

Factors associated with belief or  
disbelief in false news: From the  
perspective of elaboration likelihood  
and moderating effect model

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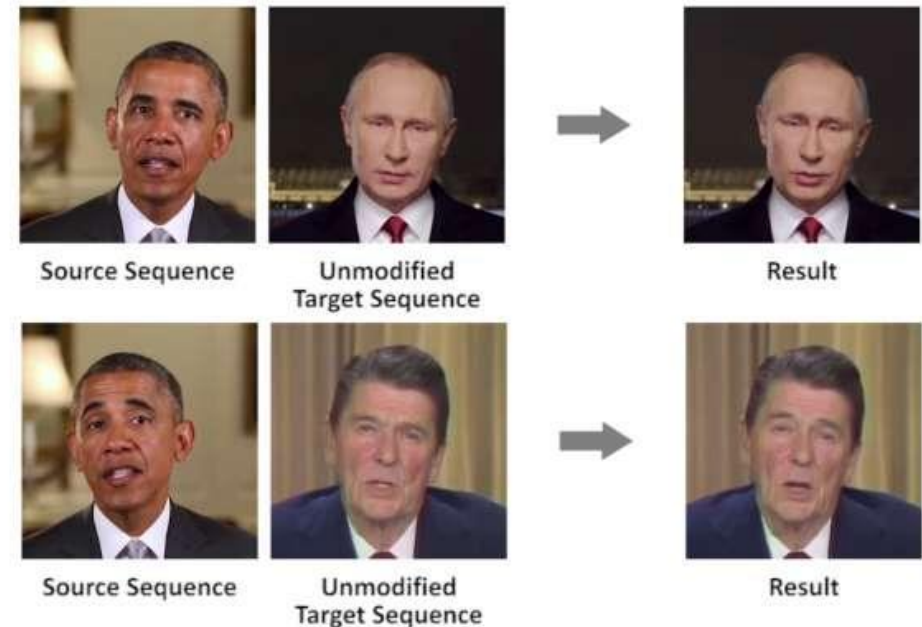
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# Why are the impacts of fake news unprecedented

Rapid dissemination



Technology make us unable to differentiate genuine content from false (Deepfake)



# AI detection of fake news



Facebook has made fighting bots and fake news a priority. AI plays a big role in this.

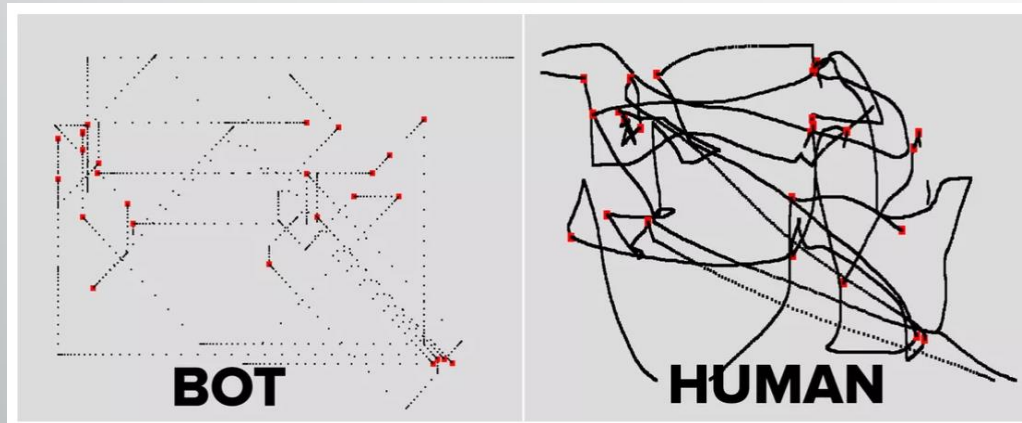
James Martin/CNET

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# AI detection of fake news & arguments

For: Scalability

Against: Cat and mouse game



AI detection of social bot or human



# Fact Checking Organization



# Fact Checking Organization (Duke Reporters' Lab)

The screenshot displays the Duke Reporters' Lab website interface. On the left, a map of the Americas is shown with red checkmark icons indicating active locations and blue circles indicating inactive locations. A legend in the top right of the map area shows a checked box for 'Active (189)' and an unchecked box for 'Inactive (73)'. The map includes labels for various cities and countries such as Wichita, Nashville, Atlanta, Miami, Mexico City, and Panama. On the right side of the website, there is a navigation menu with links for 'LATEST NEWS', 'FACT-CHECKING', 'TECH & CHECK', and 'ABOUT THE LAB'. Below the navigation menu is the 'Duke Reporters' LAB' logo. The main content area features the heading 'FACT-CHECKING NEWS' and a sub-heading 'FACT-CHECKING NEWS | TECH & CHECK COOPERATIVE'. The primary article title is 'Reporters' Lab Launches Global Effort to Expand the Use of ClaimReview', dated 'July 17, 2019'.

# Arguments of fact checking

Pro: fully verification



Cons: Limited scalability

Implied truth effect



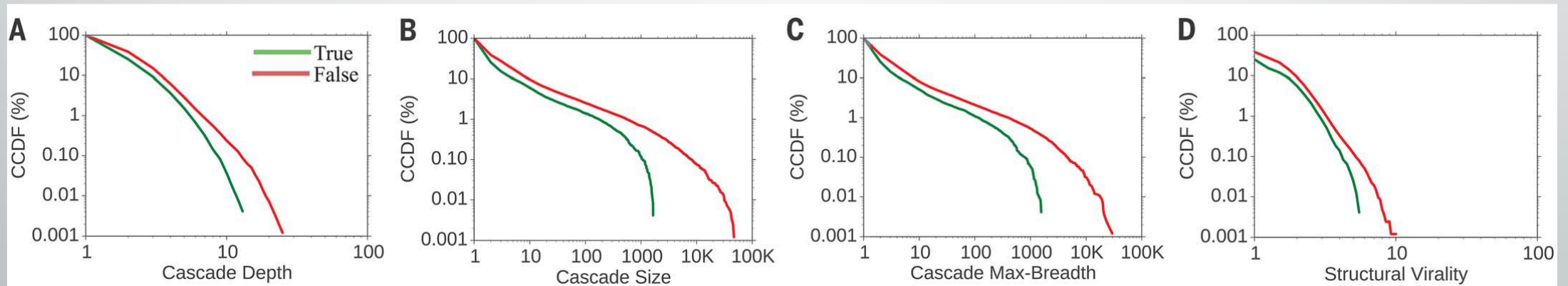
# The perspective of information literacy

- **Individuals should be at the center of efforts**
- Being informational literate: the ability to search, distinguish, assess, and use information to explain or solve a problem or an issue (ACRL, 2013)



# The perspective of information literacy

People are more likely to spread misinformation than true information ( Vosoughi et al., 2018)



Complementary cumulative distribution functions (CCDFs) of true and false rumor cascades

# Arguments of information literacy

Pro: empowerment



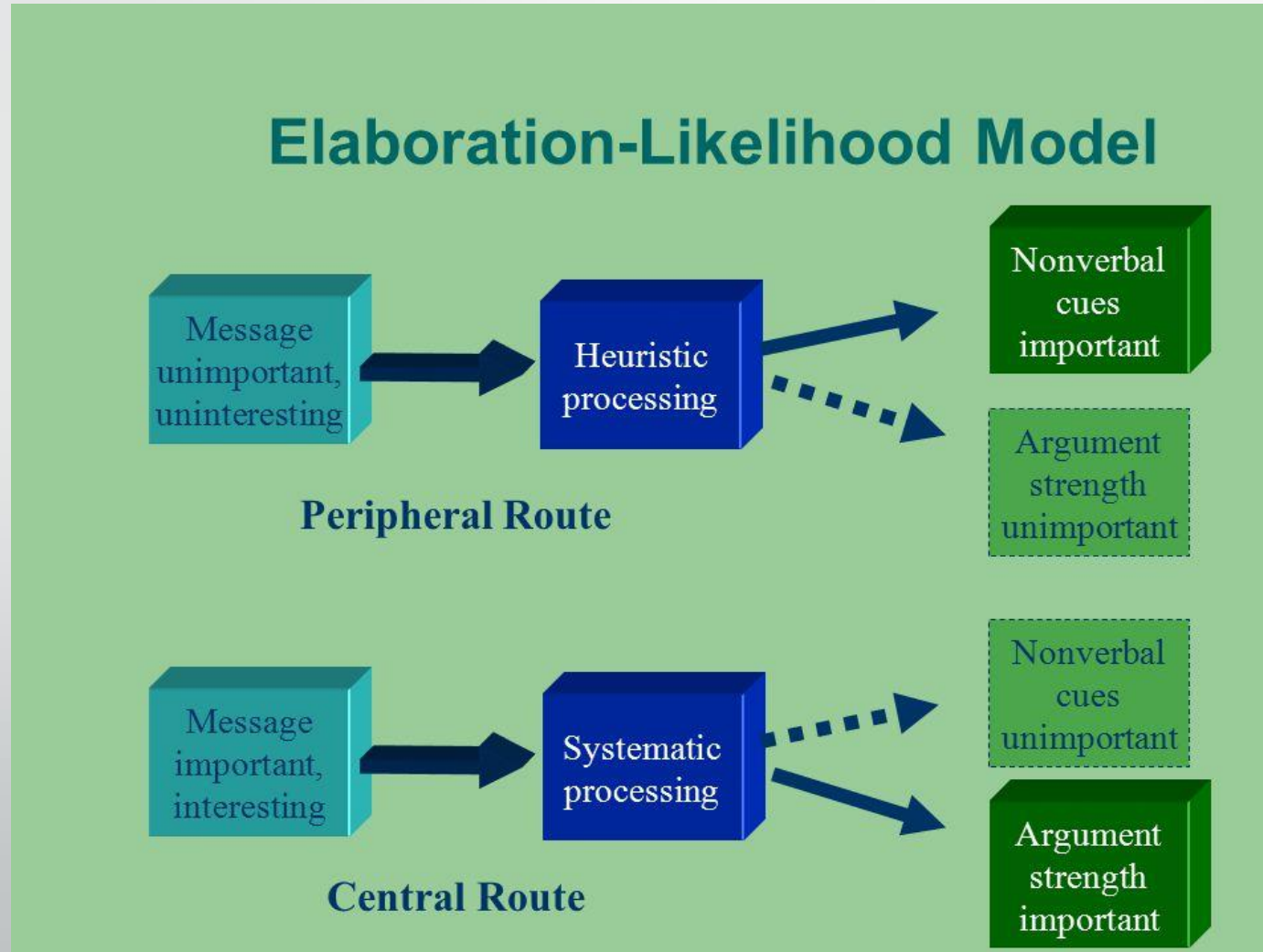
Cons: shift the responsibility to consumers



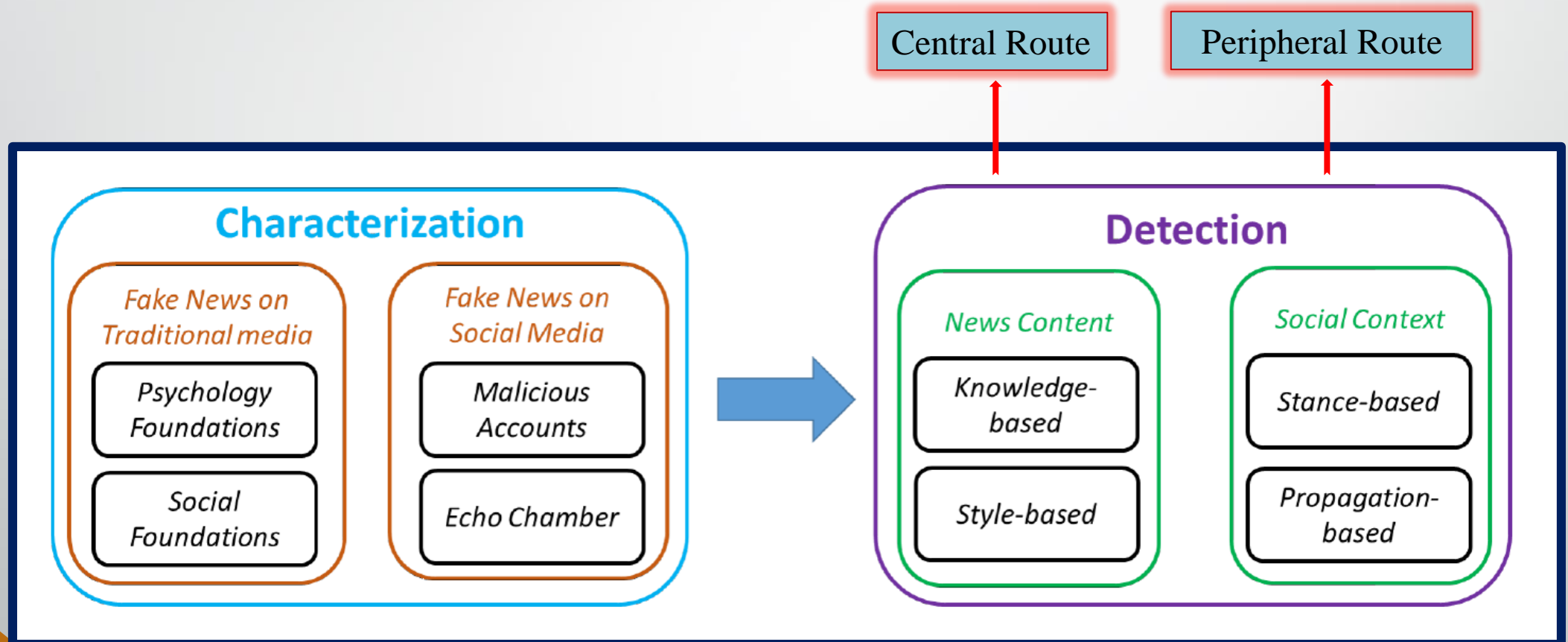
# The information processing model of false news

- What are elements, in an online context, that may foster user's recognition of misinformation or susceptibility to believing in false information?
- Does the information literacy ability function as a moderating role that may attenuate such vulnerability?
- ELM (Elaboration Likelihood Model)
- Interaction effect of Information literacy

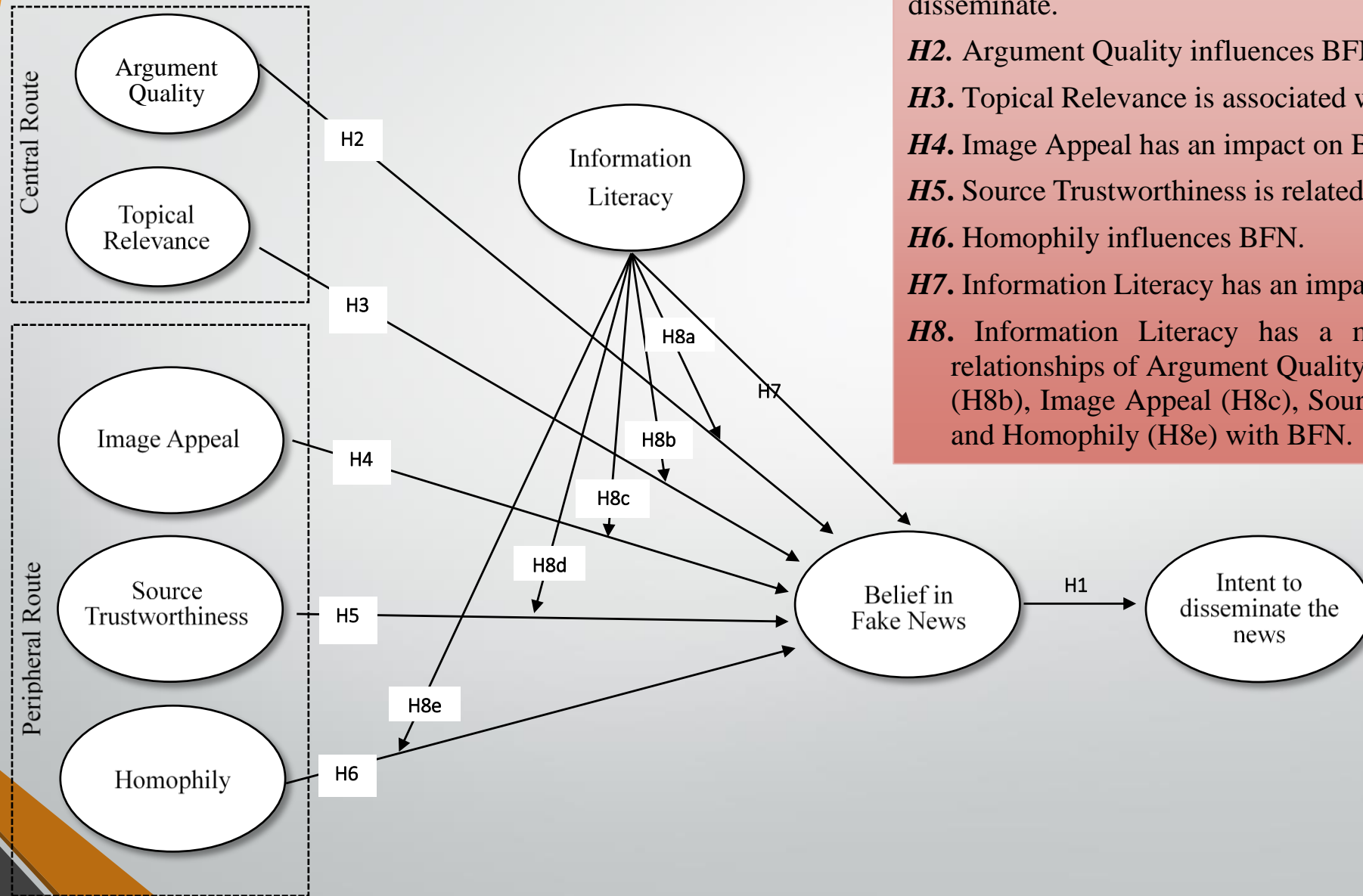
# Elaboration likelihood Model



# Methodology of AI detection for fake news



# Research Model



- H1.** Belief in False News (BFN) is associated with the intent to disseminate.
- H2.** Argument Quality influences BFN.
- H3.** Topical Relevance is associated with BFN.
- H4.** Image Appeal has an impact on BFN.
- H5.** Source Trustworthiness is related with BFN.
- H6.** Homophily influences BFN.
- H7.** Information Literacy has an impact on BFN.
- H8.** Information Literacy has a moderating effect on the relationships of Argument Quality (H8a), Topical Relevance (H8b), Image Appeal (H8c), Source Trustworthiness (H8d), and Homophily (H8e) with BFN.

# Method

## 1. *Participants*

- Students from Asia University, with a sample age around the 20s
- Students from Taichung community colleges, with a sample age above 30

## 2. *Procedure*

- Stimuli: Over 100 fact-checking reports by Taiwan Fact-Check Center were reviewed and four news messages judged false were selected
- Study A: 227 participants were asked to read a policy-related false news from Facebook
- Study B: 237 participants were presented with a life-related false story from LINE
- Study C: 221 participants were asked to read a policy-related false news from a news website
- Study D: 248 participants were presented with a life-related false message item from another news website

➤ Study A+B: Social Media Group Study C+D: News Website Group

# Method

## 3. *Measurement*

- Central cues (argument quality and topical relevance)
- Peripheral cues (image appeal, source trustworthiness, and homophily)
- Information literacy
- Belief in fake news
- Intent to disseminate

## 4. *Analysis*

- Structural Equation Modeling (SEM) was conducted to test the hypotheses by using SmartPLS
- discriminant validity (CFA) and interconstruct correlations were confirmed before running SEM



# Results

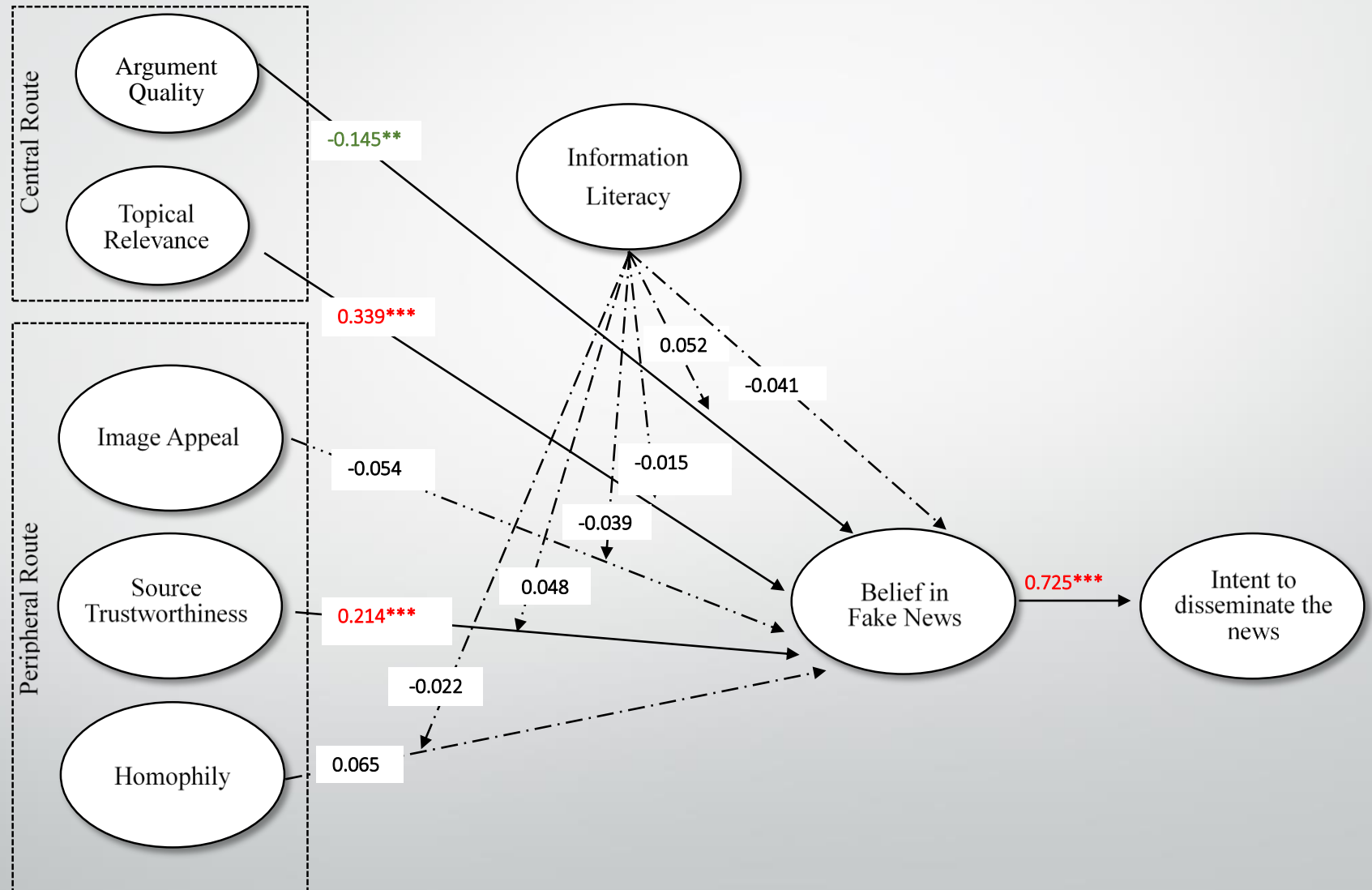


Fig 1. Results from Structural Model Analysis of Social Media Group

# Results

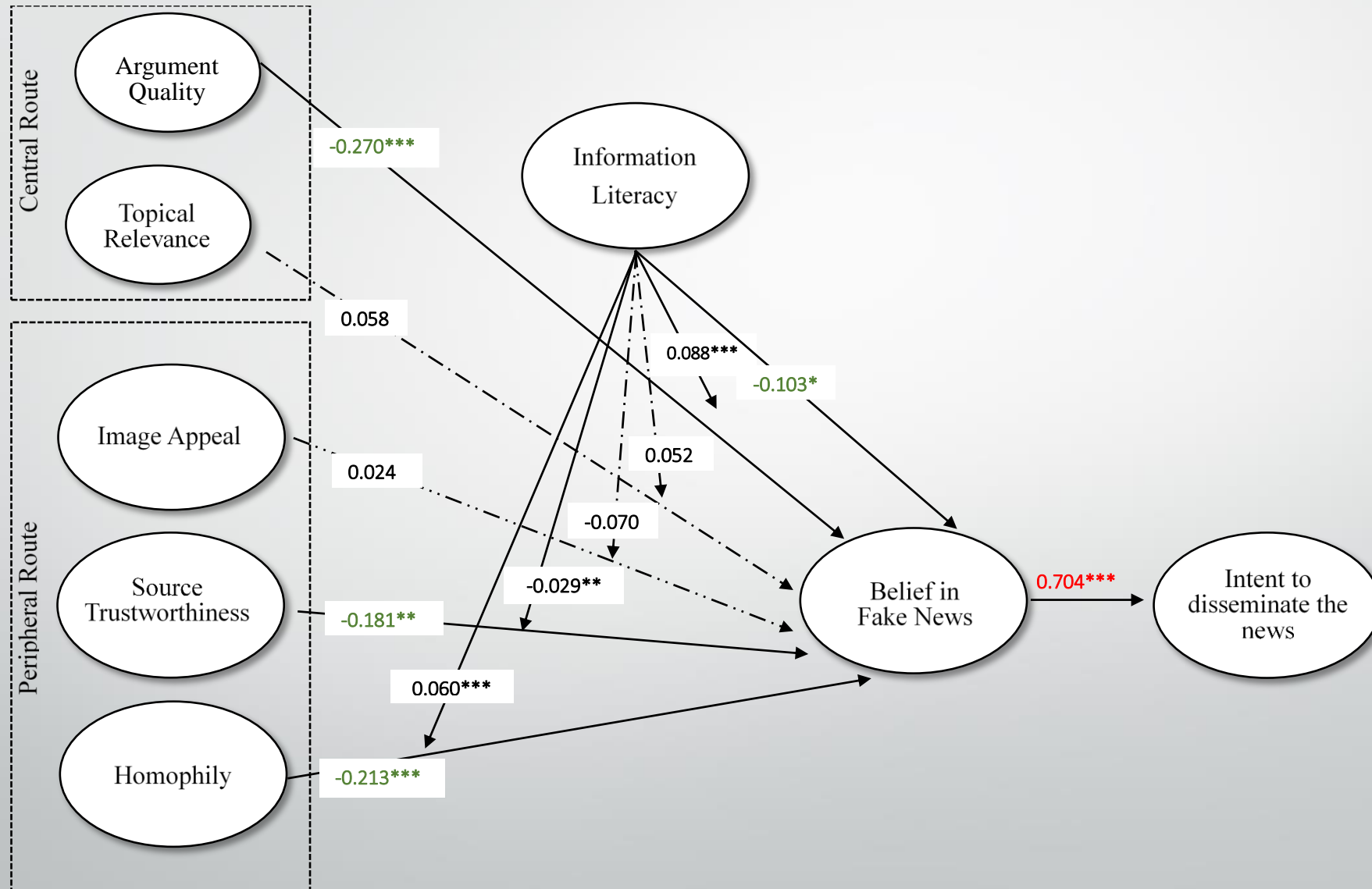


Fig 2. Results from Structural Model Analysis of News Website Group

# Conclusions

## 1. Believing vs Disseminating

- User's intent to disseminate news is highly associated with their belief in the message. (Vs. the finding that most Tweets were shared by users without even reading the contents (Gabiolkov et al., 2016).

## 2. Central cues

- Argument quality foster user's recognition of the falsehood of information for both social media and news website group.
- Topical Relevance influence users to be vulnerable to believing in false messages for social media groups.

## 3. Peripheral cues

- The impact of peripheral cues on social media tends to make users vulnerable to believing in false news, but not on news websites.

## 4. Information Literacy

- Information Literacy does not moderate the relationship between central/peripheral cues and BFN for both platforms. However, it has a direct effect on BFN for news websites but not for social media.



*Thank you for your attention*