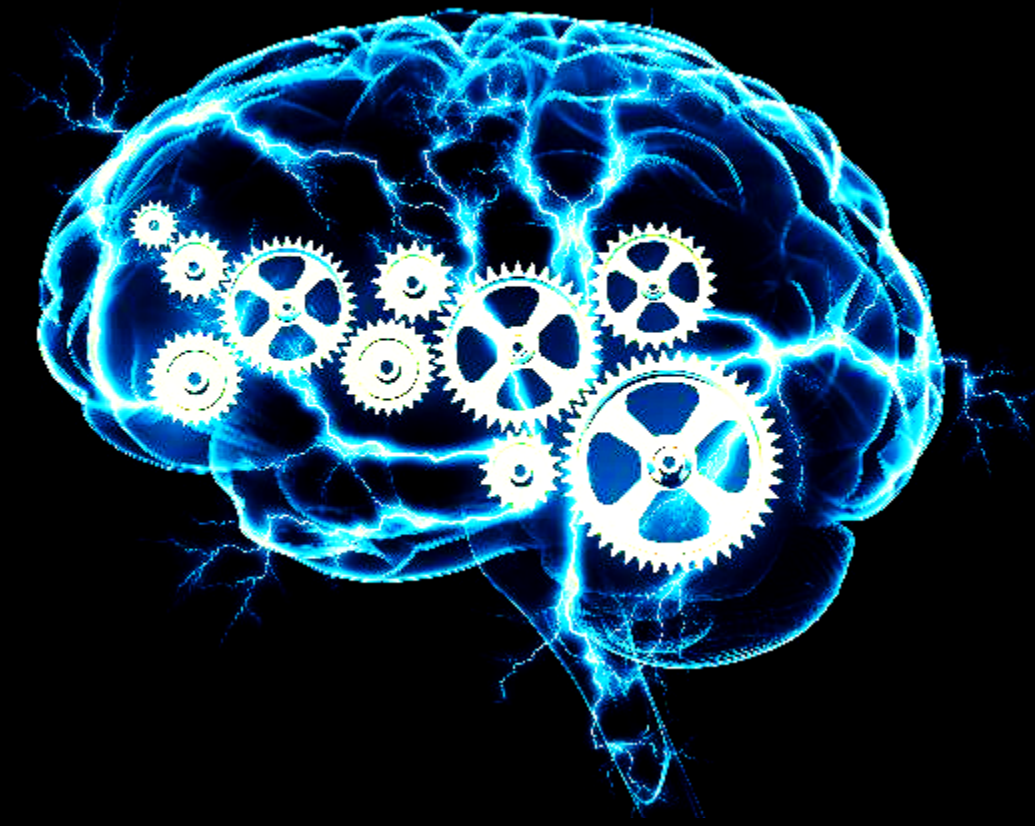# Health literacy and the correction of misinformation

Briony Swire-Thompson

Health

Health disinformation can thrive because there are significant financial incentives.

Misinformation concerning health has particularly severe consequences with regards to people's quality of life and even risk of mortality.

Swire-Thompson, B. & Lazer, D. (2020). Public Health and Online Misinformation: Challenges and Recommendations. *Annual Review of Public Health*

Covid-19

Disinformation and misinformation can be particularly problematic in a crisis because it takes time for science to establish the facts.

- Fake experts can speak with more certainty

- Misinformation can be spread by real scientists due to preprints prior to peer review

- Fake open access journals that accept publications for monetary gain (otherwise known as "predatory journals")
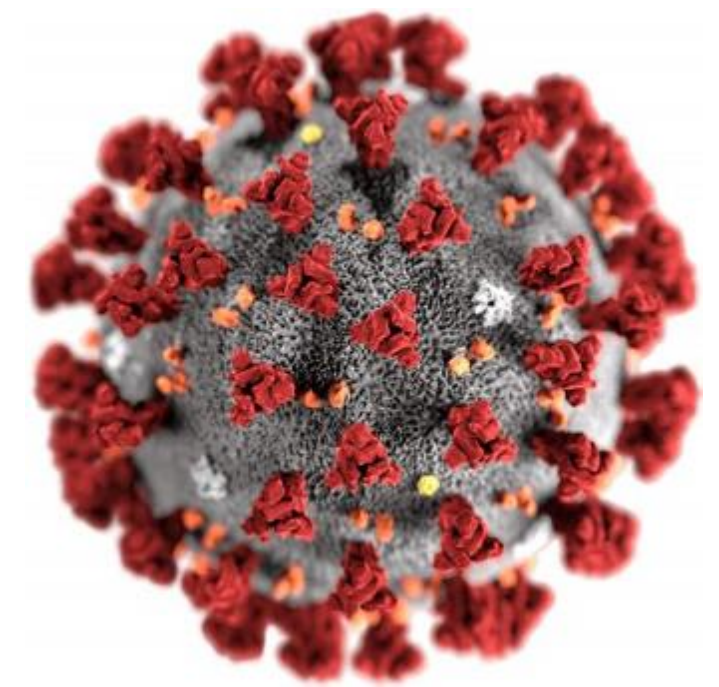
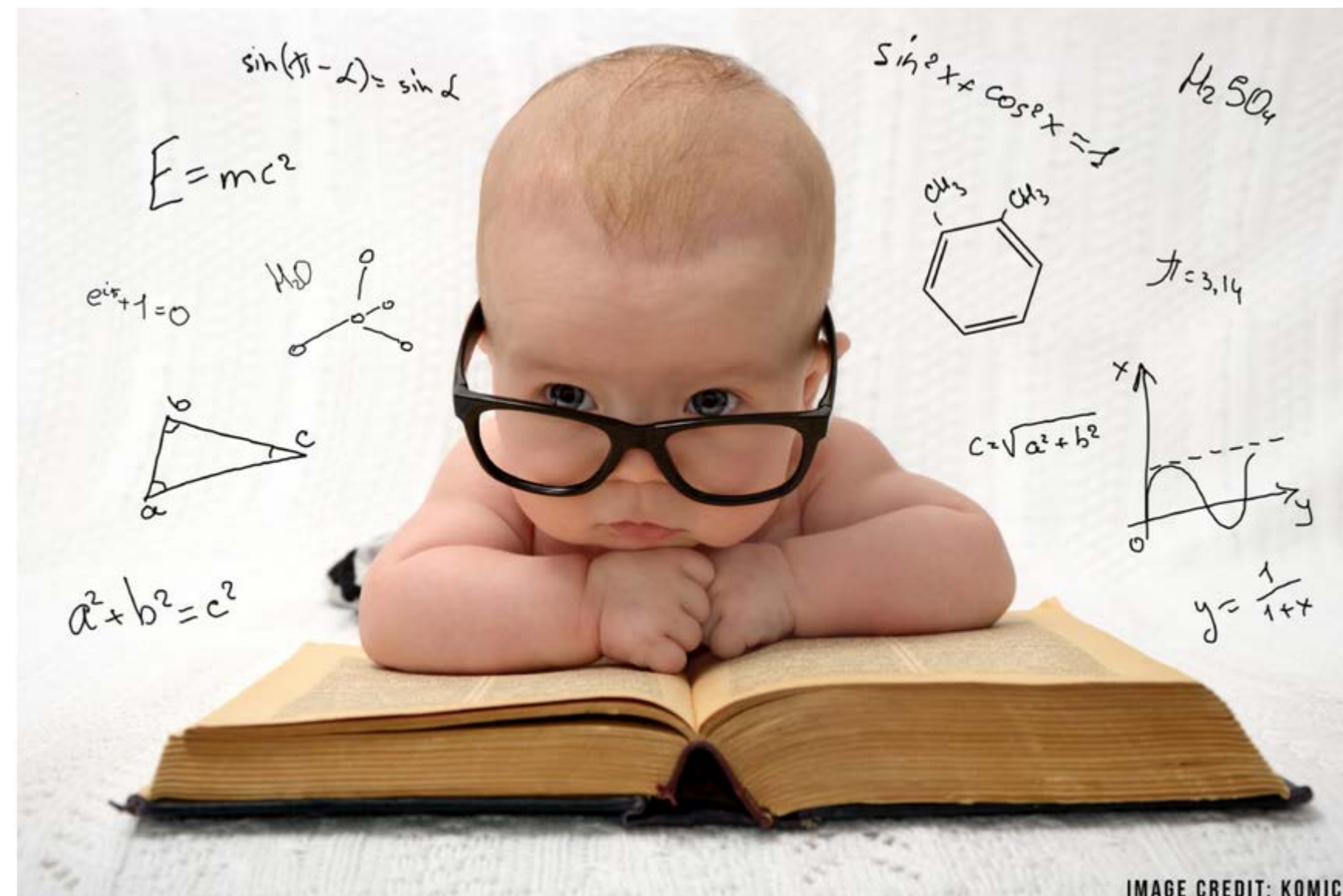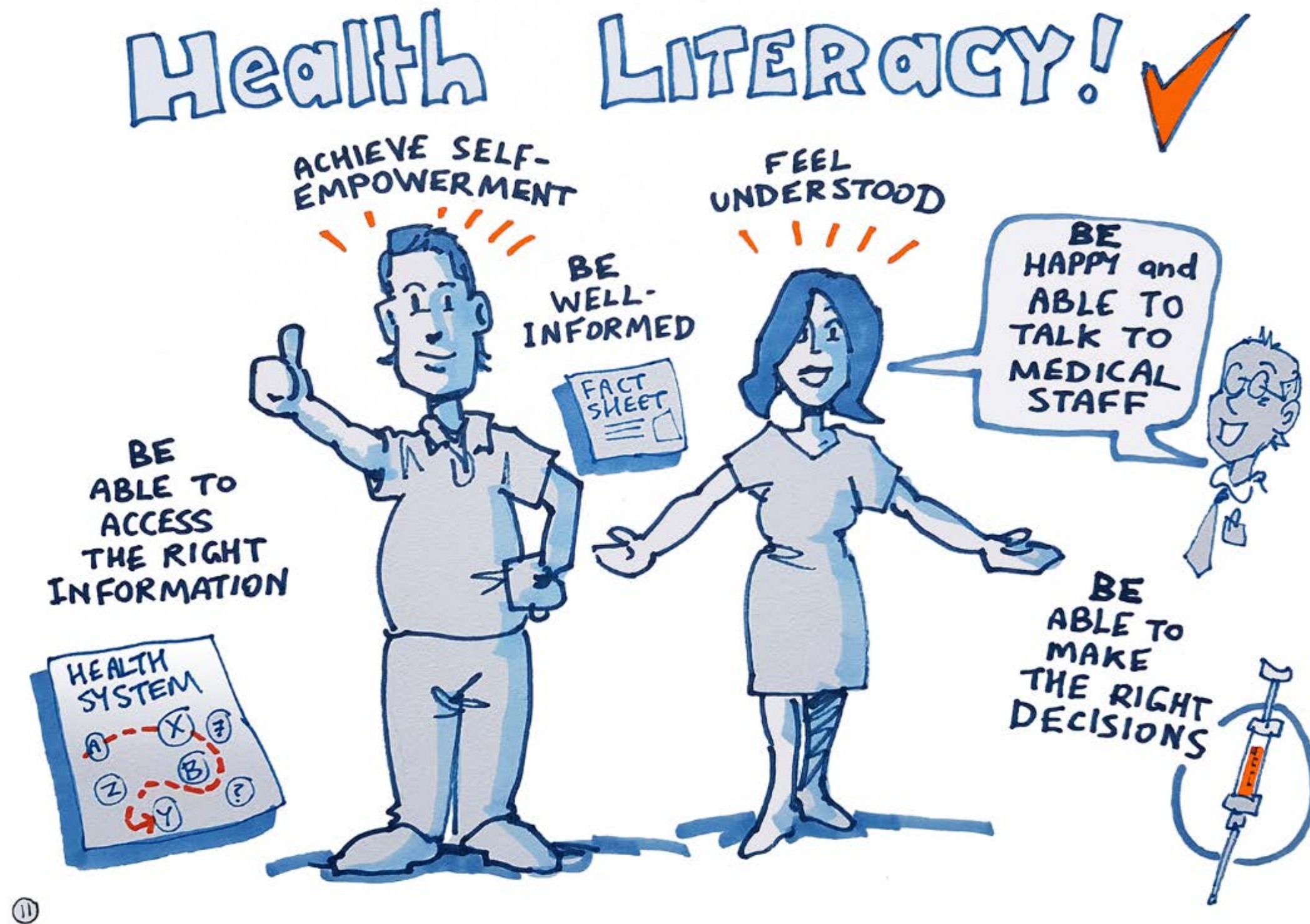Have successful strategies for combating misinformation been found?

IMAGE CREDIT: KOMICH

Health literacy

There is evidence to suggest that critical thinking is a skill that can be taught.

However, gauging the efficacy of health literacy programs is extremely difficult, and findings have been mixed. (Stevenson et al. 2007)

Grinberg, N., Joseph, K., Friedland, L., Swire-Thompson, B., & Lazer, D. (2019). Fake news on Twitter during the 2016 US presidential election. *Science*, *363*(6425), 374-378.
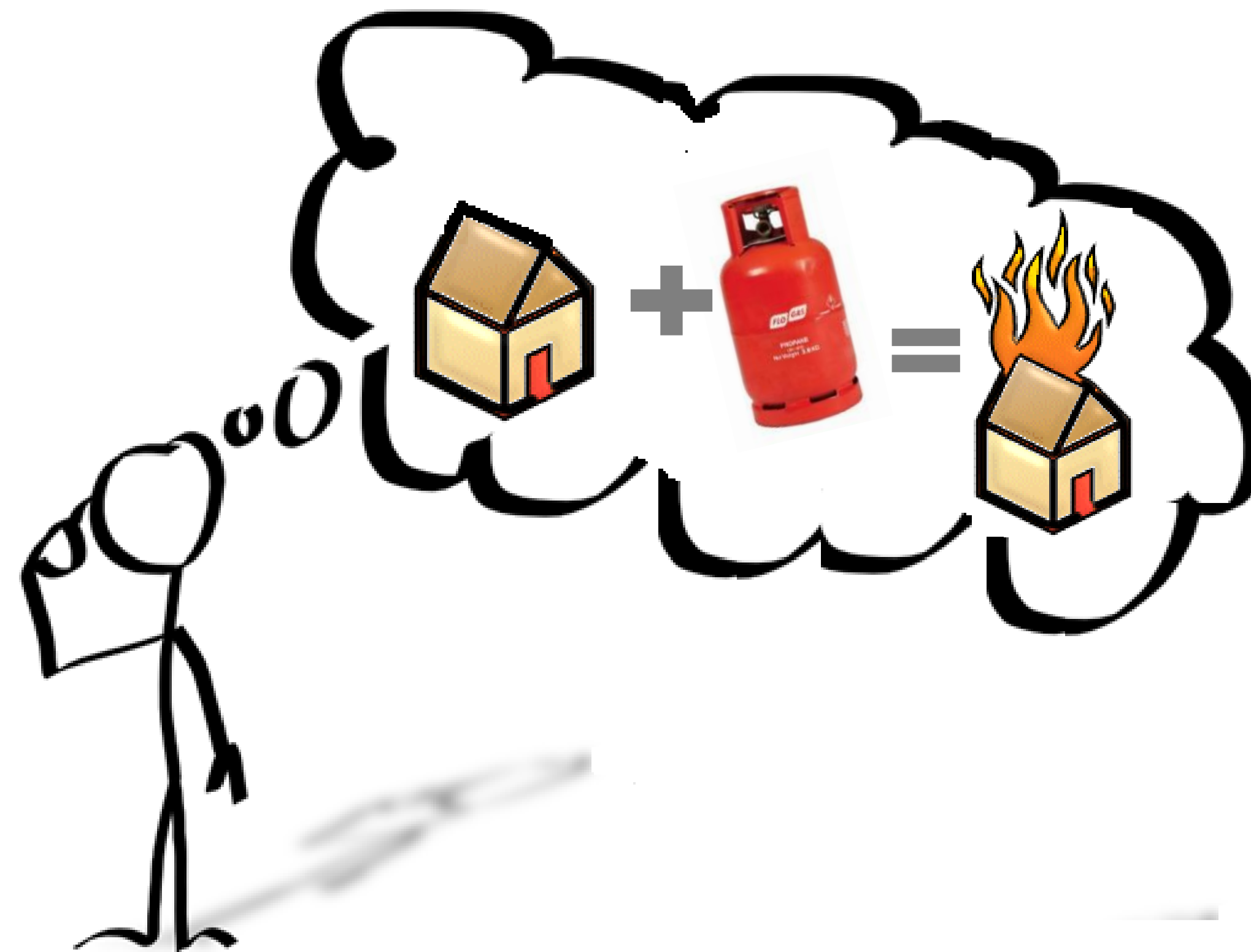
Recommendations

What *does* cognitive psychology recommend
for correcting misinformation?

1. Provide factual alternatives
   (Johnson & Seifert, 1994)

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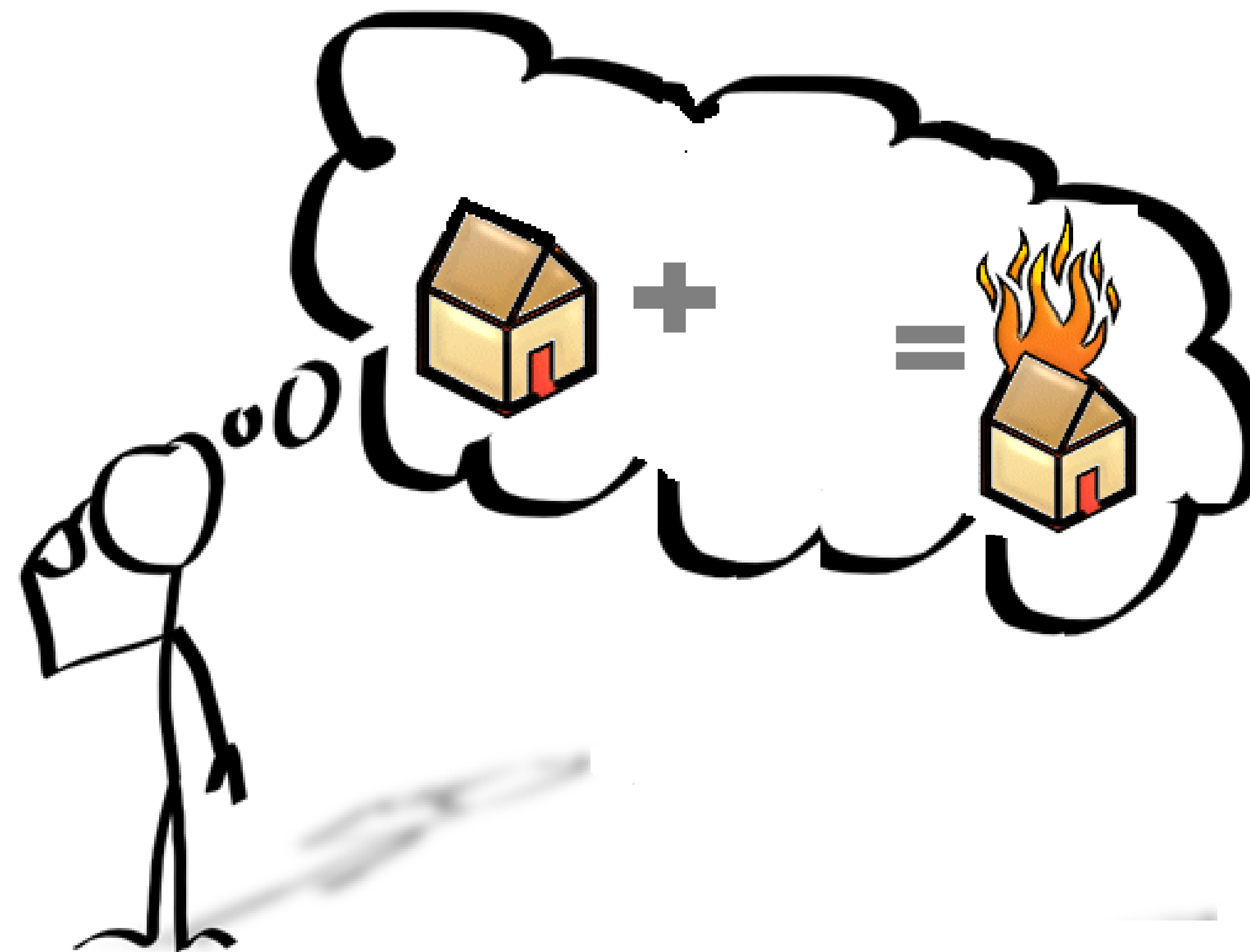1. Provide factual alternatives
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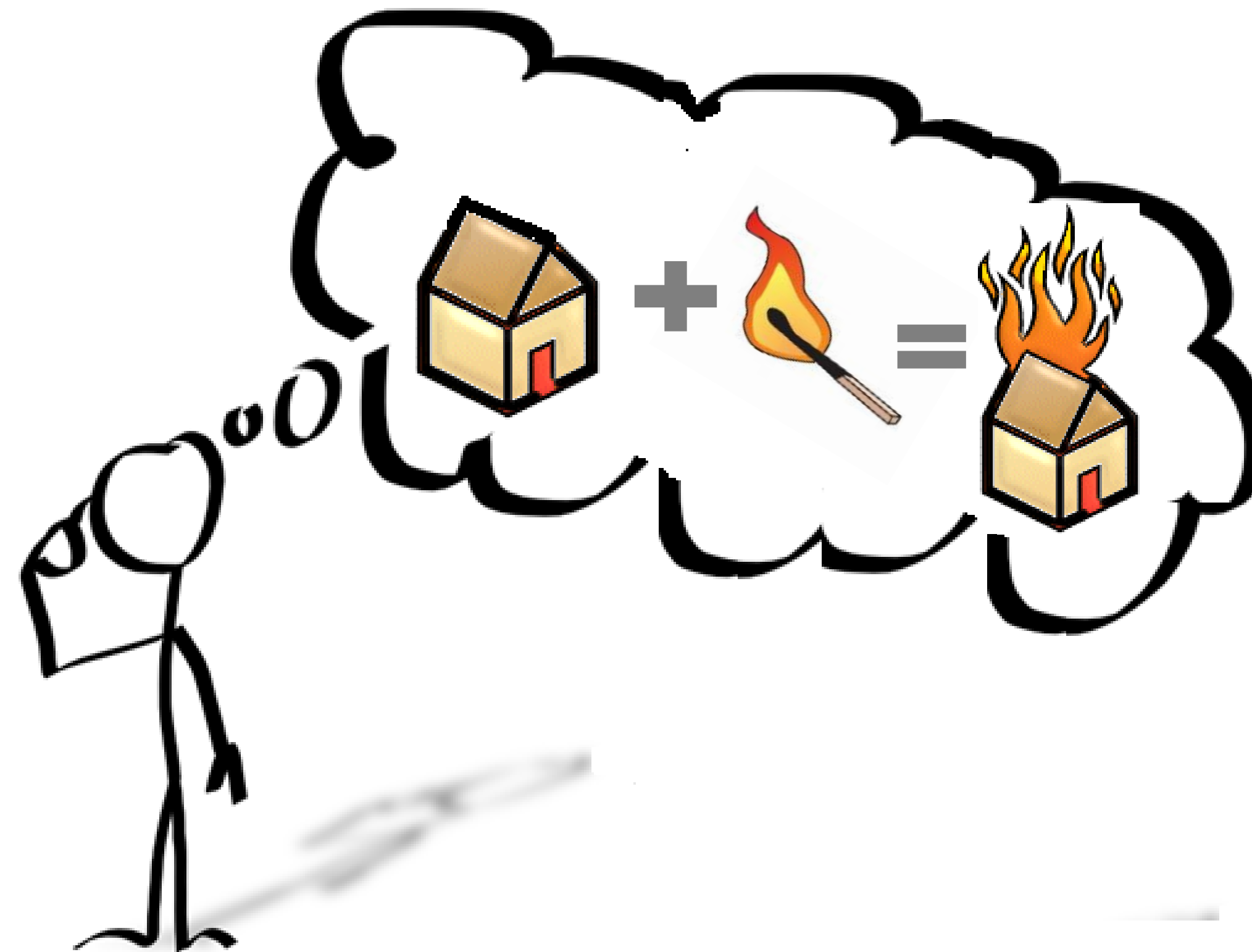1. Provide factual alternatives
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   (Ecker, Lewandowsky & ,Tang, 2010)

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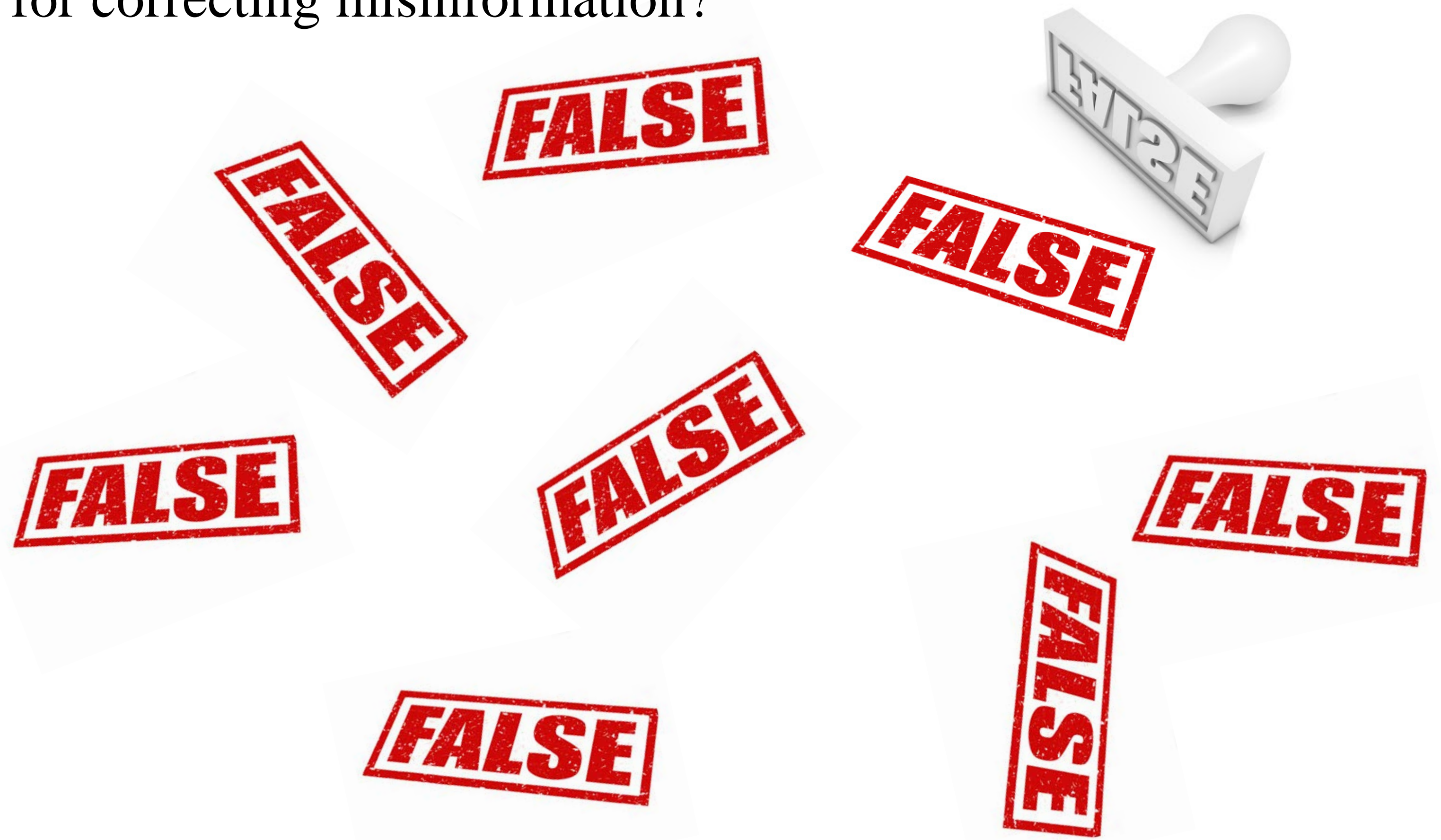
1. Provide factual alternatives
   (Johnson & Seifert, 1994)

2. Provide warnings if
misinformation will appear
   (Ecker, Lewandowsky & ,Tang, 2010)

3. Repeat corrections
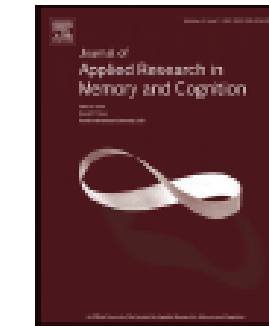   (Ecker, Lewandowsky & ,Swire & Chang, 2011)

The backfire effect

Review

Searching for the Backfire Effect: Measurement and Design Considerations

Briony Swire-Thompson *
Northeastern University, Boston, USA
Harvard University, Cambridge, USA

Joseph DeGutis
VA Boston Healthcare System, Boston, MA, USA
Harvard Medical School, Boston, MA, USA

David Lazer
Northeastern University, Boston, USA
Harvard University, Cambridge, USA

Swire-Thompson, B., DeGutis, J., & Lazer, D. (*in press*). Searching for the backfire effect: Measurement and design considerations. *Journal of Applied Research in Memory and Cognition*

The backfire effect

A backfire effect is said to occur when an evidence-based correction leads to an individual believing *even more* in the very misconception the correction is aiming to rectify.
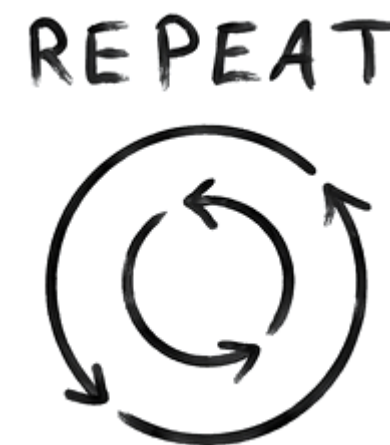

It is not a robust
empirical phenomenon

Swire-Thompson, B., DeGutis, J., & Lazer, D. (*in press*). Searching for the backfire effect: Measurement and design considerations. *Journal of Applied Research in Memory and Cognition*

The backfire effect

The familiarity backfire effect has often been conflated with the more well-established illusory truth effect:

- ▪ **Illusory truth effect**: refers to increasing belief due to information repetition in the *absence* of a correction and is a robust empirical phenomenon.

- ▪ **Familiarity backfire effect**: refers to increasing belief due to information repetition *within* a correction and has little to no empirical support.

REPEAT

Swire-Thompson, B., DeGutis, J., & Lazer, D. (*in press*). Searching for the backfire effect: Measurement and design considerations. *Journal of Applied Research in Memory and Cognition*

The backfire effect

On the whole, people are quite good at updating their belief when they read corrective evidence

Swire-Thompson, B., DeGutis, J., & Lazer, D. (*in press*). Searching for the backfire effect: Measurement and design considerations. *Journal of Applied Research in Memory and Cognition*

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Harvard Medical School

Boston Attention and Learning Laboratory
VA Boston Healthcare System

Thank you!