



THE SCIENCE OF HAPPINESS

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THE VERMONT FAMILY-BASED APPROACH



1. All health is rooted in emotional and behavioral health.
 2. All family members have emotional and behavioral strengths and vulnerabilities that exist on a spectrum.
 3. **The science of wellness can be applied universally to build strengths and ameliorate vulnerabilities.**
- Nutrition
 - Mindfulness
 - Exercise
 - Sleep
 - Positive parenting
 - Music
 - Community/social engagement
 - Reading

THE WELLNESS ENVIRONMENT



- College-age youth face tremendous stresses at a time when their emotional brains are much more developed than their planning brains.
- At this time, we send them off with great independence into environments rife with drugs, alcohol, sex, and academic pressure.
- The science of wellness can be applied universally to build strengths and ameliorate vulnerabilities.
- Fitness
- Mindfulness
- Mentoring
- Nutrition

THE WELLNES





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MUSIC & ARTS



FITNESS & SPORTS



HOBBIES & COOKING



ACADEMICS & LANGUAGES



OBJECTIVES

- Discuss definitions of happiness and problems of measurement
- Describe some historical context for a Science of Happiness and its modern iteration
- Define the scientific method
- Apply science to an important aspect of happiness: relationships

DEFINING HAPPINESS: WHAT IS HAPPINESS?

- Think, Pair, Share*
 - Take a moment to think about what makes people happy. How can you turn this into a definition of happiness itself?
 - Turn to someone near you and share your definition of happiness or your thoughts on what makes people happy

*(Lyman, 1981)

MEASURING HAPPINESS

- Self-report survey: pros and cons?
- Experience Sampling Method
- Measuring Character
 - E.g., VIA Strengths Survey



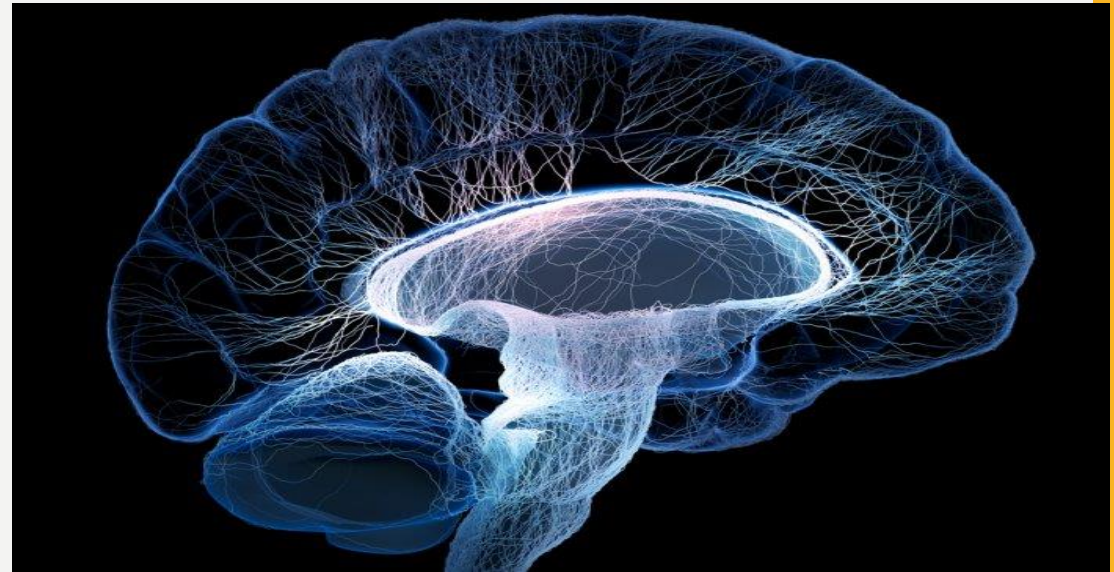
CAN WE CHANGE OUR MINDS (AND OUR HAPPINESS)?



THE BRAIN THAT CHANGES ITSELF*

- The scientific perspective is shifting more broadly from a plateau model of brain development (reach a certain point and you're done) to a model of ongoing development
 - Brain regions that get more use can change, rewire, and sometimes even generate new neurons
- Rodents in more stimulating environments had more neurotransmitters and better blood supply and bigger brains at death
- We now know this is also true in humans: enriching activities (like exercise, mindfulness) cause neuronal growth and reorganization, **throughout the lifespan**

*see Norman Doidge, 2007



THEORIES OF

FIXED MINDSET

- Intelligence doesn't change
- Effort = low intelligence
- Failure = lack of ability
- Trait praise: "You're really smart"
- Discourages trying new tasks where failure is possible
- More likely to give up on a task



Carol Dweck

INTELLIGENCE

GROWTH MINDSET

- Intelligence can be developed
- Effort = activating your abilities
- Failure = try harder or new strategy
- Process praise: "You tried really hard at this"
- Encourages new tasks as opportunities to learn new things
- Less likely to give up on a task

NOW YOU KNOW YOU CAN CHANGE YOUR BRAIN & CHANGE YOUR MIND....

- Where did positive psychology come from?
- And what can it do for me?



- “Stranger, here you will do well to tarry; here our highest good is **pleasure**.” (inscription on the gate to “the Garden,” Epicurus’s school of philosophy located in...his garden).
 - Modernly mistaken to mean hedonism, pursuit of pleasure above all else
- “Wealth beyond what is natural, is no more use than an overflowing container. Real value is not generated by theaters, and baths, perfumes or ointments, but by **philosophy**.”
- “He who is not **satisfied with a little**, is satisfied with nothing.”
- “**Self-sufficiency** is the greatest of all wealth.”
- “Of all the means which wisdom acquires to ensure happiness throughout the whole of life, by far the most important is **friendship**.”

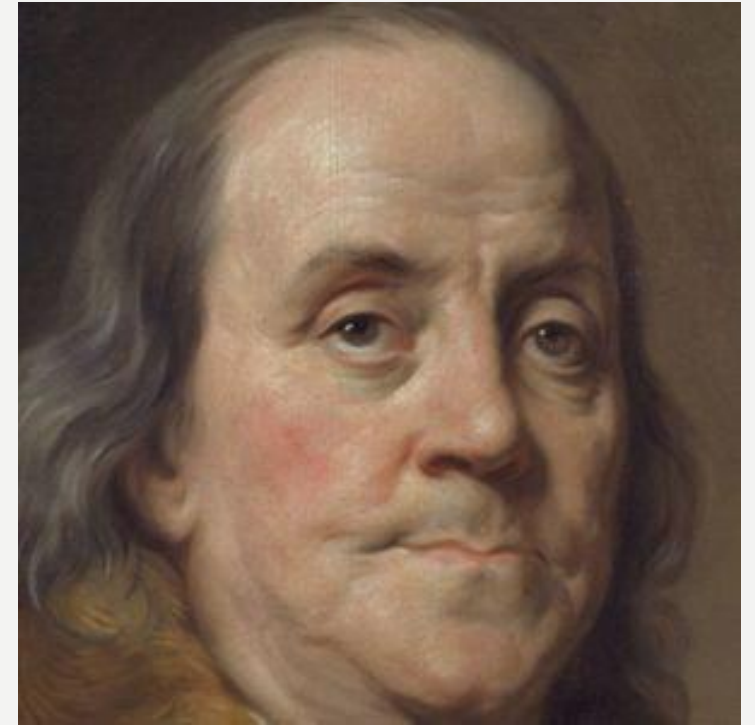
EPICURUS

(341 BC – 270 BC)



BENJAMIN FRANKLIN (1706-1790)

- It was about this time I conceiv'd the bold and arduous project of arriving at moral perfection. I wish'd to live without committing any fault at any time; I would conquer all that either natural inclination, custom, or company might lead me into. As I knew, or thought I knew, what was right and wrong, I did not see why I might not always do the one and avoid the other. But I soon found I had undertaken a task of more difficulty than I had imagined. While my care was employ'd in guarding against one fault, I was often surprised by another; habit took the advantage of inattention; inclination was sometimes too strong for reason. I concluded, at length, that the mere speculative conviction that it was our interest to be completely virtuous, was not sufficient to prevent our slipping; and that the contrary habits must be broken, and good ones acquired and established, before we can have any dependence on a steady, uniform rectitude of conduct.



BENJAMIN FRANKLIN (1706-1790)

- 1. TEMPERANCE. Eat not to dullness; drink not to elevation.
- 2. SILENCE. Speak not but what may benefit others or yourself; avoid trifling conversation.
- 3. ORDER. Let all your things have their places; let each part of your business have its time.
- 4. RESOLUTION. Resolve to perform what you ought; perform without fail what you resolve.
- 5. FRUGALITY. Make no expense but to do good to others or yourself; i.e., waste nothing.
- 6. INDUSTRY. Lose no time; be always employ'd in something useful; cut off all unnecessary actions.

BENJAMIN FRANKLIN (1706-1790)

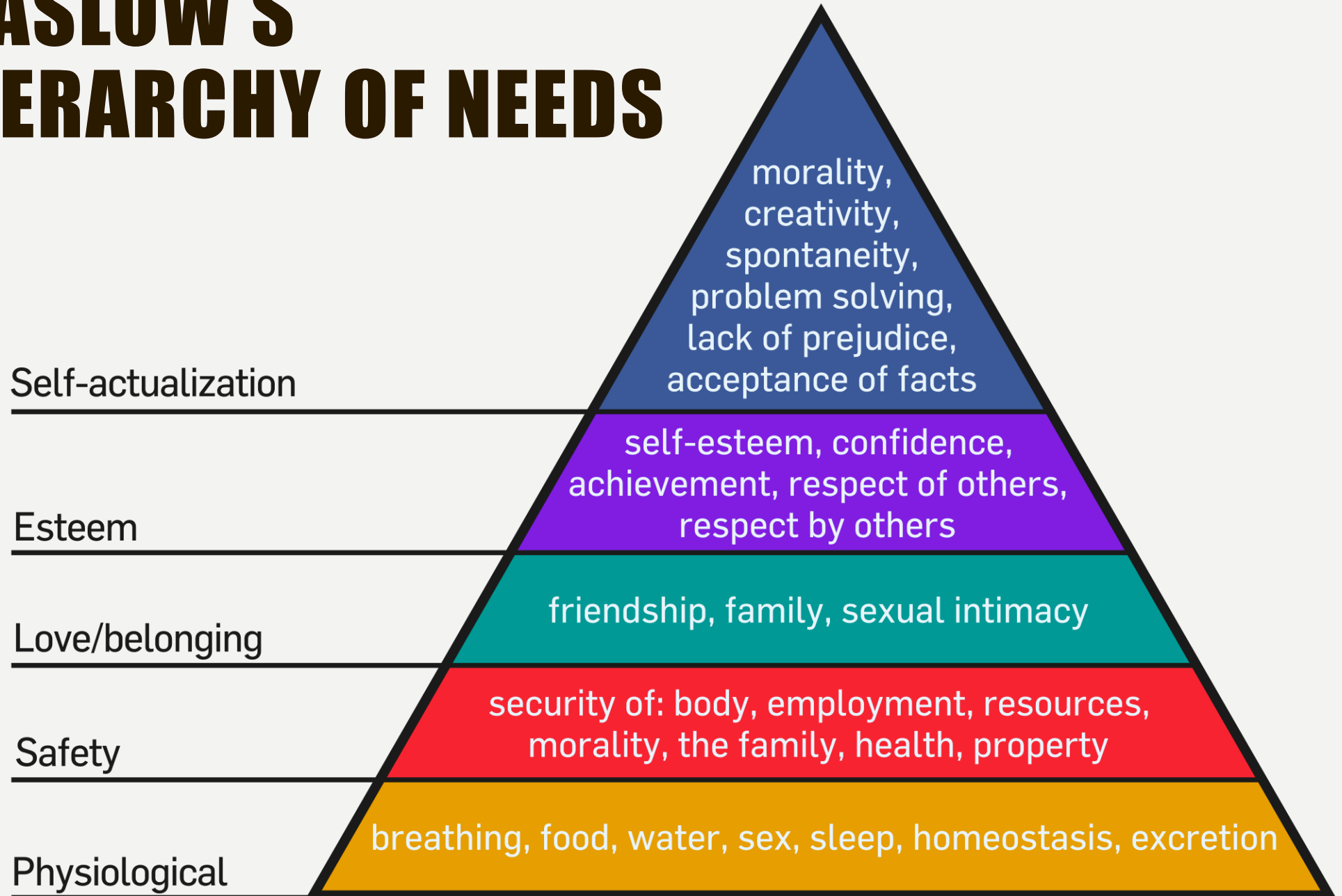
- 7. SINCERITY. Use no hurtful deceit; think innocently and justly, and, if you speak, speak accordingly.
- 8. JUSTICE. Wrong none by doing injuries, or omitting the benefits that are your duty.
- 9. MODERATION. Avoid extreams; forbear resenting injuries so much as you think they deserve.
- 10. CLEANLINESS. Tolerate no uncleanness in body, cloaths, or habitation.
- 11. TRANQUILLITY. Be not disturbed at trifles, or at accidents common or unavoidable.
- 12. CHASTITY. Rarely use venery but for health or offspring, never to dulness, weakness, or the injury of your own or another's peace or reputation.
- 13. HUMILITY. Imitate Jesus and Socrates.

WHAT IS POSITIVE PSYCHOLOGY?

- Coined by Abraham Maslow (1908-1970) in the 1950s to describe a focus on creativity and self-actualization



MASLOW'S HIERARCHY OF NEEDS



WHAT IS POSITIVE PSYCHOLOGY?

- Codified by Seligman around 1998 in recognition that psychology had lost 2 of its 3 original pillars:
 - Curing mental illness
 - Making the lives of all people productive & fulfilling
 - Identifying and nurturing talent



WHAT IS POSITIVE PSYCHOLOGY?

- **Holistic** psychology
- **Scientific** study of the good life, not just pleasure or happiness

THE GOOD, THE BAD, AND THE UGLY



THE GUEST HOUSE

This being human is a guest house.
Every morning a new arrival.

A joy, a depression, a meanness,
some momentary awareness comes
as an unexpected visitor.

Welcome and entertain them all!
Even if they're a crowd of sorrows,
who violently sweep your house
empty of its furniture,
still, treat each guest honorably.
He may be clearing you out
for some new delight.

The dark thought, the shame, the malice,
meet them at the door laughing,
and invite them in.

Be grateful for whoever comes,
because each has been sent
as a guide from beyond.





**SCIENCE OF HAPPINESS
OR....**

HAPPINESS OF SCIENCE?

SCIENTIFIC METHOD

OBSERVATION

HYPOTHESIS

REPRODUCE THE
EXPERIMENT

EXPERIMENT

Revision of
hypothesis

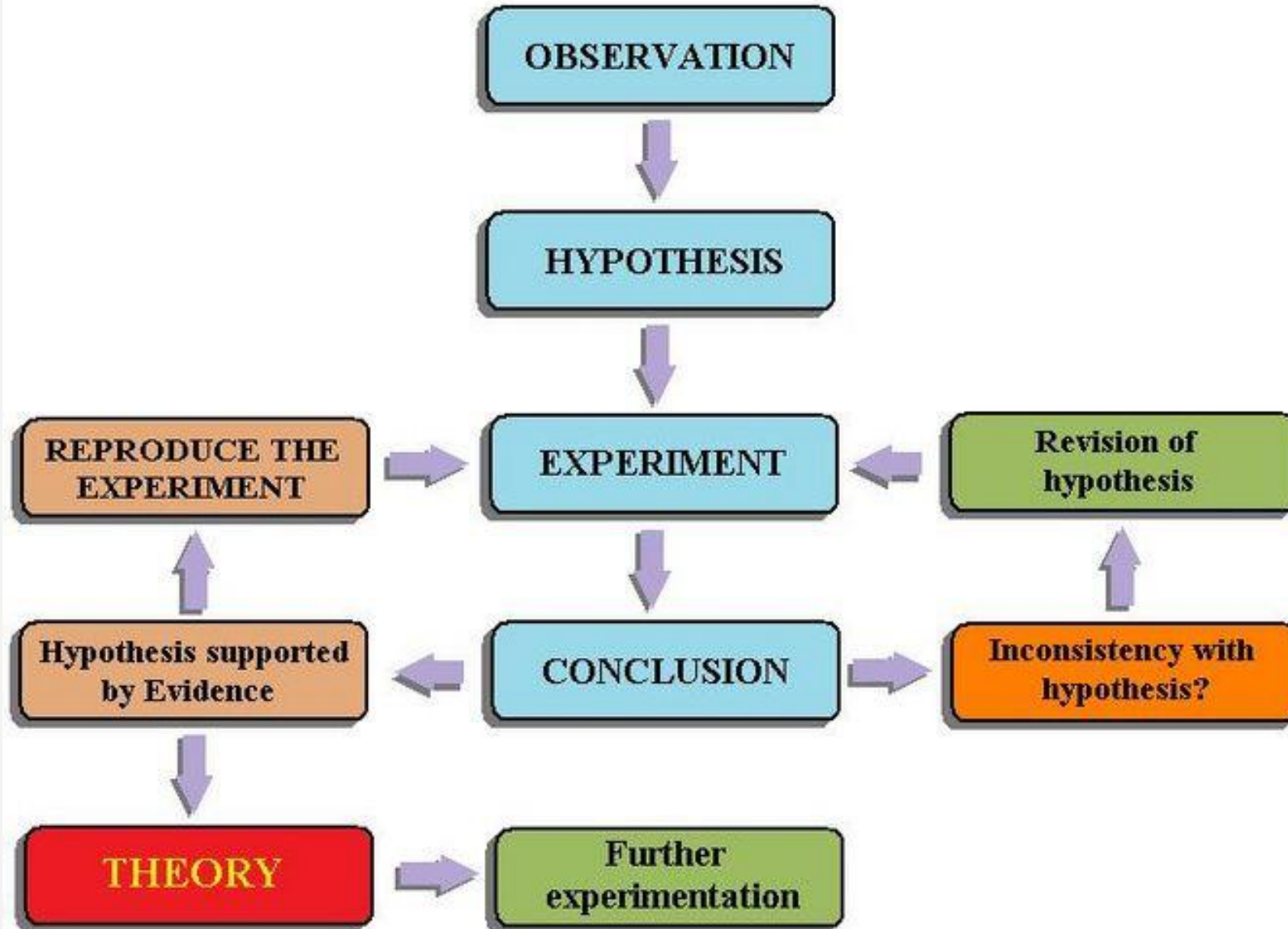
Hypothesis supported
by Evidence

CONCLUSION

Inconsistency with
hypothesis?

THEORY

Further
experimentation



THE (OBSERVATIONAL) SCIENCE BEHIND RUMI

- Does it help to welcome all emotions?
 - “61.1 percent of imprisoned airmen tortured for years by the North Vietnamese said that they had benefited psychologically from their ordeal. What’s more, the more severe their treatment, the greater the post-traumatic growth.”
 - “In an online questionnaire 1700 people endorsed experiencing a severe trauma (rape, death of a child, torture). Compared to the general population, on validated tests of well-being and character strengths this cohort who’d experienced one awful event had more intense strengths (and therefore higher well-being) than individuals who had none. Individuals who’d been through two awful events were stronger than individuals who had one, and individuals who had three—raped, tortured, and held captive for example—were stronger than those who had two.” *

*paraphrased from Seligman, M.E.P. (2011). *Flourish*. New York: Free Press. Chapter 8, pages 152-163

SO HAPPINESS IS NOT ALL...HAPPY

- What to do with the so-called negative emotions, (sadness, anger, shame, malice) without which our lives may not be full, rich, or complete?
- Answer: share them!
- Happiness researcher and teaching guru said before his death that an appropriate 3-word summary of positive psychology would go thus: “Other people matter.”

- What do relationships do for our brains?
 - Romantic love is ubiquitous and powerful
 - Leads to poetry, songs, lifelong bonds, crimes of passion, wars
 - Manifests behaviorally in similar ways to addiction
 - Can't get enough of it
 - Obsess about it
 - Spend exorbitant amounts of time getting/maintaining it at the expense of other pursuits/relationships
 - Hard to quit (withdrawal?), reminders may trigger relapse into obsessing, pining, feeling despondent
 - Can't control it; intrusive; involuntary
 - Distortion of reality
 - Risk-taking increases

**HELEN FISHER: RELATIONSHIP
NEUROSCIENCE**



HELEN FISHER: RELATIONSHIP NEUROSCIENCE

- Her hypothesis?
 - There is a neurocircuitry to passionate love and we can look at it to compare active romance vs. lost romance vs. long-term active romance
- She couches this in an evolutionary context:
 - Lust motivates one to find potential mates
 - Attraction helps you hone in on an optimal choice for your resources/genes & conserve mating energy
 - Romantic attachment helps you keep them around long enough to parent your offspring



HELEN FISHER: NEUROSCIENCE OF PASSIONATE LOVE



- Her methods?
 - Cross-sectional fMRI study surveying brain activity in different populations of lovers

HELEN FISHER: ROMANTIC LOVE

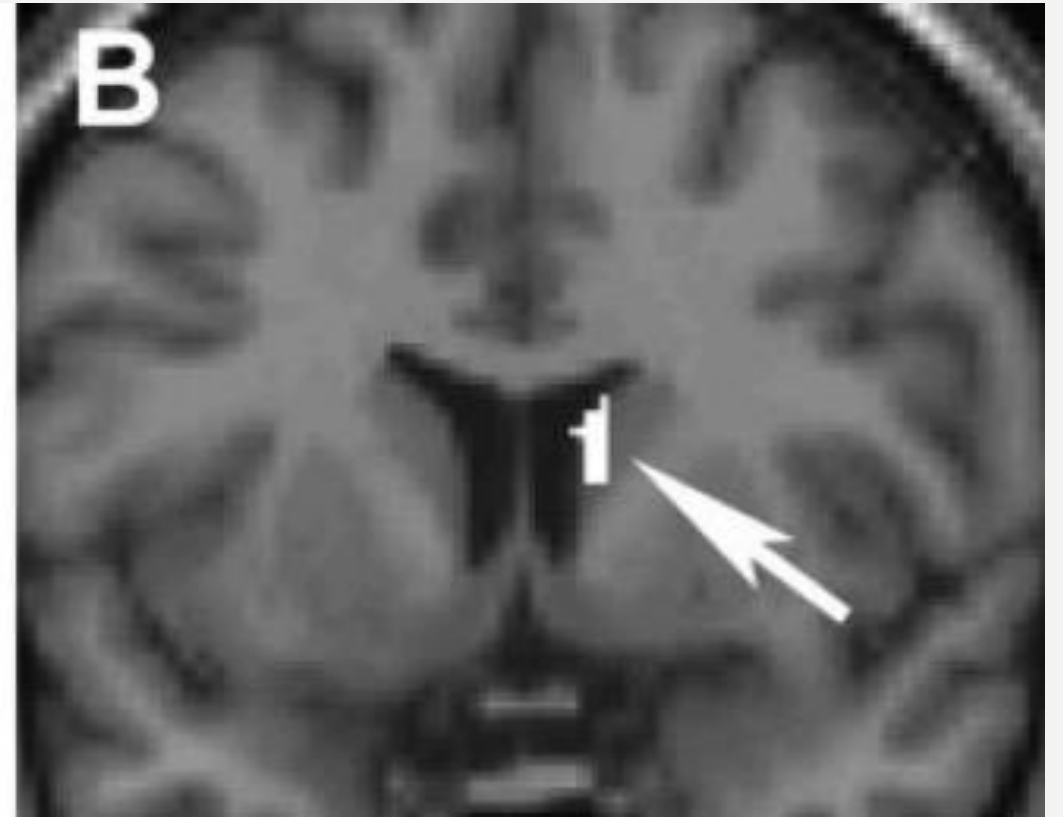
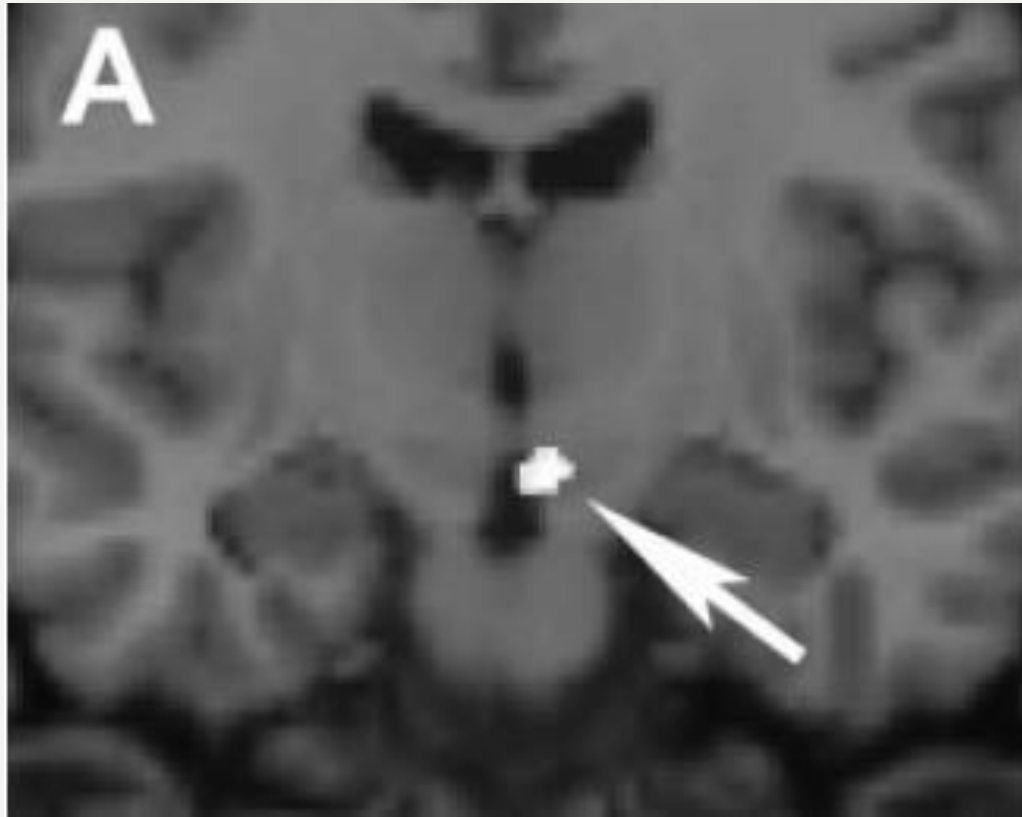
- What did she actually do? **Study I**
- 17 men and women (18-26 y.o.) intensely in love for 1-17 months, comparing brain activation during viewing of lover vs. viewing of acquaintance
 - Participants served as their own controls



- Activation specific to lover-viewing included:
 - Right VTA (pleasure, motivation, focused attention)
 - Caudate nucleus (reward predictions, integration of sensory input to prepare for action, activated by predicted monetary reward too)
- R caudate activation correlated with questionnaire-rated intensity of romantic love

HELEN FISHER: ROMANTIC LOVE





HELEN FISHER: ROMANTIC LOVE

HELEN FISHER: ROMANTIC LOVE

- Her conclusion?
 - Romantic love is basically a motivational system for helping you efficiently select an appropriate reproductive partner
- Replicable?
 - Bartels & Zeki (2000) found very similar results, also Ortigue et al. 2007 & Xu et al. 2010



SCIENTIFIC METHOD

OBSERVATION

HYPOTHESIS

REPRODUCE THE
EXPERIMENT

EXPERIMENT

Revision of
hypothesis

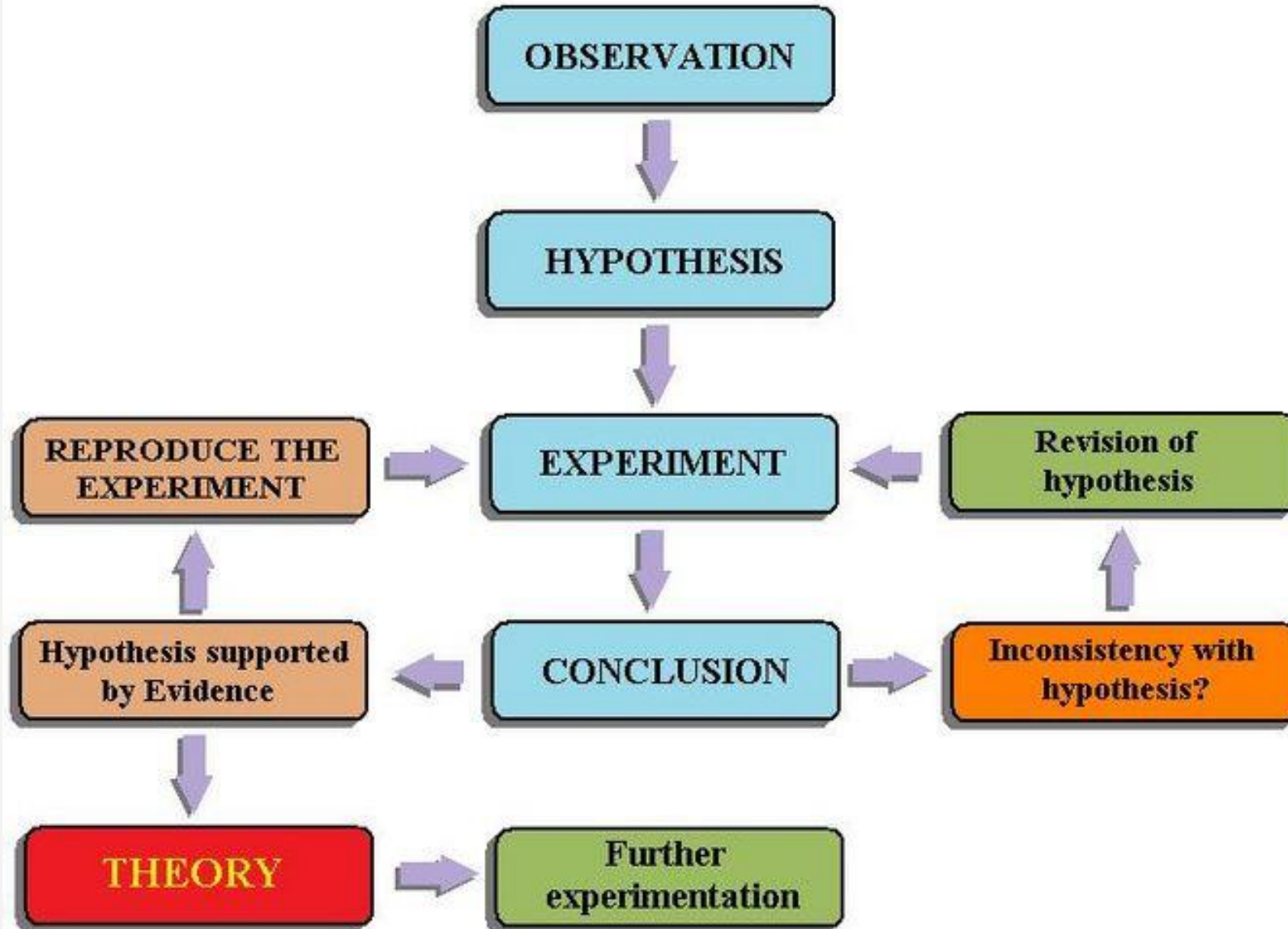
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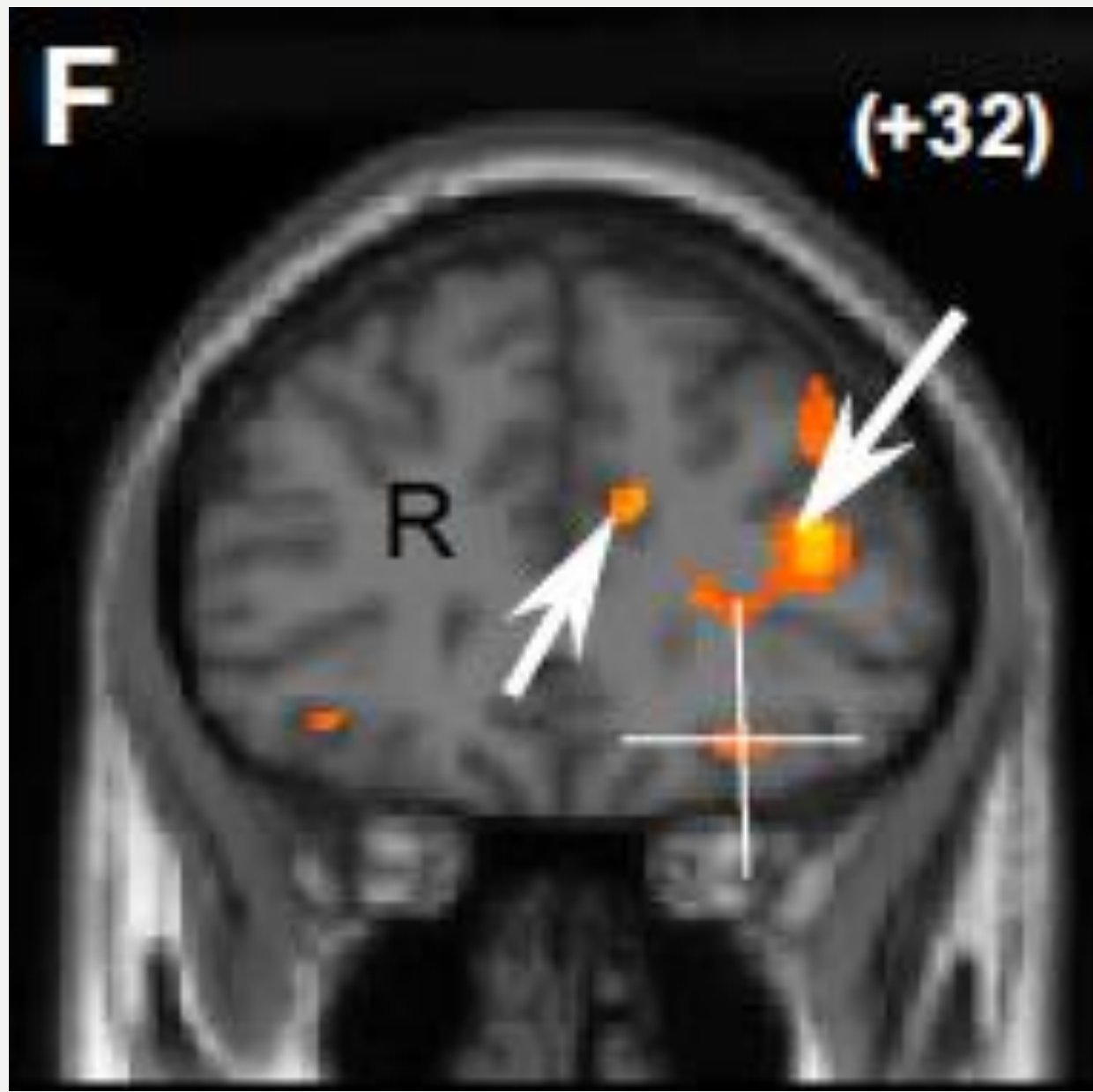
HELEN FISHER: REJECTION



- What did she do next? **Study 2**
- Comparison to people in love, but recently rejected
- 15 subjects (10 women), age 18-21, average of 2 months after rejection from relationships averaging 21 months
- Average scores on Passionate Love Scale were comparable to prior study
- Participants reported spending on average >85% of waking hours thinking about their rejector
- Viewed partner vs. acquaintance in fMRI

- Findings:
 - VTA activation like Study I; PLS correlation with caudate activation like Study I
 - PLS correlation with middle orbitofrontal cortex a la cocaine *craving*
 - Higher activity in nucleus accumbens & ventral putamen/pallidum, but this decreased for those who were further away from break-up
 - This area increased in Study I as relationships lengthened
 - “Attachment” circuit? Prep for parenting?

HELEN FISHER: REJECTION



HELEN FISHER: REJECTION

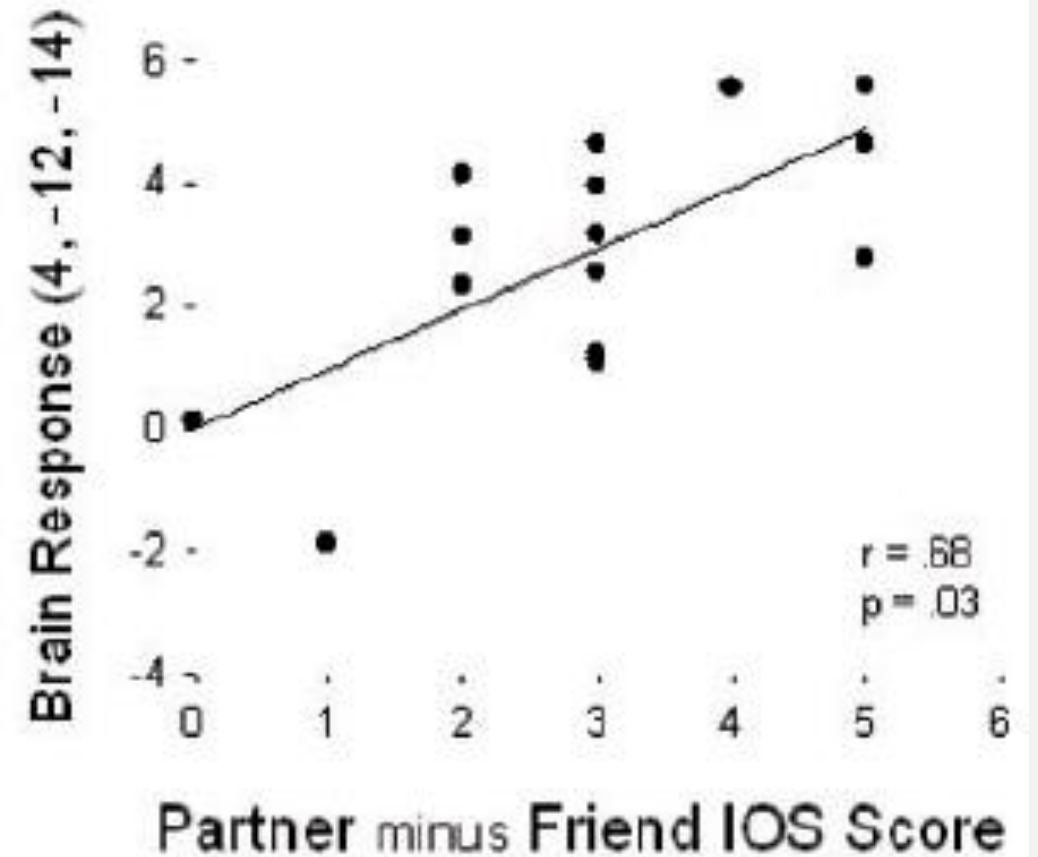
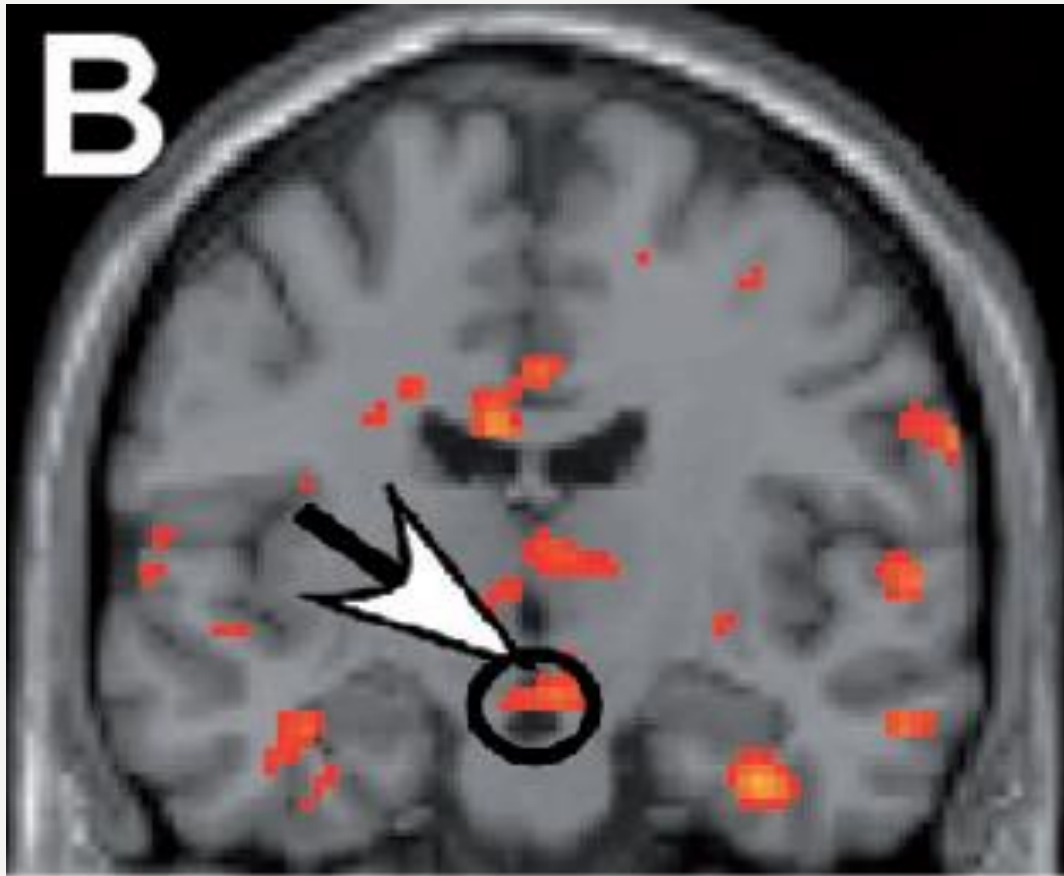
HELEN FISHER: LONG-TERM LOVE

- What did she do next? **Study 3**
- Comparison to people in lasting love
- 10 women & 7 men in long-term loving relationships for an average of **21.4 years**
- Viewed partner vs. close friend vs. long-term acquaintance vs. shorter-term acquaintance in fMRI



- Findings:
 - Similar VTA & Caudate activation to early-stage love
 - Regions correlated with PLS and obsession mirrored Studies 1 & 2
 - Pallidus/putamen activity (among other areas) correlated with attachment aspects of long-term love

HELEN FISHER: LONG-TERM LOVE



HELEN FISHER: LONG-TERM LOVE



THANK YOU

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THE COMMUNITY MEDICAL SCHOOL COMMITTEE**



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