

Eureka! Gender affects how we judge competence, genius

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Think of the word "genius," and a few images undoubtedly come to mind - perhaps a picture of Albert Einstein, of a scientist in a lab shouting "Eureka!" or of present-day theoretical physicist Stephen Hawking.

Whatever mental picture is conjured up, chances are they all have one thing in common: The person is male.

Cornell University's postdoctoral researcher Kristen Elmore has co-authored a study that sought to determine whether perceptions of inventions and inventors are shaped by how they're described. Elmore and collaborator Myra Luna-Lucero of Columbia University looked at two metaphors that describe scientific discovery: a light bulb turning on, signifying a moment of brilliance, and a seed that is nurtured until it takes root.

They explored whether the use of one versus the other played a role in how discovery and its discoverer were viewed. Their study, "Light Bulbs or Seeds? How Metaphors for Ideas Influence Judgments About Genius," was published online this month in the journal *Social Psychological and Personality Science*.

Elmore said her goal was to see whether the use of one metaphor over the other would shape how people viewed the value of a scientific achievement. A light bulb turning on or similar metaphors, the paper said, implies sudden inspiration - a "stroke of genius" - while the seed

metaphor implies hard work over an extended period.

"There's a proclivity to talk about ideas as a light bulb suddenly turning on, but that really belies the effort and planning over a number of years that many ideas require," Elmore said. "I can see why it's tempting to talk that way about ideas: It sounds very exciting when you talk about discovery in those terms, but it may have unintended effects."

To explore the relationship between an idea's characterization and its perceived value, Elmore and Luna-Lucero conducted three experiments. Study 1 examined how people reacted to a description of Alan Turing's invention of a precursor to the modern computer. The participants - 345 adults, average age 35, just slightly more than half female - were all given a short passage that described Turing and his idea.

One group's passage included wording that his idea "struck him like a light bulb that had suddenly turned on"; another's said Turing had "the seed of an idea" that "took root" like "a growing seed that had finally borne fruit"; and the third's passage included no metaphor. The researchers found that the seed metaphor diminished participants' belief that Turing's idea was exceptional.

Studies 2A (which measured beliefs about gender and idea creation) and 2B (which measured perception of an inventor's genius) sought to examine whether these metaphor effects could extend beyond judgments about ideas themselves to affect social judgments regarding who can have innovative ideas. In both cases, participants were more likely to view women's abilities more favorably when viewed through the prism of the seed metaphor than the light bulb.

"I think what's fun about doing this research is that we're doing this in such a subtle way," Elmore said. "We're taking a real idea from history, and finding that simply describing it as occurring either like a [light bulb](#)

or as a seed actually shaped the way people thought about it."

Elmore said the seed metaphor may elicit "these sort of feminine-gendered notions" regarding nurturing a seed until it takes root, adding that her study didn't directly test whether a cognitive association with women as nurturers and caregivers influenced thinking. "But that's certainly a potential explanation I would offer," she said.

A scholar in the Bronfenbrenner Center's Program for Research on Youth Development and Engagement, Elmore's previous work has examined adolescents and their motivation at school. She said future work in this area will focus on how these messages regarding "genius" will play out as boys and girls grow up.

"I'm really curious to see whether even these subtle metaphor messages might shape how kids think about the sort of people who go into these innovation-driven fields, and also how kids think about the possibilities for themselves in these fields," she said.

More information: K. C. Elmore et al, Light Bulbs or Seeds? How Metaphors for Ideas Influence Judgments About Genius, *Social Psychological and Personality Science* (2016). [DOI: 10.1177/1948550616667611](https://doi.org/10.1177/1948550616667611)

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