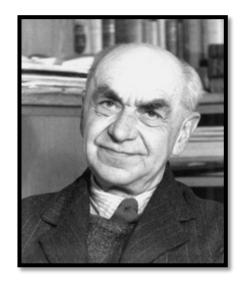
The propagation of risk judgments in transmission chains

Mehdi Moussaïd

Max Planck Institute for Human Development - Berlin



The Gossips, 1948



Frederic Bartlett













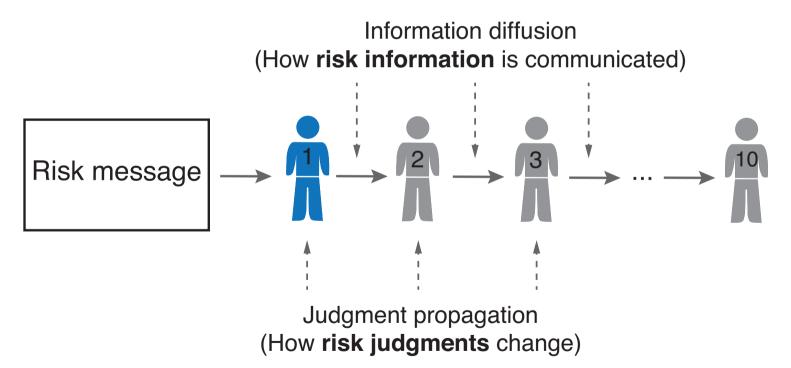






The propagation of risk information





The risks surrounding Triclosan

- A real health issue
- Controversial
- Not well-know to the general public



- An antibacterial agent
- Used in many everyday life products (soaps, deodorants, toothpastes, cleaning supplies, kitchen utensils, toys, trash bags...)
- Under review by many health agencies. Suspected to cause allergies, bacterial resistance, endocrine disruption, heart attacks, cancer, and environmental pollution...

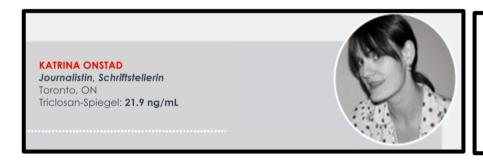
Risk message







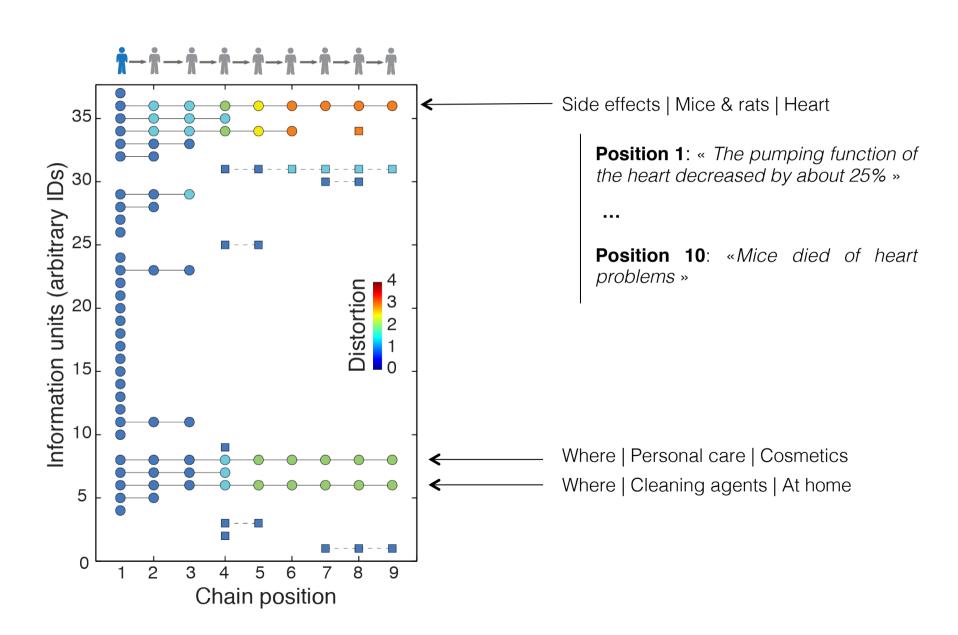




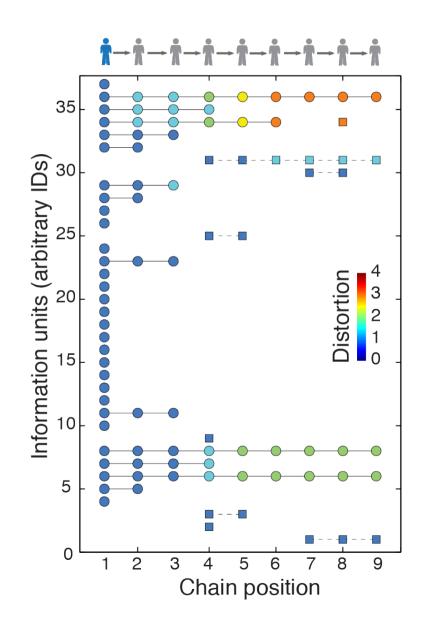
Fact Sheet Triclosan

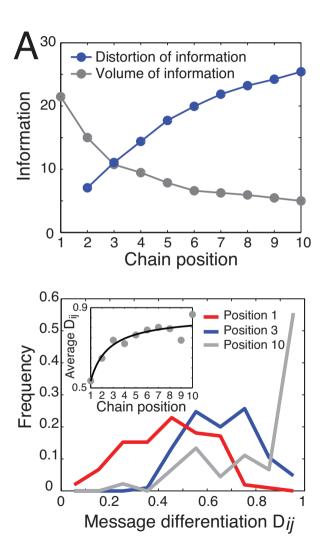
Einsatzbereich: in Seifen, Deodorants, Zahnpasta, Hautdesinfektionsmitteln, Haushaltsreinigern, Kosmetika, Schuhen, Textilien, Spielzeug und Kunststoff (für Lebensmittelgebrauch); Einsatz in Zelluloseprodukten; Einsatz im medizinischen Bereich (Imprägnierung, Keimreduktion).

Propagation of information



Propagation of information





Signal of the message

Negative signal: "And it is supposed to trigger allergies as well as confuse the

hormonal balance."

Positive signal: "As long as you don't overdo it, I don't think it's dangerous."

Neutral: "Triclosan is an antibacterial agent."

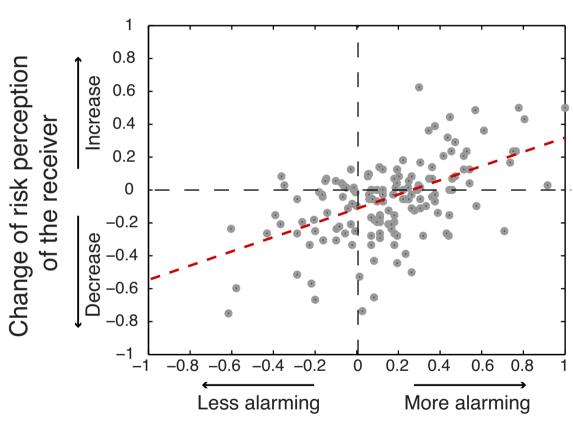
Same piece of information, but different signals:

"This dangerous stuff is everywhere, in toothpaste, in cosmetics."

"We use it everyday in toothpaste, it can't be that terrible."

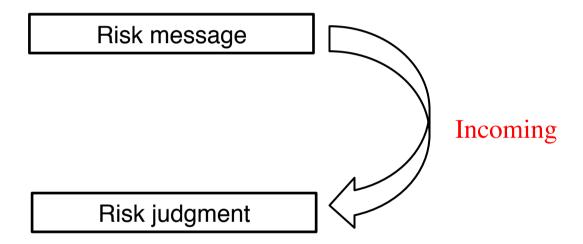
"It is contained in toothpaste."

Social influence



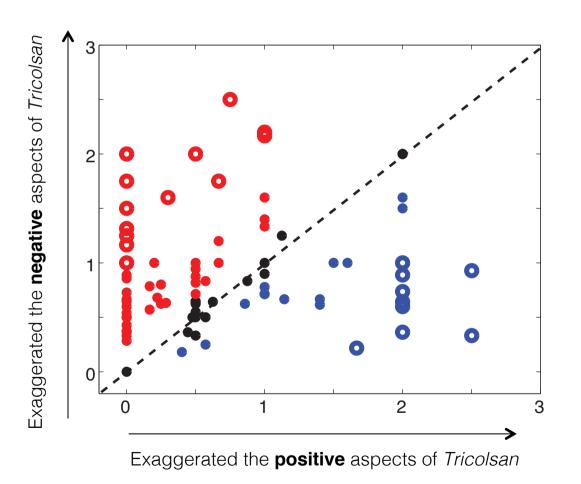
Signal of the incoming message

Feedback loop



Mutation of the message

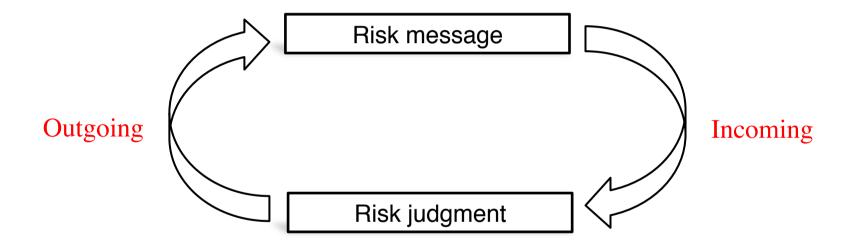
We measured how the participants changed the signal of the message they received



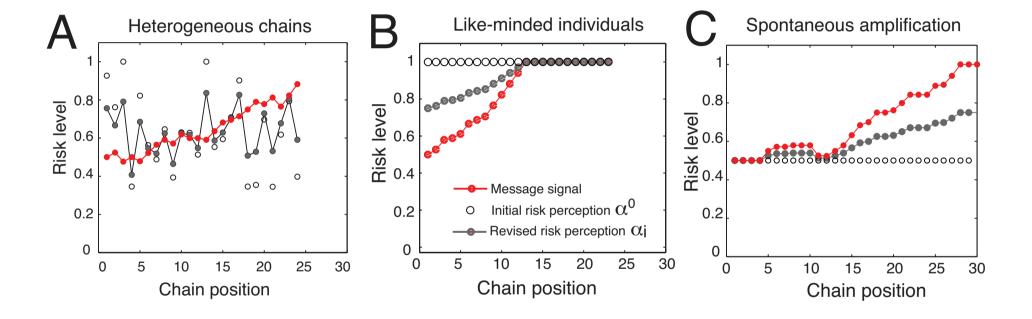
- Participants who made the message less alarming
- Participants who made the message more alarming
- Participants who had a neutral impact on the message

Correlation with risk perception: c=0.25 p=0.019

Feedback loop



Simulations



Take-home messages

- (1) Information diffusion is related to judgment propagation
- (2) Transmitted message tends to become more extreme, in the direction of the sender's judgment
- (3) The receiver's judgment tend move in the direction of the received message
- (4) At the large-scale, communication yields to amplification of existing biases

Henry Brighton



Wolfgang Gaissmaier

Extract of a recorded conversation

P1: Yes, in fact it was proved in various studies that with the cosmetic products Triclosan is getting into the body through the skin, so that it can for instance be found in the mother's milk. And it is supposed to trigger allergies as well as confuse the hormonal balance because it affects some endocrine receptors.

P2: That doesn't tell me anything (laughs). Is it more dangerous for women or is it the same for both genders? Because you mentioned the mother's milk.

P1: No, that was just an example of the accumulation in the body. I think it doesn't make a difference. Well, it causes hormonal dysfunctions and has an influence on the level of antibodies, well...

P2: I don't know the medical field so well, so to me it's somehow strange.

P1: Well, yes, it can also be found in waters. With sunlight it can be changed to dioxins, but I don't know if you know about that.

P2: So how big is the probability that something like it can appear? Big or small?

P1: Appear... what?

P2: The allergies, well, the side effects of Triclosan.

P1: I don't know how big it is.

P2: So the articles say to keep your hands off, right?

P1: The overall impression was it should actually not been used.

Moussaïd, Brighton & Gaissmaier *The amplification of risk in experimental diffusion chains* (2015) Proceedings of the National Academy of Sciences, 112 (18), 5631-5636