

ISMIE: A Framework to Characterize Information Seeking in Modern Information Environments

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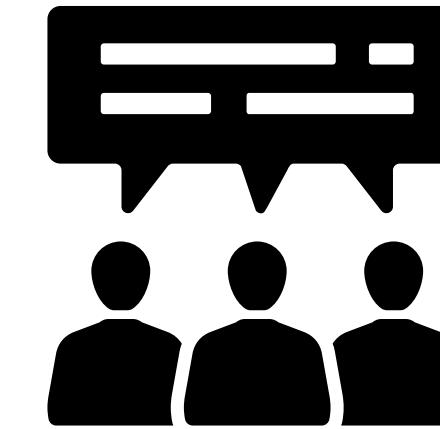
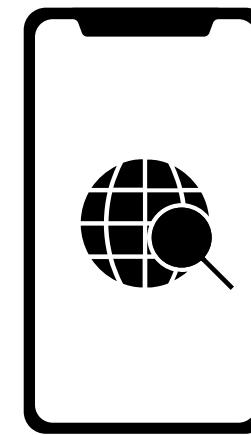


ARC Centre of Excellence for
Automated Decision-Making
and Society

A Illustrative Case



Modern Information Seeking



 ChatGPT

Google

 YouTube

 reddit

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Modern information environments (MIEs) are so dynamic!

Do existing models capture these MIE dynamics?

RQ1 - Do Existing Behavior Models Capture MIEs?

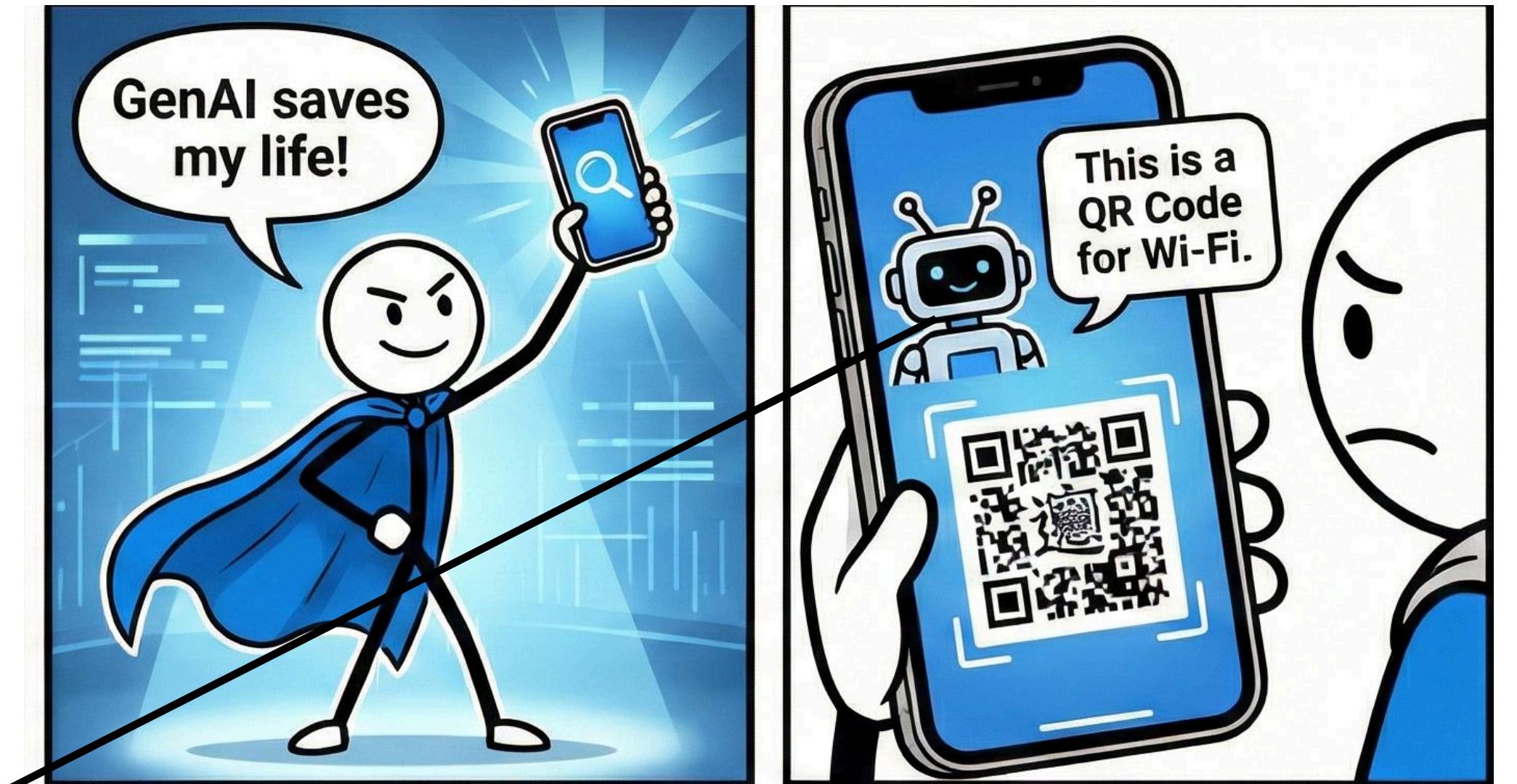


- We have assessing details of existing models in the paper
- focusing on the situations that drive the knowledge gap (e.g., Saracevic, 1997)
- having limitation of considering various devices (e.g., Ingwersen, 2005)

Saracevic, T. (1997). The stratified model of information retrieval interaction: Extension and applications.

Ingwersen, P., & Järvelin, K. (2005). The turn: Integration of information seeking and retrieval in context.

RQ1 - Do Existing Behavior Models Capture MIEs?

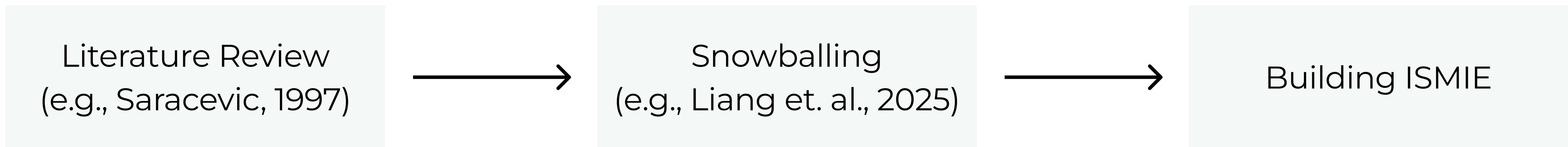


- They are limited to explain the intent of systems (e.g., Wilson, 1997)

Therefore, we should have an alternative tool for understanding MIEs

ISMIE Framework Element Identification

Information seeking in Modern Information Environment Framework (ISMIE)



ISMIE Framework Validation and Applications

Characterization; Informing research questions and experimental design

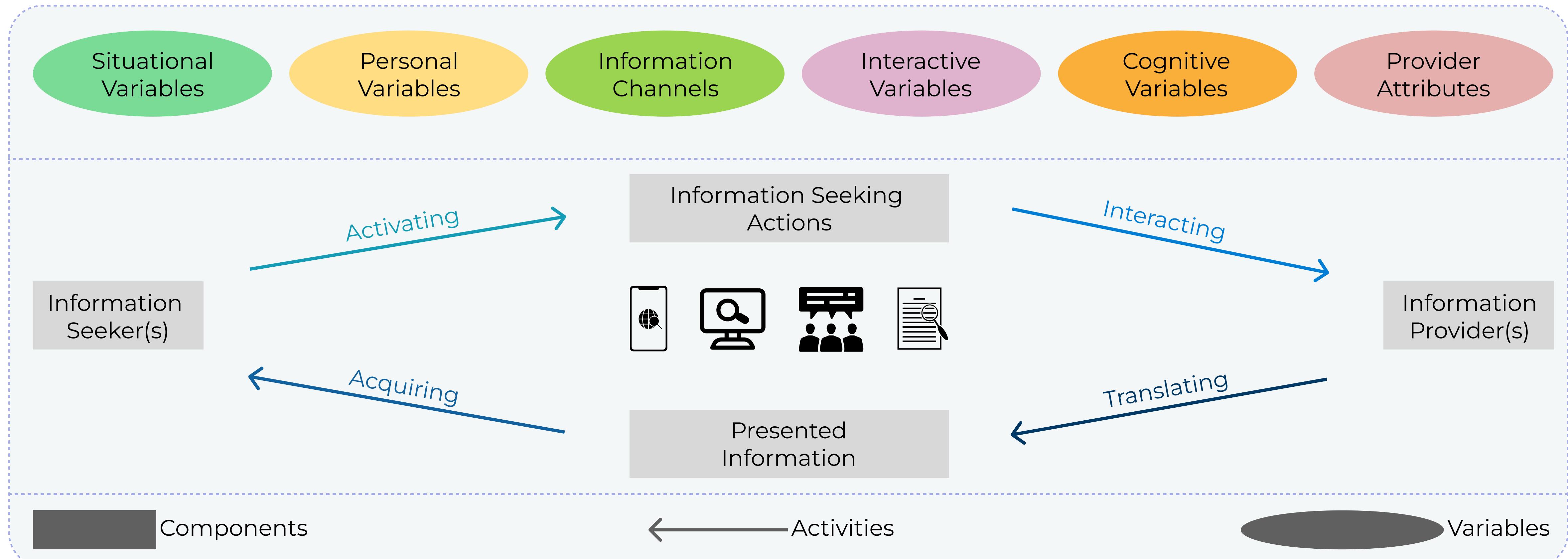


Saracevic, T. (1997). The stratified model of information retrieval interaction: Extension and applications.

Liang, Y., e. al. (2025). How Users Interact with Generative Information Retrieval Systems: A Study of User Behavior and Search Experience.

RQ2 - ISMIE Framework

Information Seeking in Modern Information Environment (ISMIE)



A high-level framework rather than a focused model

Application: Characterization



Information
Seeker

Active Search



Information
Provider

Presented
Information

Components and activities are stable elements, regardless of technological advances

Application: Characterization



Information
Seeker

Activating
→

Information Seeking
Actions

Situational
Variables

Personal
Variables

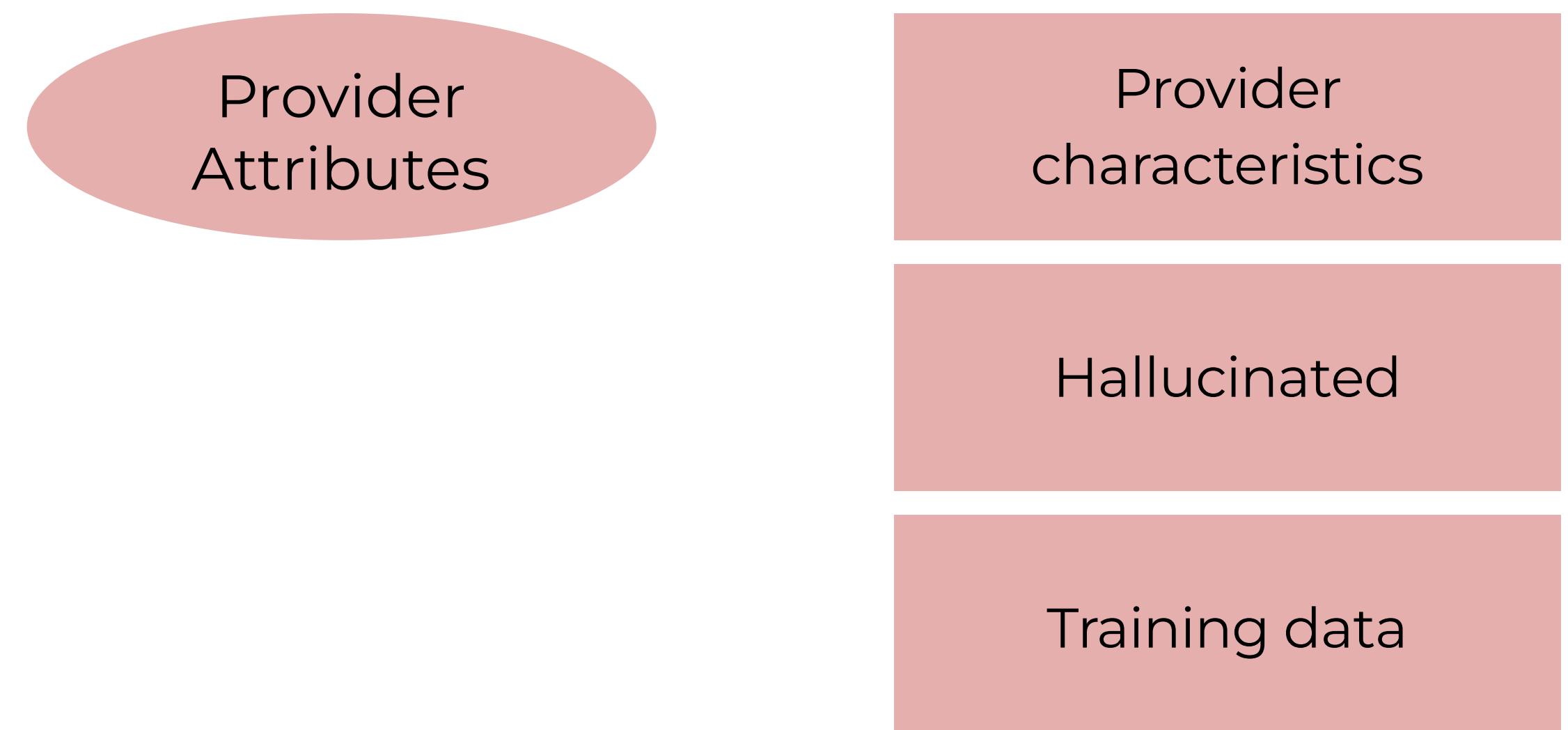
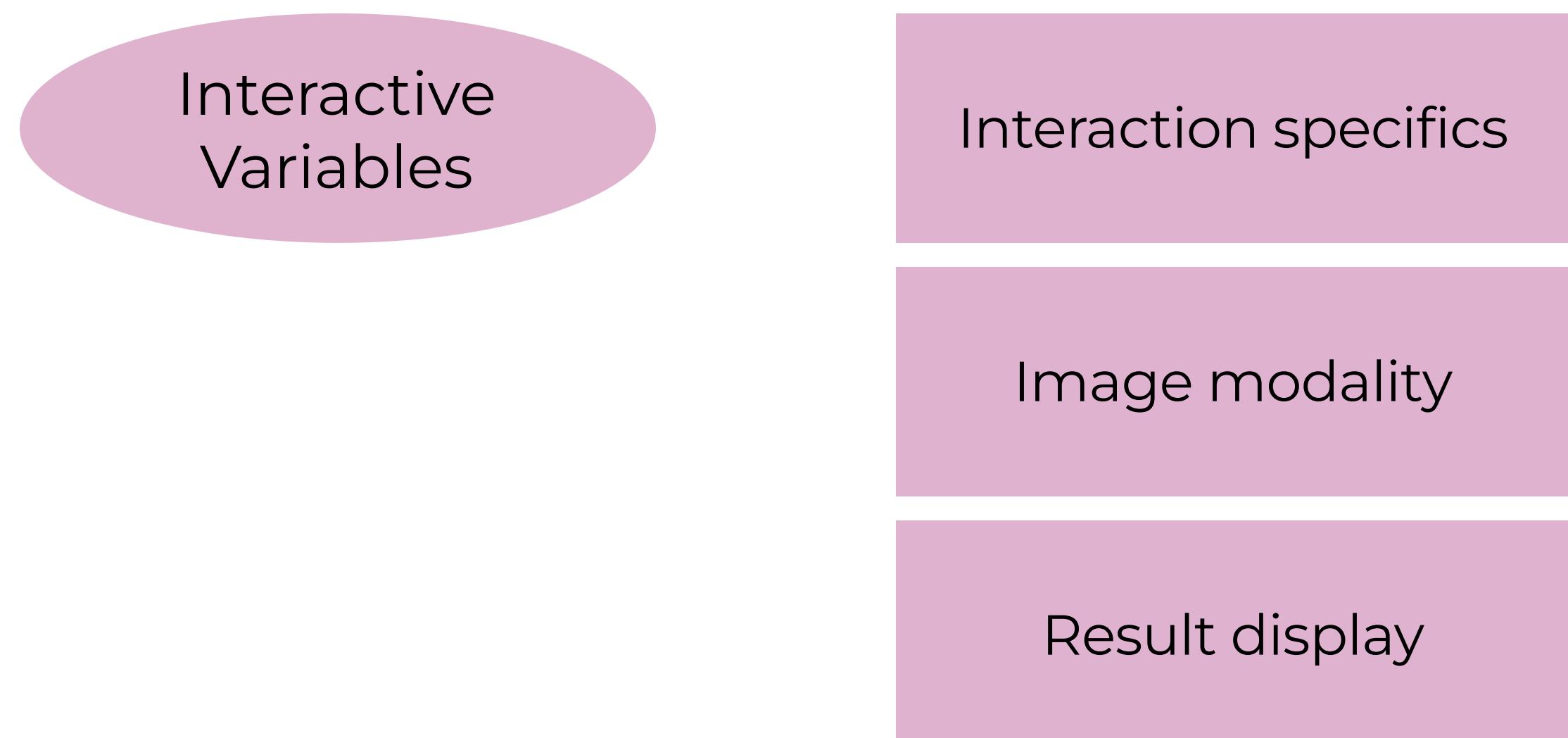
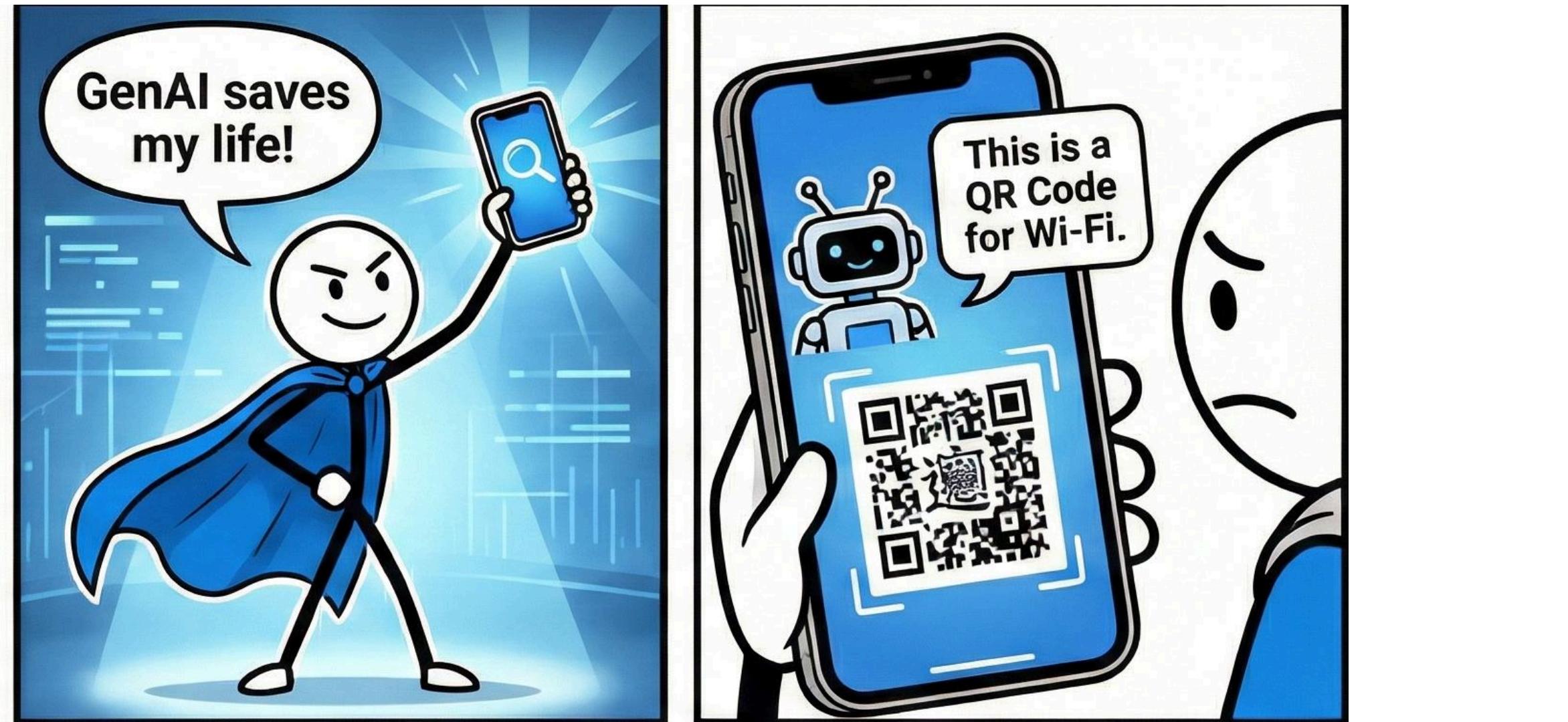
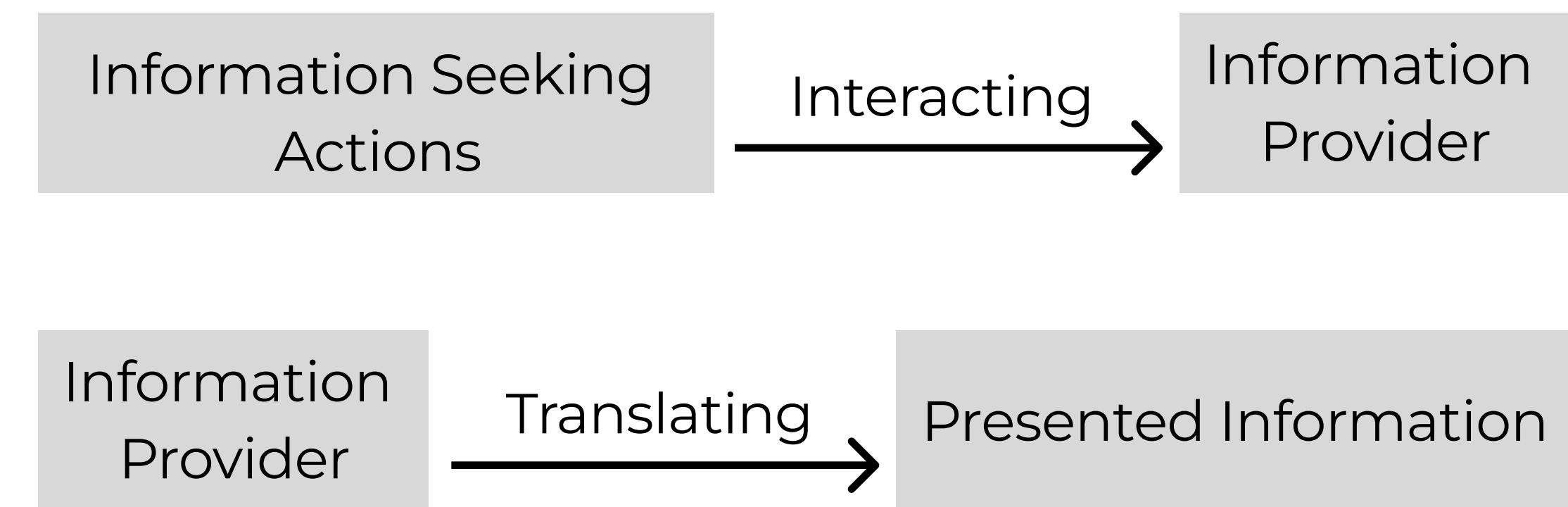
Information
Channels

Noisy; Hungry

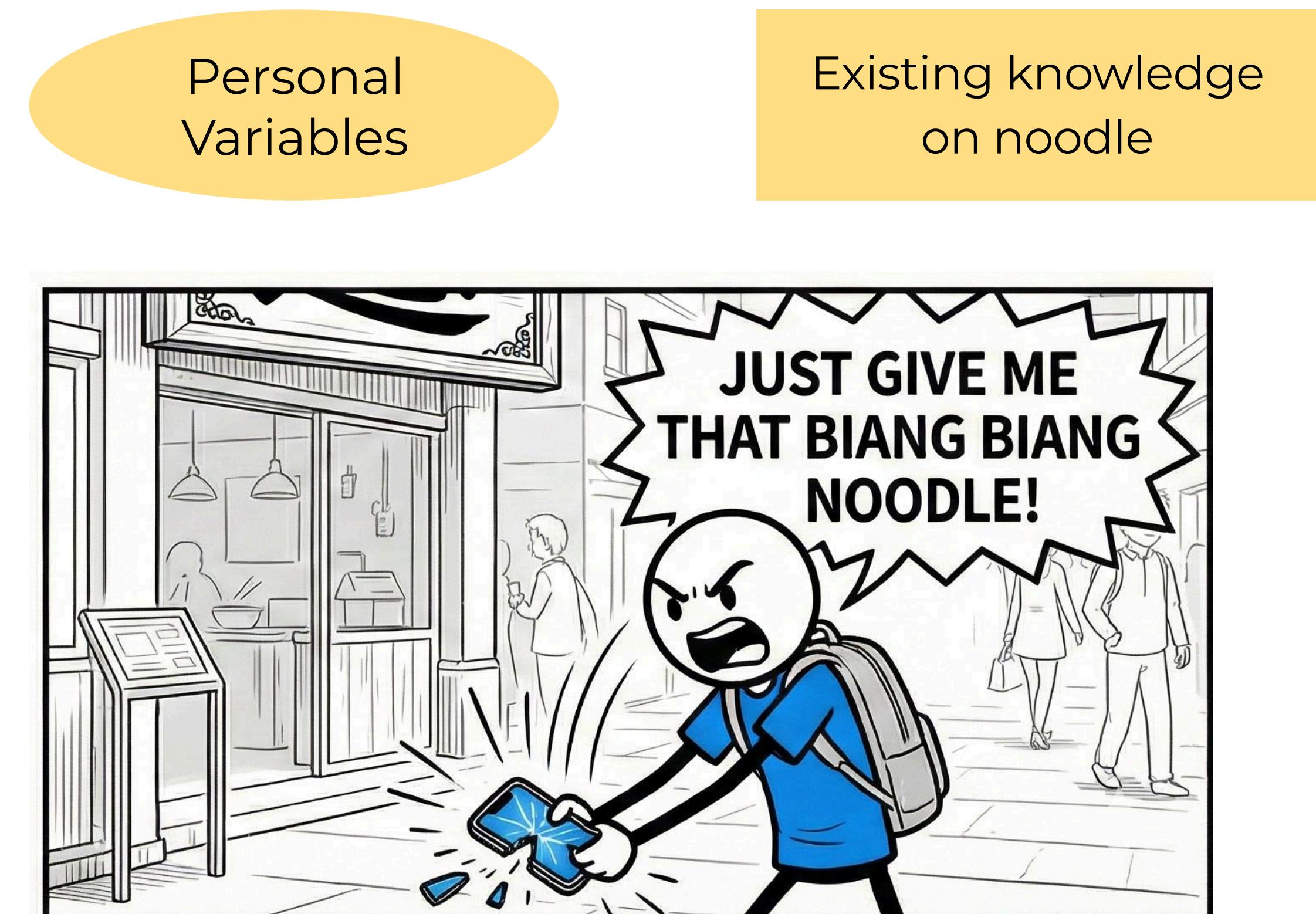
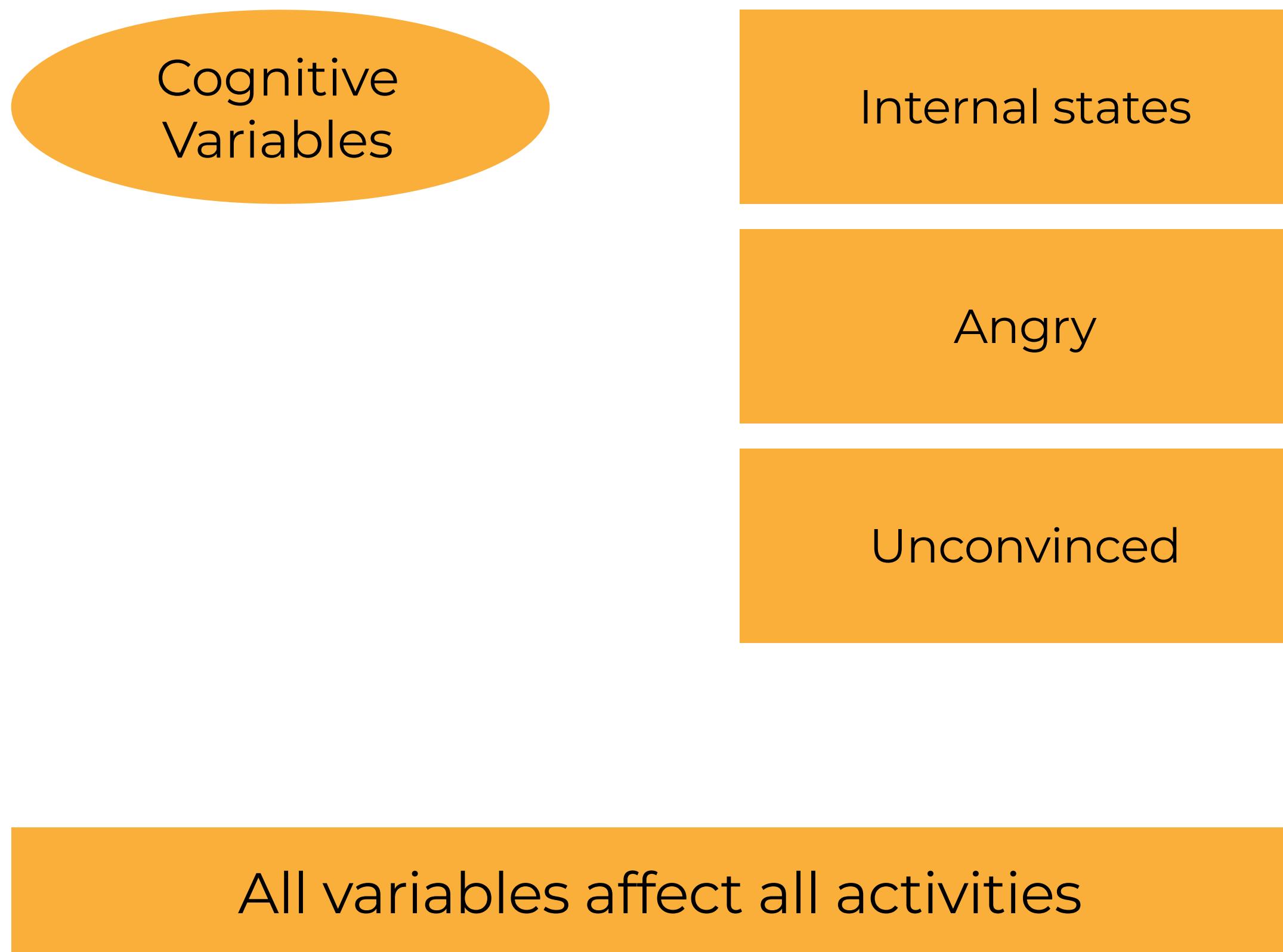
English speaker;
Technology lover

Mobile phone;
Digital system

Application: Characterization

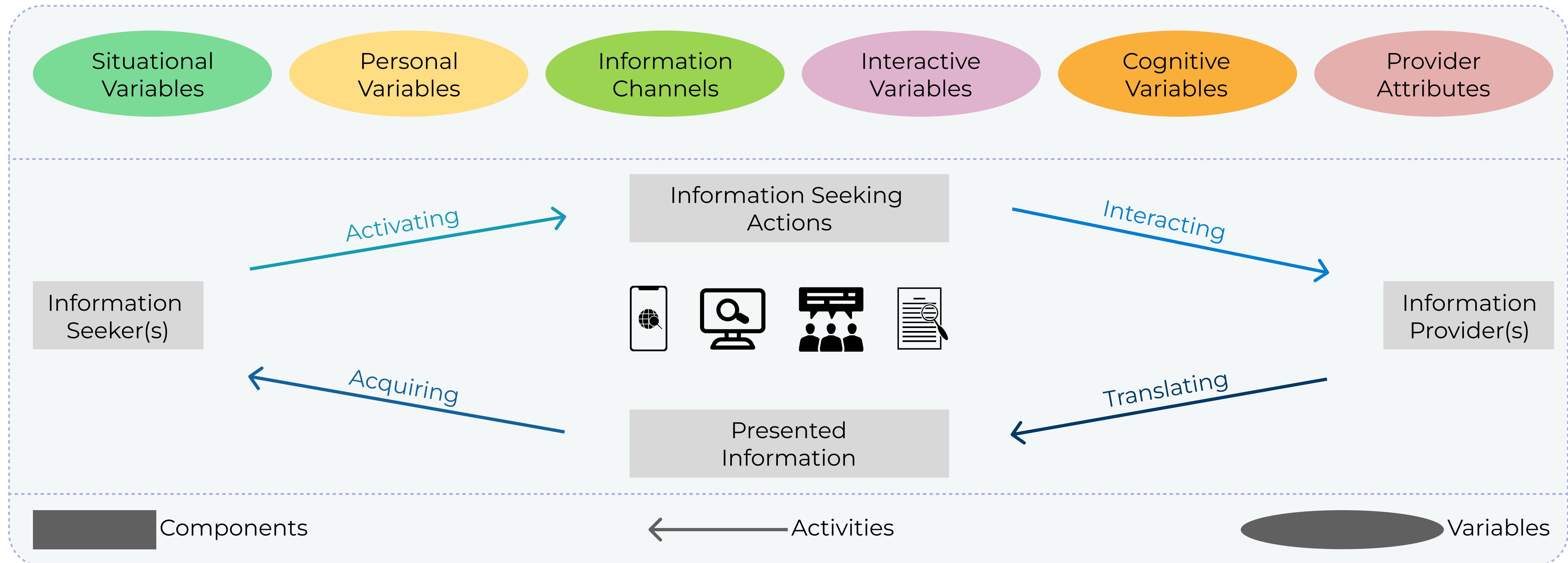


Application: Characterization



RQ2 - ISMIE Framework

Information Seeking in Modern Information Environment (ISMIE)

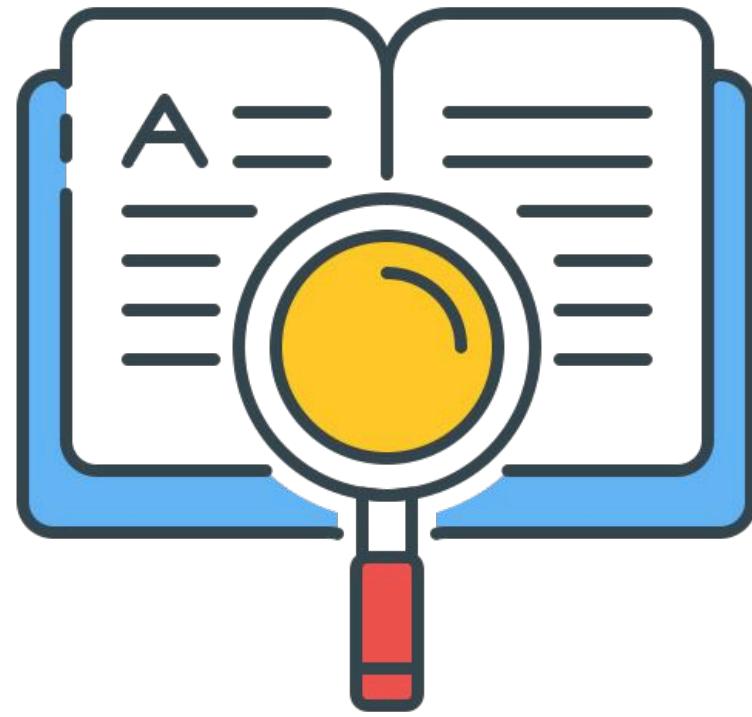


More in The Paper

- The MIE is complex relationship network: variable to activity, activity to variable, etc.
- Discussion on MIE:
 - Active Information Provider
 - Variable importance
 - Non-linearity of IS: early abundance, multi-platform knowledge synthesis, and IS feedback loop
- Other applications of ISMIE:
 - How to Inform research and experimental design
 - Trust Crisis in AI-Generated Content
 - Dopamine-driven Content

Key Takeaways

ISMIE framework aim to initialise a discourse of characterising and conceptualising MIE.



Vocabulary and
concepts



Instrument



Insights of MIEs

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