#### 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'

"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: W/T

- 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 the public understanding of psychology at the University of Hertfordshire in the UK.
- For his experiment, named LaughLab, he created 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.



# TYPES OF WIT

#### 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		
https://simplicable.com/talent/wit		Simplicable

- "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

#### 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

- Physiological response: "speaking in tongues"
  - Unconscious response to social and linguistic cues
- Gestures:
  - Involuntary actions
  - 15 facial muscles contract, stimulation of the zygomatic major muscle (lifts the upper lip)
  - Epiglottis half-closes the larynx making your gasp; mouth opens and closes in the struggle for oxygen
  - Tear ducts activated; face becomes red/purple
  - Contraction of muscles many parts of the body, even the arm, leg and trunk muscles

# 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

# TYPES OF LAUGHTER

 Spontaneous and volitional laughs are thought to be 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. 2022Perception of group membership from spontaneous and volitional laughterPhil, 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. B37720200404
    - <u>http://doi.org/10.1098/rstb.2020.0404</u>
  - 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

- <u>https://www.sciencedirect.com/topics/p</u> <u>sychology/duchenne-smile</u>
- 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



Mary's Hilarious Prayer



### 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.1997.10.3.2 85
- 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

Left side of the cortex analyzed the words and structure of the joke. Frontal lobe, which is involved in social emotional responses, became very active. Right hemisphere of the cortex carried out the intellectual analysis required to "get" the joke.

Brainwave activity then spread to the sensory processing area of the occipital lobe

Stimulation of the motor sections evoked physical responses to the joke. Different from emotional responses; appear to be confined to specific areas of the brain, while laughter seems to be produced via a circuit that runs through many regions of the brain. (damage to any of these regions can impair one's sense of humor and response to humor)

# 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-babiesbond/
- 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
- misexpectations 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.

## 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.

#### 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/318s71/eli5 why do people laugh when being tickled even/
- We developed a whole higher order of consciousness and social rules that have many layers of complexity on top of our hard wired animal brains. (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; an 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-fickled

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

John Morreall

Jennifer Aaker Naomi Bagdonas Humour, Sectiously Why Humour is a Superpower at Work and in Life<sup>\*</sup>

A smart, funny, brilliant book on how to be smart about being funny, brilliantly. Bny it' Sarah Cooper

\*And How Anyone Can Harness It. Even You. The Laughing Brain: A Hierarchy of Humor by Mental and Neural Levels





Paul Osincup the humor habit **Rewire Your Brain to Stress Less,** Laugh More, and Achieve More' WILEY Copyrighted Material

2020 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-markson-paper-crafts-5428836/