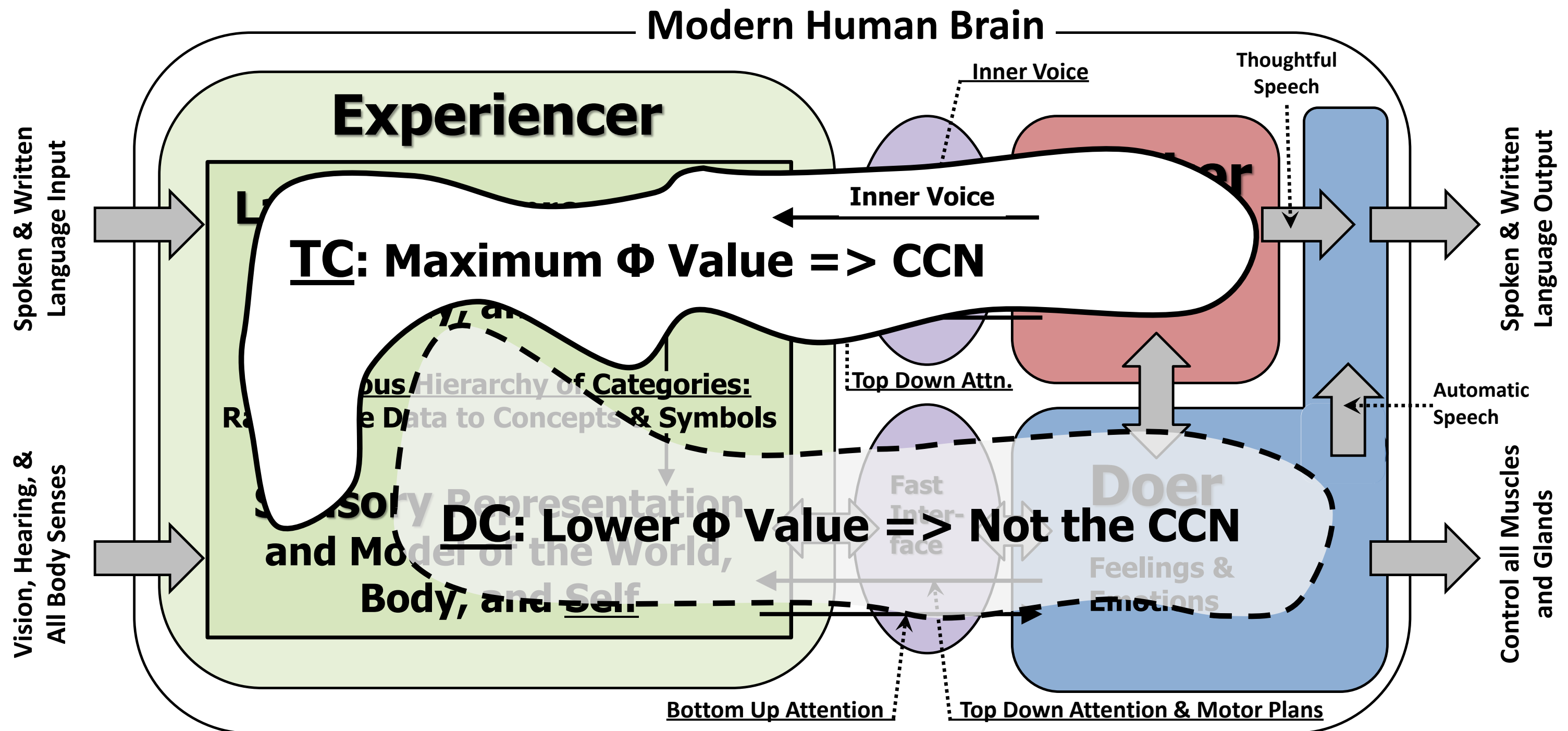
Modern Human CCN = TC:



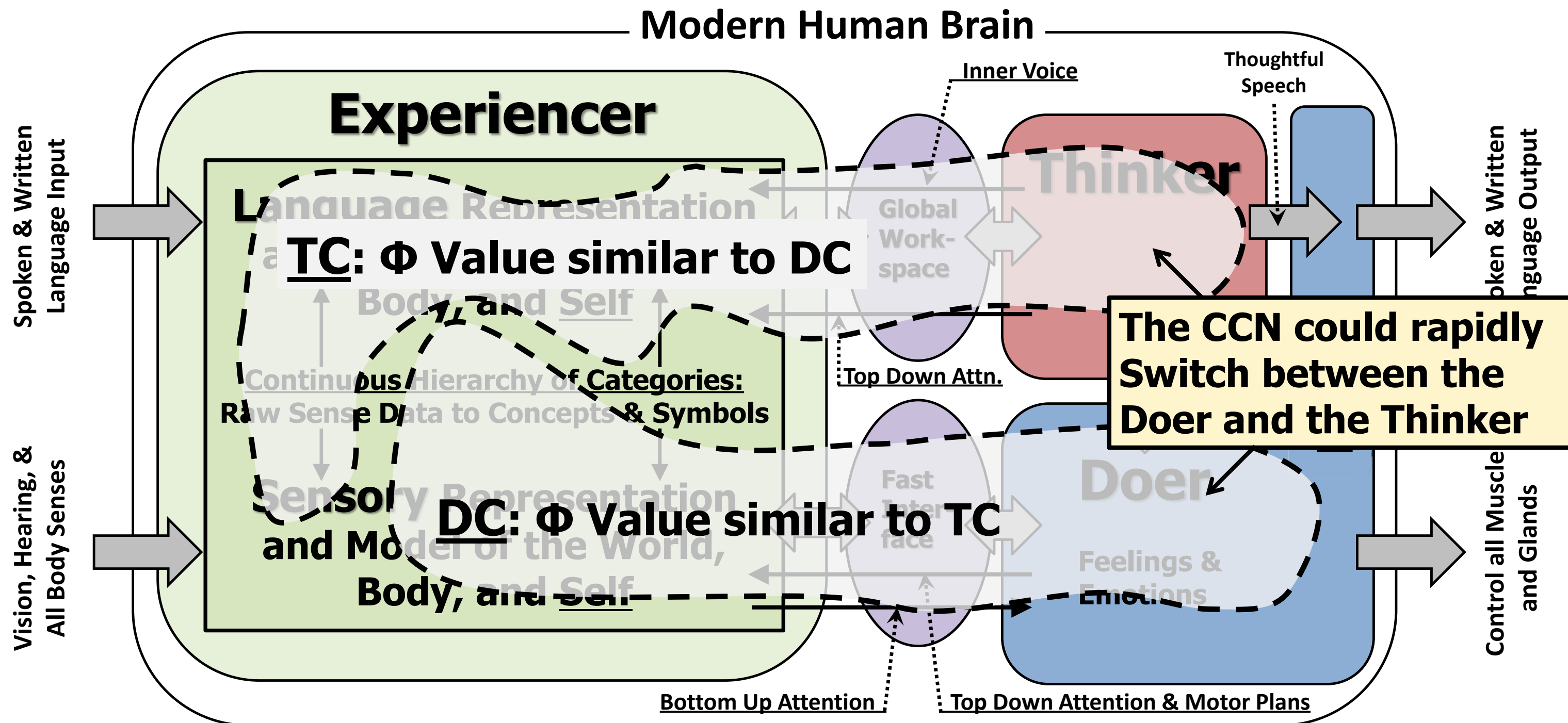
Flow State?:



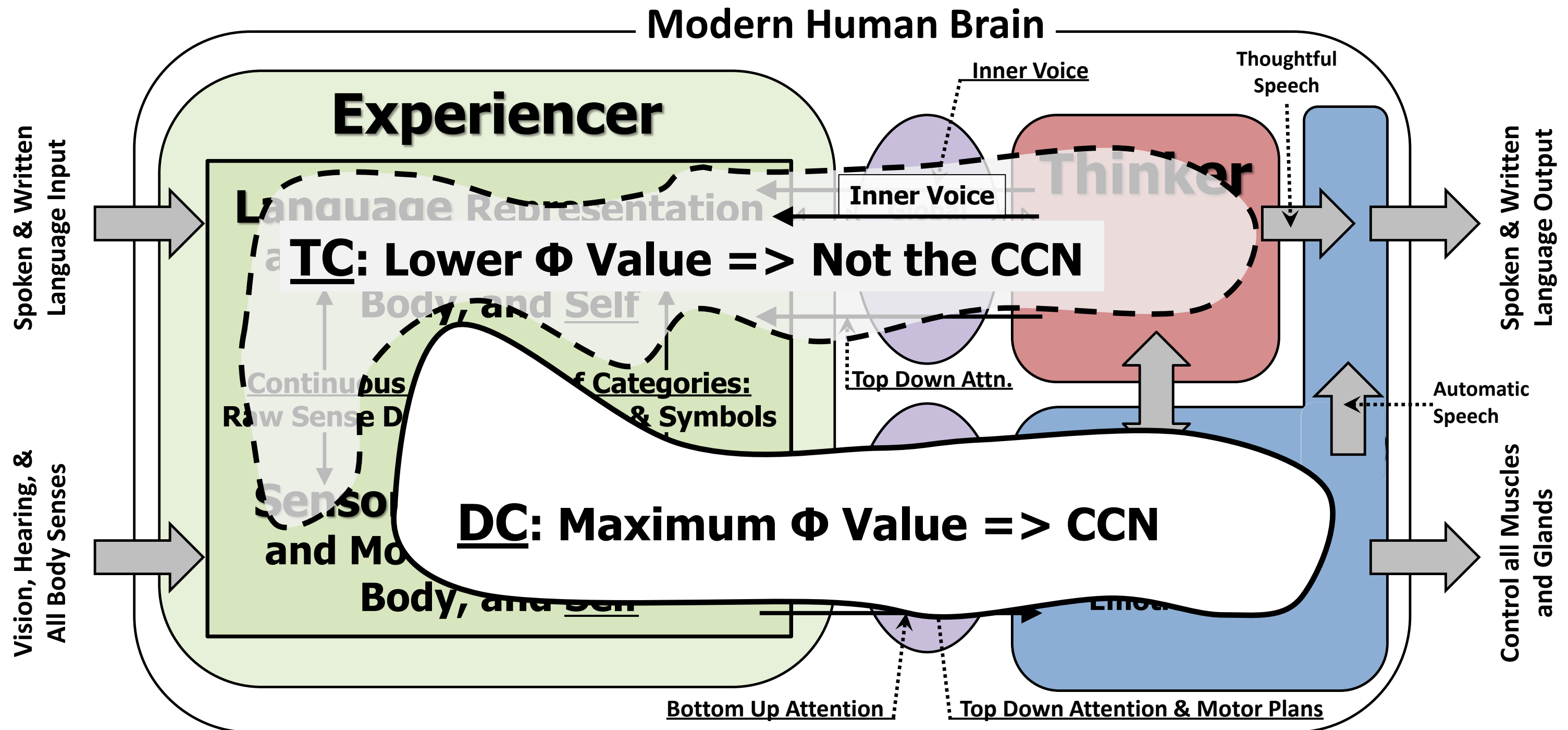
Modern Human CCN = TC:



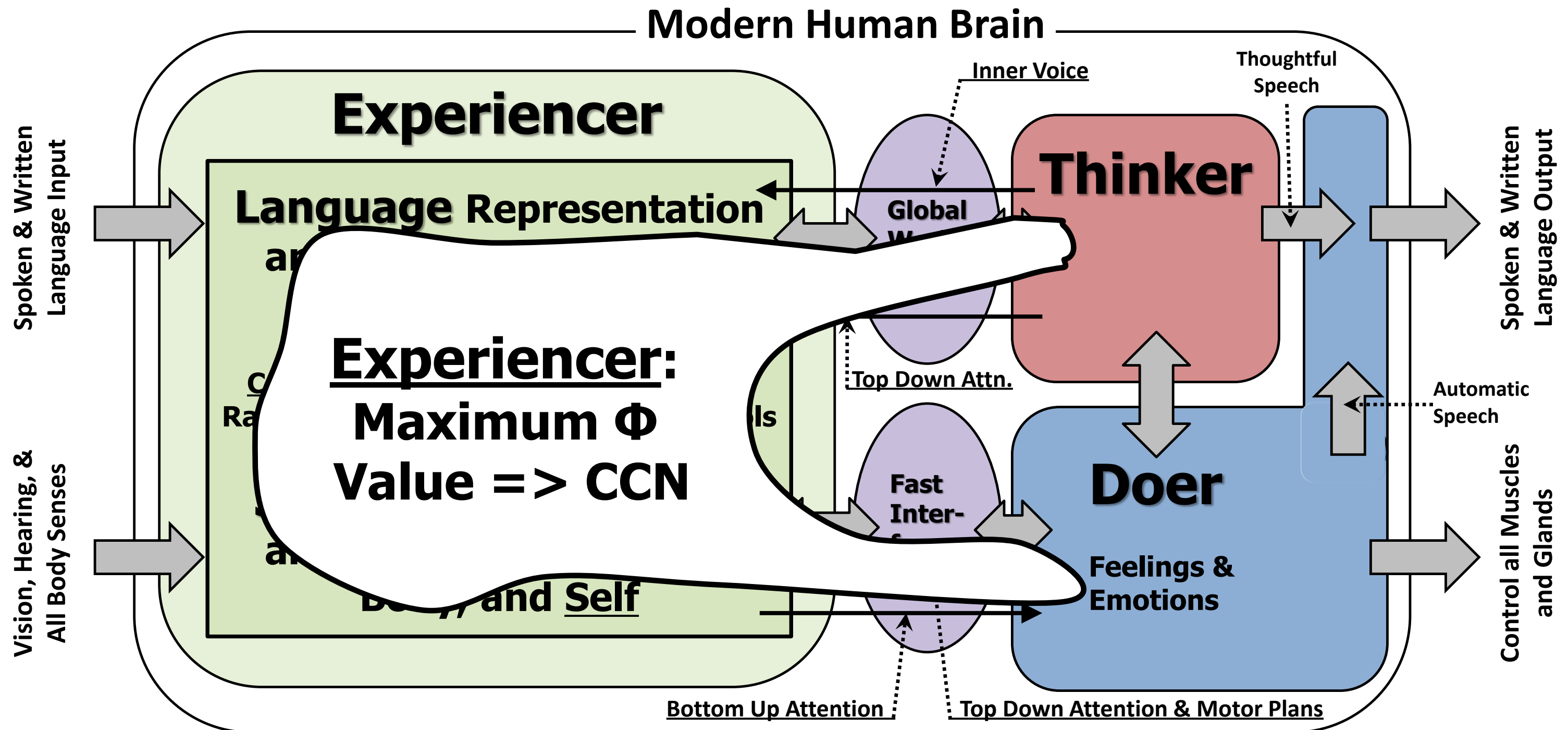
Enlightenment Begins:



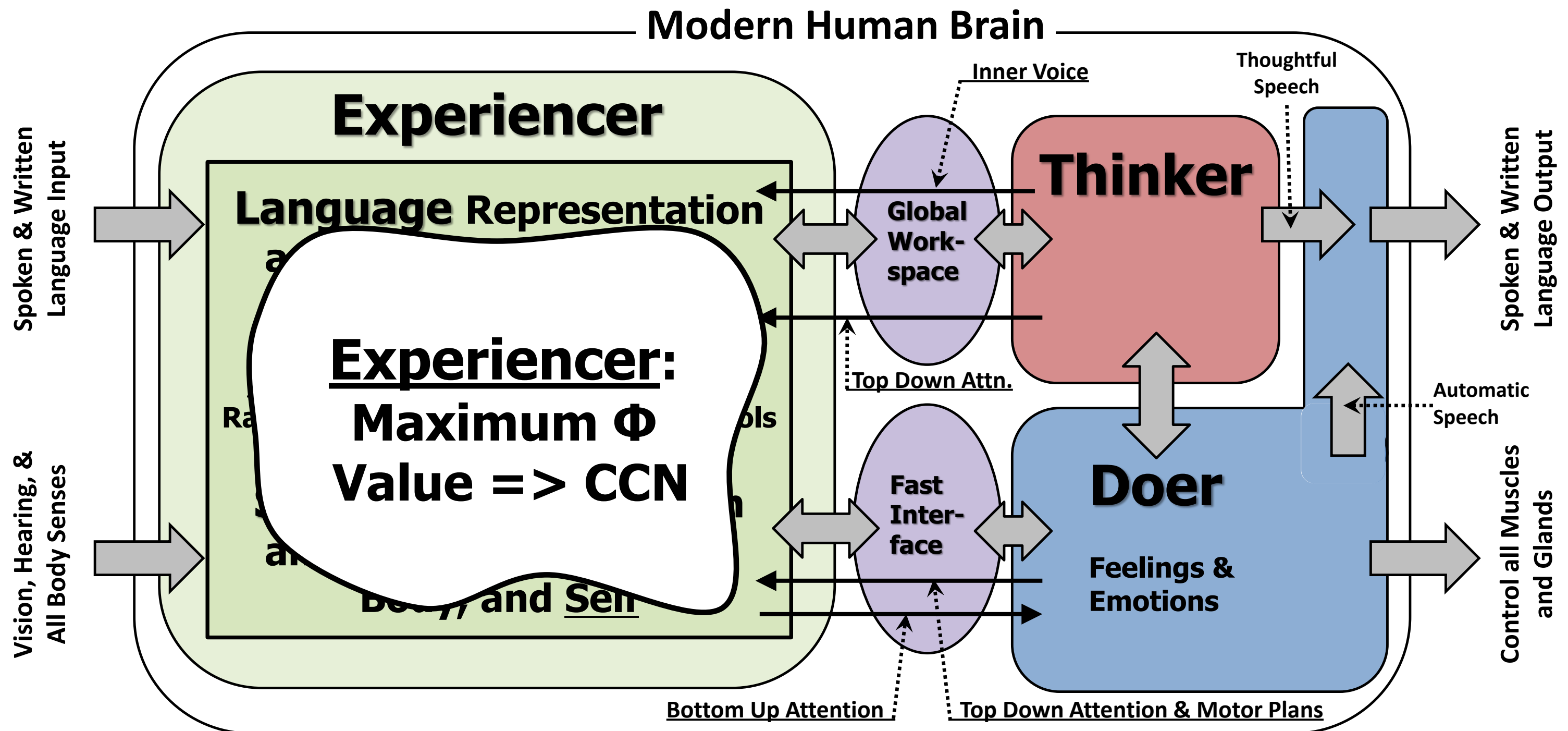
First Enlightened CCN:



Early Nondual CCN:



Fully Nondual CCN:





End of Presentation