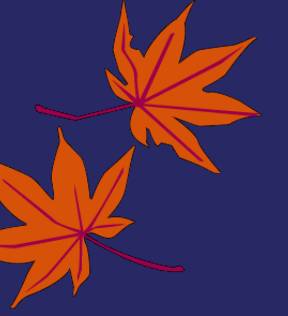


Integrating Scientific Information from Multiple Sources with Different Credibility.*

Ryuta ISEKI and Takashi KUSUMI

Kyoto University, Japan

e-mail: riseki@educ.kyoto-u.ac.jp



Introduction

[**Importance of Integration**] In the present information environment, vague and various information tends to spread abroad particular for **controversial topics**. People must examine and compare such information, and eventually integrate them in order to make more appropriate decisions.

[**Source Information**] Source information would serve cues for selecting more **credible information** (Bråten et al., 2011; Britt et al., 1999). However, this type of cue might disrupt **comprehension for texts with low credibility** and/or do for **text integration across texts with different credibilities**.

[**Research Question**] How readers learn **multiple texts about controversial topic with different credibility of source information?**

- Does a manipulation of *source information* affect comprehension?
- What effects about *intratext comprehension*?
- What effects about *intertext comprehension*?

Method

[**Participants**] **Japanese adults** with above junior-college background participated this experiment. They performed the experimental task via Internet (422 males and 432 females; 20-79 years old).

[**Materials**] Two excerpts were selected from books about genetically-modified (GM) food. Whereas one has a **negative attitude to the GM foods**, the other has a **neutral attitude** to them. The two texts were presented with fictitious source information: This text was written by expert or layperson about GM foods.

Two types of comprehension question were created (each 10 items).

- **Intratext question**: Readers can answer them correctly based on either one text.
- **Intertext question**: Reader can answer them correctly only based on both text.

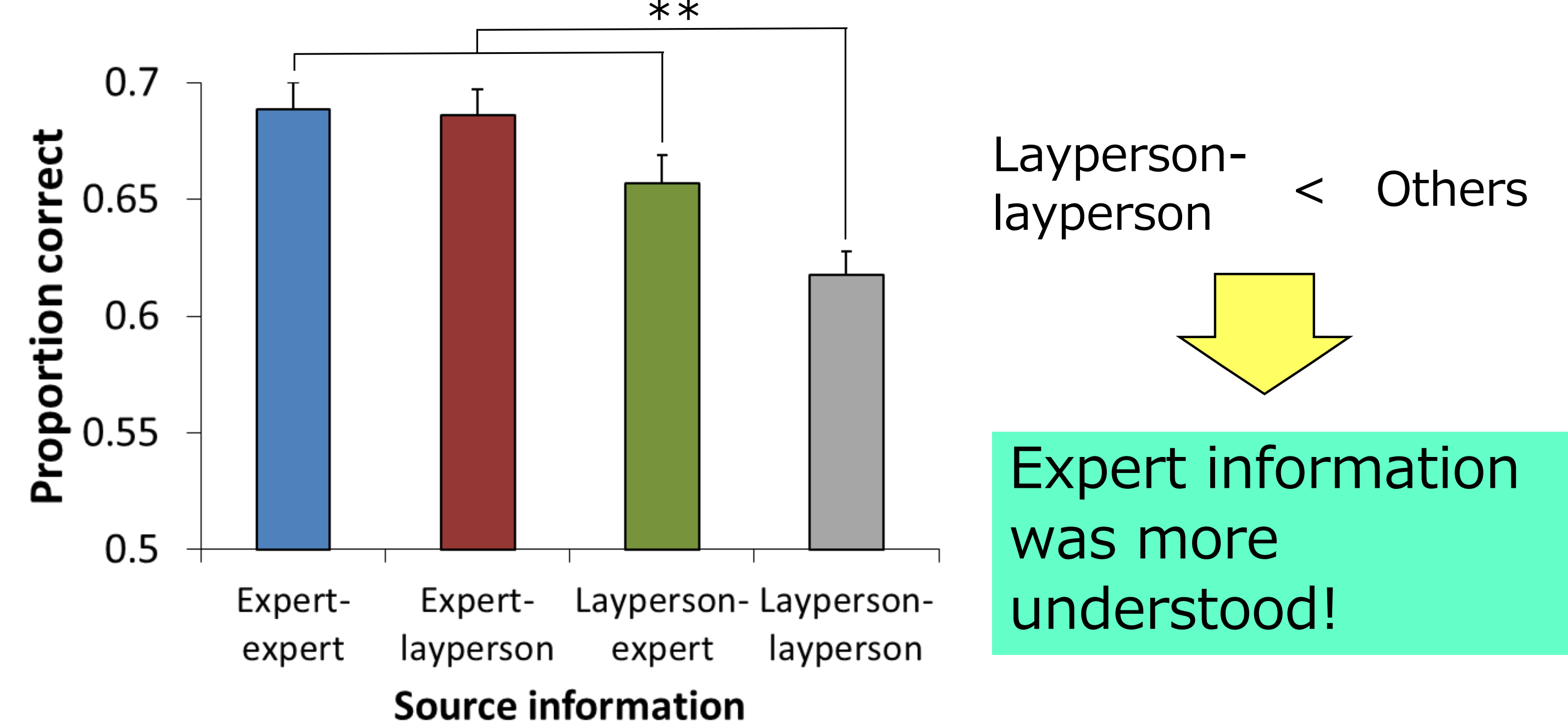
[**Design**] Participants were randomly assigned to one of **four conditions**.

	1st Text	2nd Text
Group 1: Expert	Expert	Expert
Group 2: Expert	Expert	Layperson
Group 3: Layperson	Layperson	Expert
Group 4: Layperson	Layperson	Layperson

[**Procedure**] Participants were required to read the text for over 3 min. They were to write about author's claim and its ground in one or two sentences. Then, they do the same for second text. After the second text, they answered the comprehension questions.

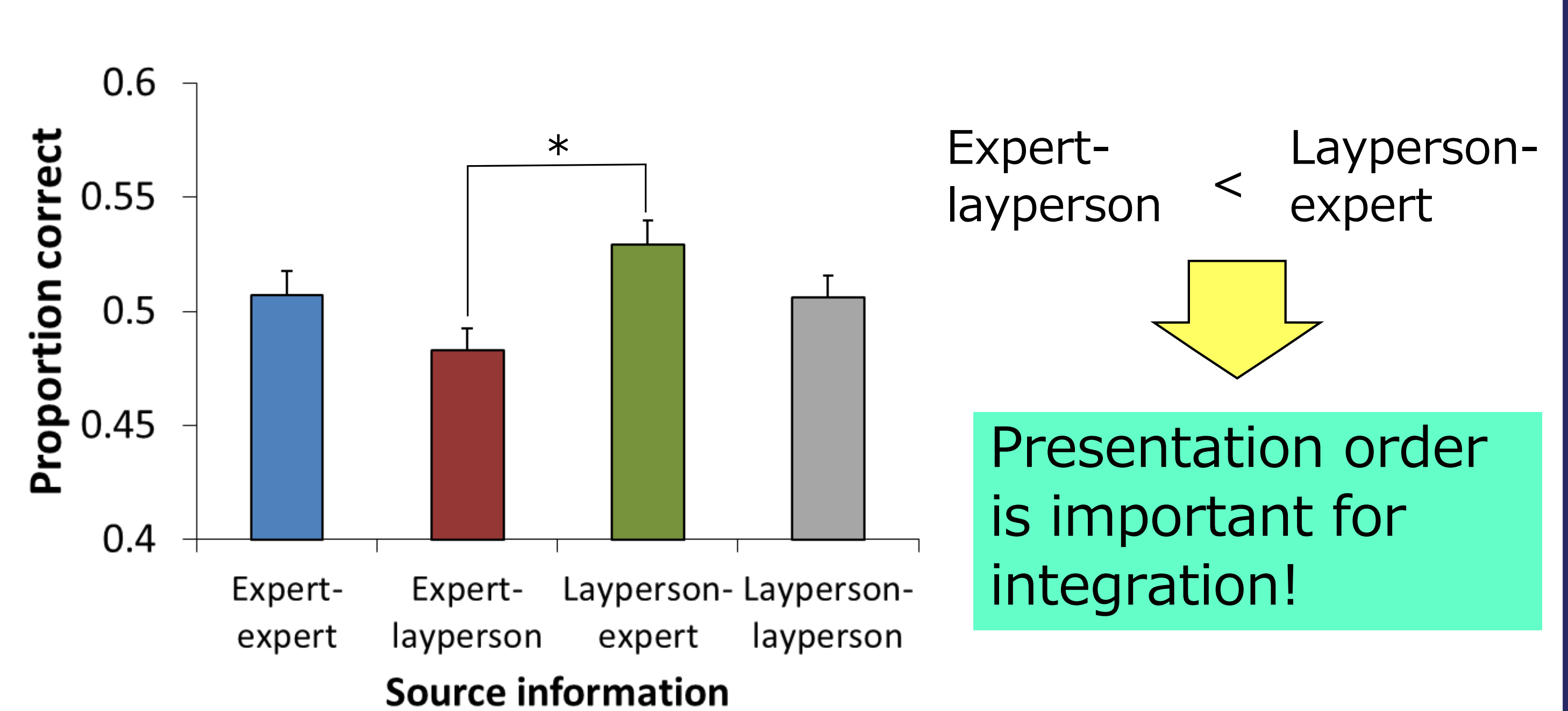
Results

[Intratext comprehension]



Source information affected intratext comprehension significantly, $F(3, 850) = 8.59, p < .001$.

[Intertext comprehension]



Source information affected intertext comprehension significantly, $F(3, 850) = 3.71, p < .02$.

Discussion

Source information affected both intra- and inter-text comprehension.

- The texts which the participants read were **same for all conditions**.
-> Source information is a substantial effect.
- **Intratext comprehension** (i.e., understanding of content of each text) was lower when both texts were allegedly written by **layperson** than when at least one text was claimed as **expert's**.
-> Is credibility for authors involved?
- **Intertext comprehension** (i.e., integration across controversial texts) was higher when the participants read **layperson's text first** than when they read **expert's first**.
-> Expert sources might invoke readers to produce static views....

References

- Bråten, I., Britt, M. A., Strømsø, H. I., & Rouet, J. F. (2011). *Educational Psychologist*, 46, 48-70.
- Britt, M. A., Perfetti, C. A., Sandak, R., & Rouet, J.-F. (1999). In S. R. Goldman, A. C. Graesser, & P. van den Broek (Eds.) *Narrative comprehension, causality, and coherence*. pp. 209-233.

Integrating Scientific Information from Multiple Sources with Different Credibility.

Ryuta ISEKI and Takashi KUSUMI

Kyoto University, Japan

Abstract

People know a variety of qualities of scientific information through diverse sources, which often differ in their credibility. We investigated how information sources with different credibility affect comprehension of a scientific topic. All participants read the same two texts that claimed inconsistent opinions about safety of genetically modified foods, but they were informed that the texts were written by expert or concerned layperson of the topic. The participants who thought to read texts by experts answered the question for intra-text comprehension better than the participants who thought to read by laypersons. Moreover, for inter-text comprehension, the order of source information had a substantial impact: The participants who receive layperson information first showed less integration of inter-text information. Additionally, presenting expert information first enhanced the inter-text comprehension. These results suggested that the source information is an important factor for science communication under the contemporary information environment.

Author Contact Information

Ryuta ISEKI	-----	riseki@educ.kyoto-u.ac.jp
Takashi KUSUMI	-----	kusumi@educ.kyoto-u.ac.jp

Reference Citation

Iseki, R., & Kusumi, T. (2011, November). Integrating scientific information from multiple sources with different credibility. Poster presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.