

# HUMOR: NOT JUST A LAUGHING MATTER!



**Susan Flewelling Goran**

# 5-WEEK COURSE

- Week 1: Introduction to the humorous experience
- Week 2: Why did humor develop? The Humor Theories
- Week 3: The physiologic and psychological benefits of humor
- Week 4: The societal impacts of humor
- Week 5: Humor in the aging process

# CLASS 1 LEARNING OBJECTIVES

- ✓ List the 3 components of the humorous experience.
- ✓ Contrast mirth and wit.
- ✓ Describe the impact of laughter on the brain.
- ✓ Discuss why babies laugh without cognitive understanding.



# Definitions of Humor

How do you define humor?

- Partner with a person on your left or right
- Discuss your definitions of humor
- Can you provide a consensus definition of humor?

# Definitions of Humor

- ‘fun that’s funny’
- ‘The sensation of feeling good all over but just showing it in one place’
- ‘Jogging of the internal organs’
- ‘any communication which is perceived by any of the interacting parties as humorous and leads to laughing, smiling and a feeling of amusement’
- ‘emotional chaos remembered in tranquility’
- ‘a way to disengage from seriousness’



Photo by Johnny  
Cohen on Unsplash

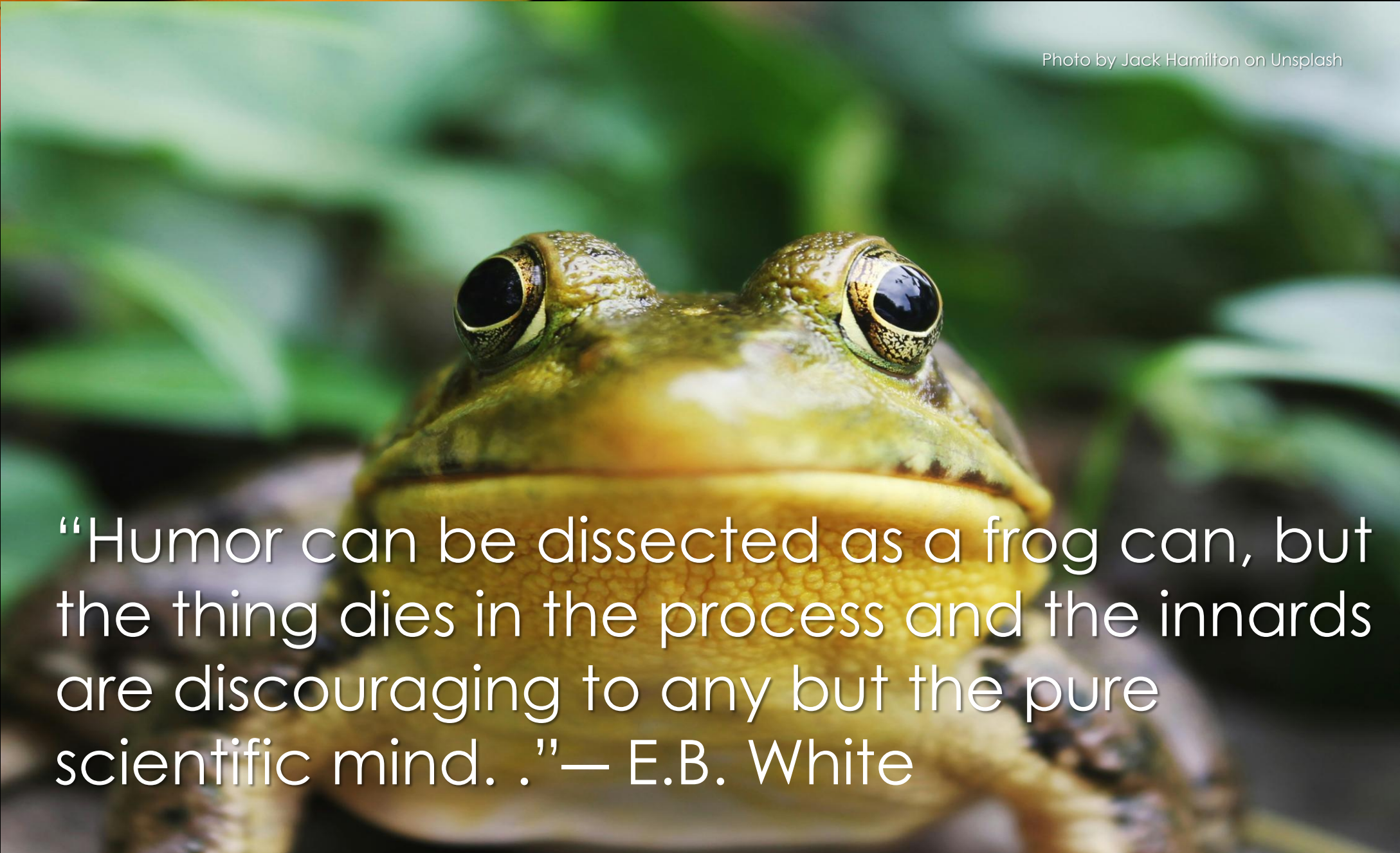
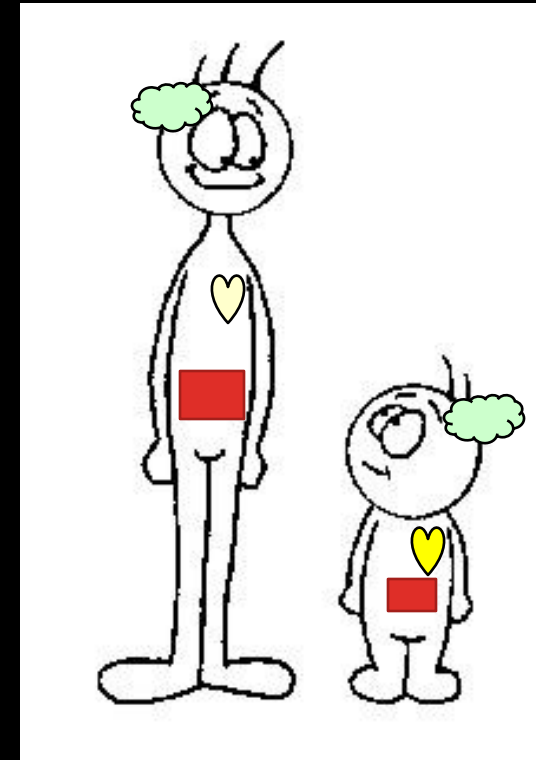
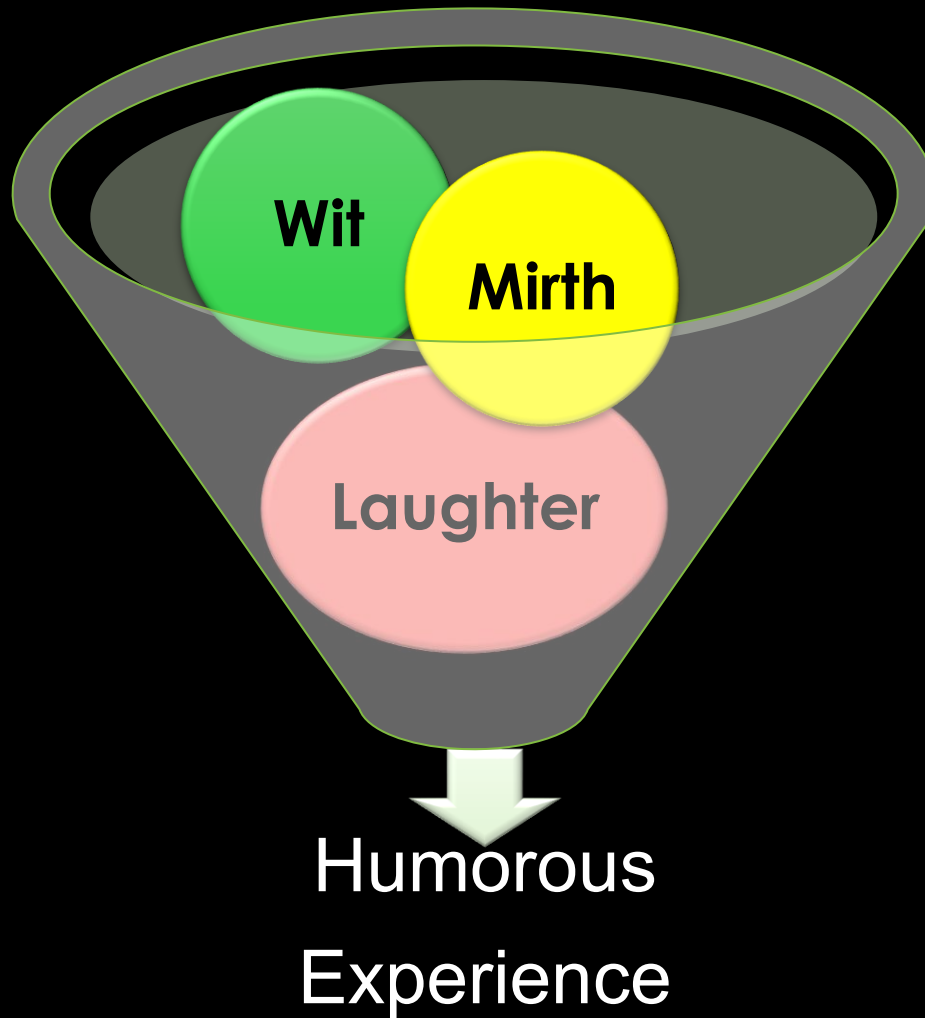


Photo by Jack Hamilton on Unsplash

“Humor can be dissected as a frog can, but the thing dies in the process and the innards are discouraging to any but the pure scientific mind. .”— E.B. White

# THE COCKTAIL OF THE HUMOROUS EXPERIENCE



# HUMOROUS EXPERIENCE COCKTAIL: *WIT*

- *Wit* as a thought-oriented experience
- Brain make assumptions (especially in jokes) based on prior experience; neuron pathway is built
- A joke guides us down 1 path only to be tricked to an alternative path (the punch line)
- Changes cognitive process, appreciation, or thinking
- Reduces negative thinking
- Natural aptitude for using words and ideas in a quick and inventive way to create humor.



“trainwrecks of the mind”  
N. Cousins

# WORLD'S FUNNIEST JOKE

- Richard Wiseman, professor of psychology at the University of Hertfordshire in the UK
- Experiment, named LaughLab, a website where people could rate and submit jokes.
- Purpose: discovering the joke that had the widest appeal and understanding among different cultures, demographics and countries.



[https://en.wikipedia.org/wiki/Richard\\_Wiseman](https://en.wikipedia.org/wiki/Richard_Wiseman)

# TYPES OF WIT

- "I'm not arguing; I'm just explaining why I'm right."
- When Lady Astor told Churchill, "If you were my husband, I'd put poison in your coffee", Churchill replied, "Madam, if you were my wife, I'd drink it".
- "I'm not saying you're lazy, but if a sloth was competing in a race against you, you'd probably be in second place."
- A dog gave birth to puppies near the road and was cited for littering.
- "If a black cat crosses your path, it signifies the animal is going somewhere." Groucho Marx

## Types of Wit

Mental sharpness, inventiveness and speed in communication.

|             |                        |               |
|-------------|------------------------|---------------|
| Retort      | Repartee               | Staircase Wit |
| Sarcasm     | Verbal Irony           | Euphemism     |
| Aphorism    | Cruel Wit              | Kairos        |
| Aposiopesis | Spontaneity            | Quip          |
| Humor       | Deadpan                | Dry Wit       |
| Wisecrack   | Self-deprecating Humor | Puns          |
| Satire      |                        |               |

# HUMOROUS EXPERIENCE COCKTAIL: *MIRTH*

- Mirth...the emotional response (joy)
- Webster: gladness or gaiety as shown by or accompanied with laughter
- Mirth provides pleasure, happiness, etc.; a way to disengage from seriousness; a 'playful-turn'
- During sensation of mirth, negative feelings, at least temporarily, are eliminated
- Mirth without cognitive or physiological reaction: 'silly behavior' or children



# HUMOROUS EXPERIENCE COCKTAIL: LAUGHTER

- The physiological experience...
- Nonverbal vocalization occurring in every known culture, ubiquitous across all forms of human social interaction  
<https://pubmed.ncbi.nlm.nih.gov/30044711/>
- Can experience laughter without wit or mirth... spontaneous laughter or laughter contagion
- In humans, laughter predates human speech by perhaps millions of years.
- "Laughter isn't under our conscious control," says Provine. "We don't choose to laugh in the same way that we choose to speak." If you've ever had an inopportune laughing fit -- in a lecture, during a high school play, or at a funeral, for instance -- you know that laughter can't always be tamed."

Robert Provine, professor of psychology and neuroscience at the University of Maryland Baltimore County, author, *Laughter: a Scientific Investigation*.

# LAUGHTER: THE HIDDEN LANGUAGE



# THE SOUNDS OF LAUGHTER



- *Sound*

- R Provine, MD, PhD (Behavioral Neurobiologist):  
“sonic structure of laughter”
- Variations on a theme repeated every 210 milliseconds
- “ha-ha-ha” or “ho-ho-ho”; never mixed; part of the universal human vocabulary & recognized by people of all cultures

- Watch this video with a partner
- Listen to the laughter and identify whether you hear a ha-ha or a ho-ho



# TYPES OF LAUGHTER

- Display of amusement: is called Duchenne laughter, after scholar Guillaume-Benjamin-Amand Duchenne de Boulogne, who first described it in the mid-19th century. Conversely, non-Duchenne laughter is a studied and not very emotional imitation of spontaneous laughter. People employ it as a voluntary social strategy—for example, when their smiles and laughter punctuate ordinary conversations, even when those chats are not particularly funny.
- *Spontaneous* and *volitional* laughs: generated by different vocal production mechanisms, *articulators* (the parts of the body, primarily within the vocal tract, that shape and modify the airflow from the lungs to produce speech sounds including lips, tongue, teeth, hard palate, soft palate (velum), and pharynx)

Kamiloğlu Roza G., Tanaka Akihiro, Scott Sophie K. and Sauter Disa A. 2022 Perception of group membership from spontaneous and volitional laughter Phil. Trans. R. Soc. B37720200404

# SPONTANEOUS: (TRUE)

- ✓ Generated by an evolutionarily conserved vocal production system
- ✓ Reflective of play vocalizations in nonhuman primates
- ✓ Little control; minimal supralaryngeal modulation, as the articulators are mostly in their resting positions
- ✓ Unbidden, emotion-triggered production of sound, often involuntary and a sign of joy or happiness, and can be contagious.



# VOLITIONAL: (FAKE)



- Involves more complex coordination of articulators and thus requires greater volitional control
- Controlled by regions of the lateral motor cortex associated with learned vocalizations like speech
- Encodes information about the producer more reliably than does spontaneous laughter

# WHICH IS 'REAL'

- Not equivalent in the ear of beholder
- Once we developed ability to vocalize and develop language = consciously mimic laughter; deceptive tool to artificially quicken and expand social bonds leading to improved survival
  - Spontaneous laughter is characterized by higher pitch (indicative of genuine arousal), shorter duration and shorter laugh bursts compared to volitional laughter.
  - Human listeners can distinguish between these two laugh types:
    - Gregory A., Bryant, C., Athena Aktipis (2014). The animal nature of spontaneous human laughter. *Evolution and Human Behavior*;35(4), 327-335;
    - Kamiloğlu Roza G., Tanaka Akihiro, Scott Sophie K. and Sauter Disa A. (2022). Perception of group membership from spontaneous and volitional laughter. *Phil. Trans. R. Soc. B*37720200404
    - <http://doi.org/10.1098/rstb.2020.0404>;
- Friends are more likely to produce spontaneous laughs
- Strangers/coworkers who lack an established emotional connection are more likely to produce volitional laughter

# DUCHENNE SMILES



Non-Duchenne or "False Smile"

Duchenne or "Genuine Smile"

- <https://www.sciencedirect.com/topics/psychology/duchenne-smile>
- True smiles and false (conscious) smiles
- Eye constriction caused by orbicularis oculi, pars lateralis, which raises the cheeks toward the eyes; the lower eyelids dilate and the corners of the eye wrinkle
  - Infants tend to produce Duchenne smiles when their mothers are smiling as they walk towards them
  - Associated with greater relative activation of the left than right frontal cerebral hemispheres, a pattern which suggests greater approach orientation and joy

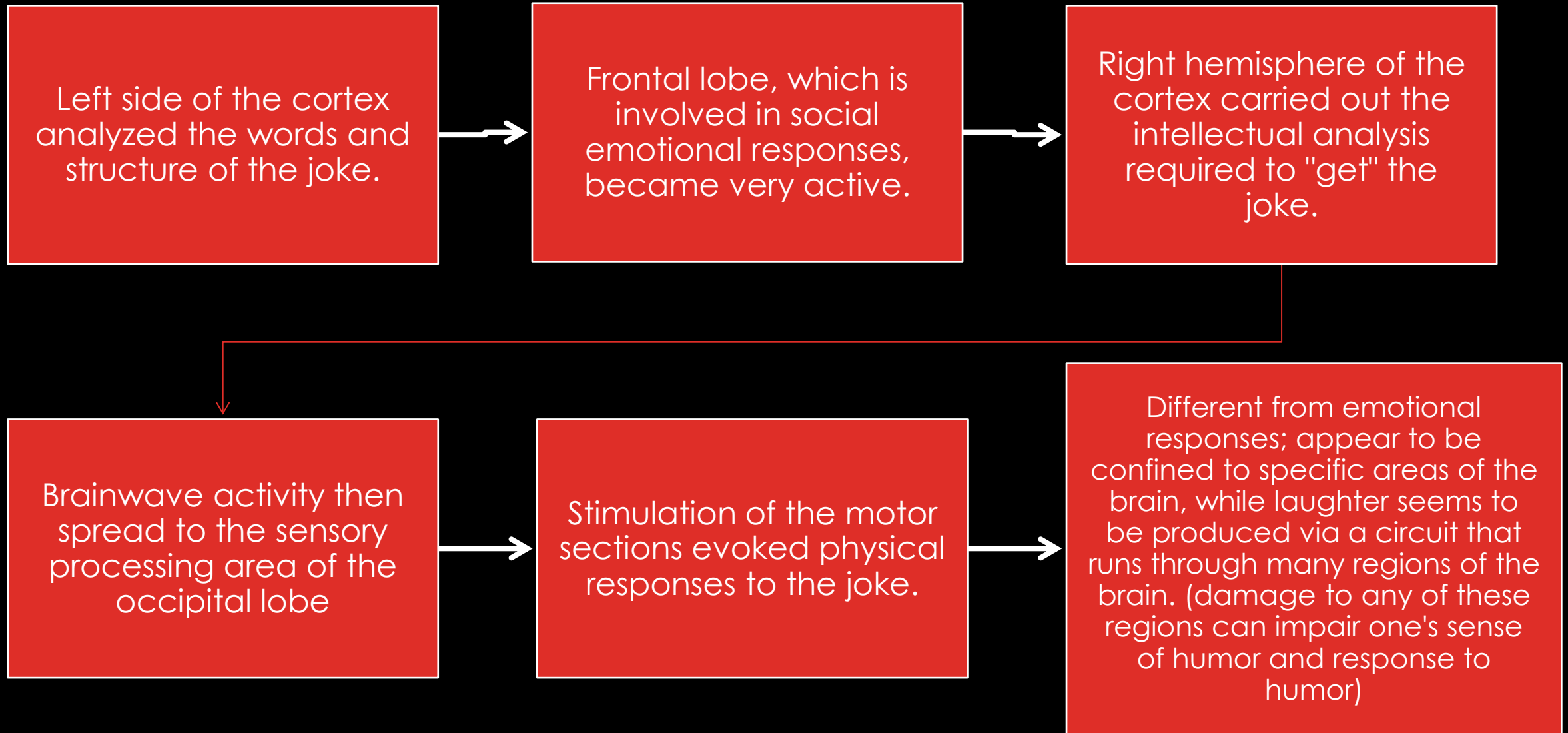


# THE BRAIN ON LAUGHTER

- Derks, P., Gillikin, L. S., Bartolome-Rull, D. S., & Bogart, E. H. (1997). Laughter and electroencephalographic activity. *Humor: International Journal of Humor Research*, 10(3), 285–300.  
<https://doi.org/10.1515/humr.1997.10.3.285>
- Looked at the electrical activity that occurs as we chuckle, giggle, or guffaw. About four-tenths of a second after we hear the punch line of a joke—but before we laugh—a wave of electricity sweeps through the cortex



# THE ELECTRICAL WAVE TRAVELS



# IMPACT OF HUMOR-ASSOCIATED MIRTHFUL LAUGHTER

EEG to explore the benefits of mirthful laughter vs stress

31 university students, ages 18–25, were recruited.

Subjects watched two 10-minute videos: 1) HAML task (America's Funniest Home Videos), and 2) Stress task (Saving Private Ryan movie scene).

During HAML:

- Increases in PSD (Power spectral density), most remarkably in gamma frequency
- Gamma oscillations play a “binding” role in higher cognitive processes, such as memory and processing of sensory stimuli
- HAML enhances short-term memory in elderly adults
- Increasing gamma activity through multi-sensory methods reduces amyloid-beta levels (Alzheimer's)

Berk L, Zamora F, Bains G, et al. (2020). Humor-Associated Mirthful Laughter and Brain Health: Predominance of Beneficial EEG Gamma Frequency and Beta/Gamma Interaction in the Cerebral Cortex. *The FASEB Journal*.

<https://doi.org/10.1096/fasebj.2020.34.s1.02303>

# WHEN DOES LAUGHTER BEGIN?

- Laughter precedes language both in infancy and in the evolutionary chain  
<https://www.scientificamerican.com/article/laughing-matters-mdash-and-helps-to-explain-how-babies-bond/>
- Whether a child is raised in Canada or Korea, Peru or Pakistan, her first laugh will delight her parents at about 14 to 18 weeks of age. A baby's laugh is easily recognizable, partly because of its genuineness.
- “gaze paradigm,” babies will gaze longer at a novel object, which at its most basic level reveals that they can differentiate it from a familiar one
- mis expectations of social behavior
- Spontaneous laughter, which is unintentionally triggered by conversation or events, emerges in the first few months of life, even in children who are deaf or blind.



Photo by Shot By Ireland on Unsplash

# LAUGHTER DEVELOPMENT

- Psychologists Diana Pien and Mary Rothbart, both then at the University of Oregon, proposed that humor perception does not necessarily require advanced cognitive skills.
- 30 parents to “do whatever you normally do to get your baby to laugh or smile,” they resorted to wildly exaggerated “clowning.”
- 3-4 months of age: 40% of babies laughed
- 5-6 months: 60% of babies laughed
  - **Social context:** clowning done by a social partner and often includes laughing & smiling = combination signals that the antics are safe, satisfying and joyful
  - **Familiarity factor:** repeat silly actions over and over again until the infant laughs and then because she or he has laughed = allows the infant to either predict the action and its outcome
  - **Magic/possibilities:** nonmagical nature of humorous events (mom wearing a cup on her head) may move infants beyond that initial state of wonder to a final state of humor.

<https://www.scientificamerican.com/article/laughing-matters-mdash-and-helps-to-explain-how-babies-bond/>

# WHY DO WE LAUGH WHEN TICKLED...EVEN IF WE HATE IT?

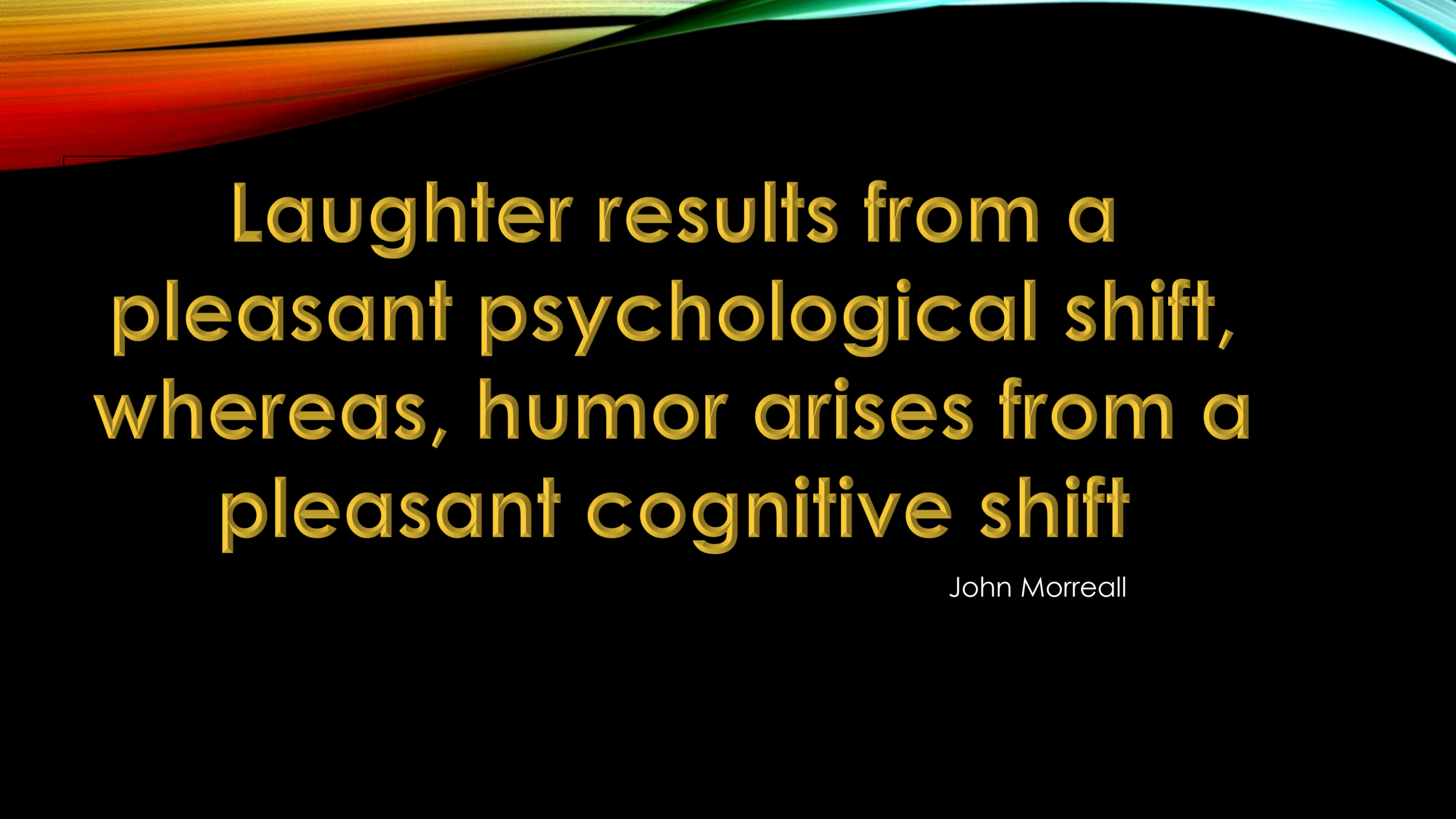
- **Automatic response**

- Also found in rats and monkeys
- Evolved in common mammal ancestors before we became modern humans before verbal communication
- Maybe it meant "I like you", and maybe laughing as a response meant "I like you too." Or maybe it was just a form of play. Or maybe it was sexual fore play.

[https://www.reddit.com/r/explainlikeimfive/comments/3t8s71/eli5\\_why\\_do\\_people\\_laugh\\_when\\_being\\_tickled\\_even/](https://www.reddit.com/r/explainlikeimfive/comments/3t8s71/eli5_why_do_people_laugh_when_being_tickled_even/)

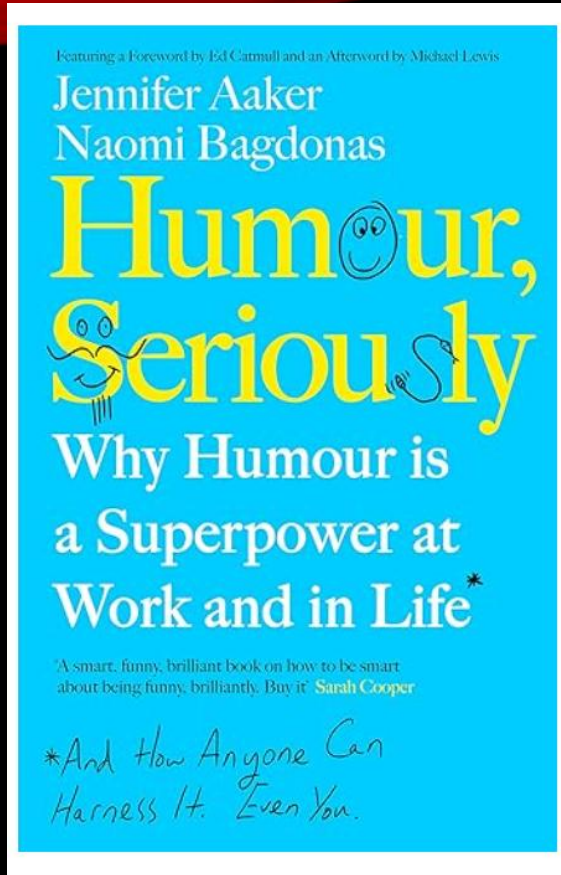
- Developed a whole higher order of consciousness and social rules that have many layers of complexity (boss vs employee)
- **Hysterical laughter**: you're experiencing *unmanageable emotional* excess as a result of an irrepressible physical response
- **Defense response**: about attacks on your vital organs; intense social activity that needs positive reinforcement, but we also try to struggle and break free, because that's the point of the lesson (kittens pouncing on each other; kids wrestling); send this signal out to show our submission to an aggressor, to dispel a tense situation and prevent us from getting hurt <https://www.bbc.com/future/article/20140131-why-do-we-laugh-when-tickled>



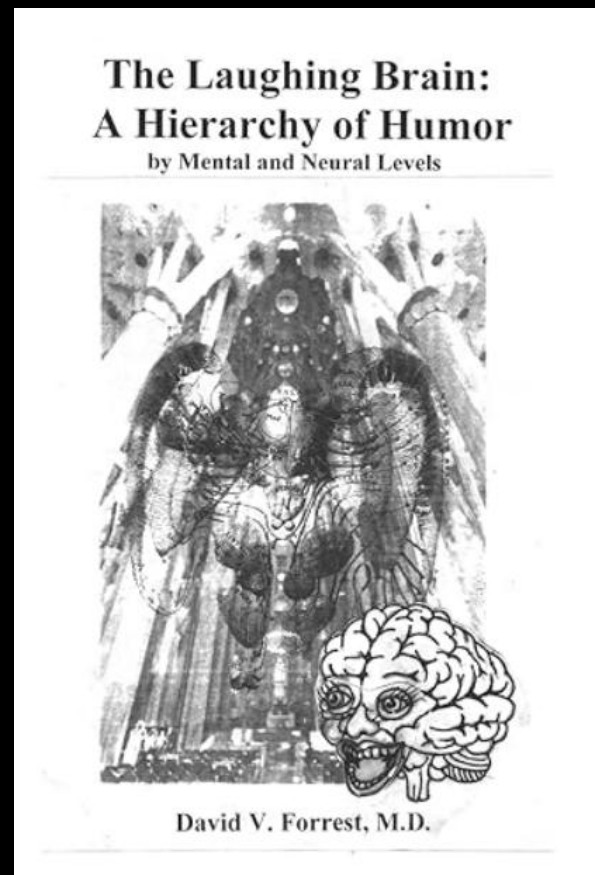


Laughter results from a  
pleasant psychological shift,  
whereas, humor arises from a  
pleasant cognitive shift

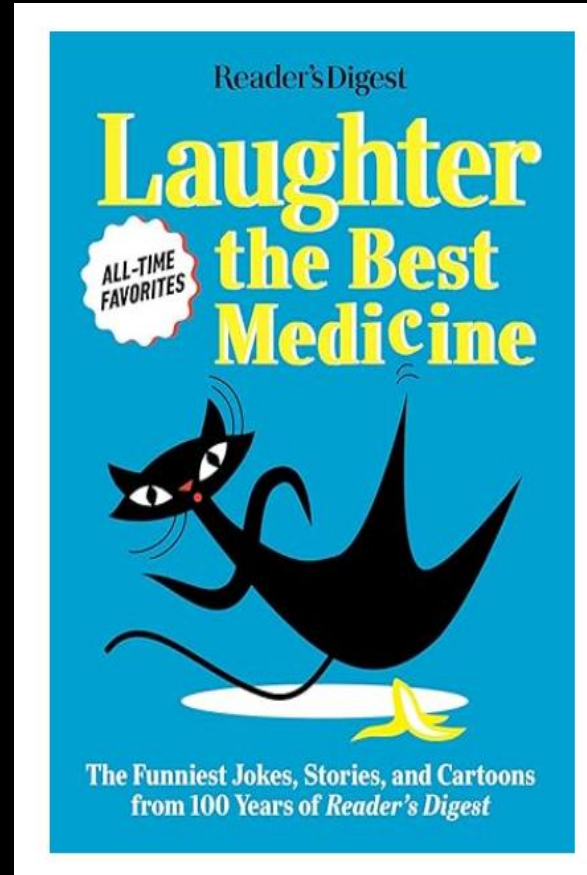
John Morreall



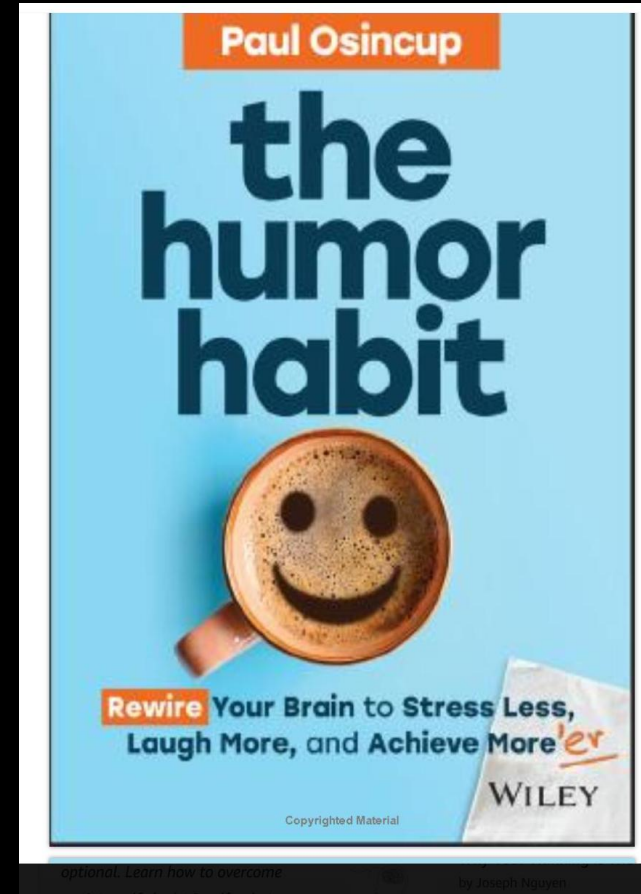
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Amazon \$23.50



2020  
Amazon \$12.99  
Walmart \$12.99



2022  
Amazon \$8.99



2024  
Amazon \$21.35  
Walmart \$20.14



Photo by Leeloo The First:  
<https://www.pexels.com/photo/question-marks-on-paper-crafts-5428836/>