



SSPH+ Annual Meeting 2026

Infodemics and the challenge of misinformation for public health

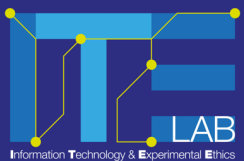


SSPH+

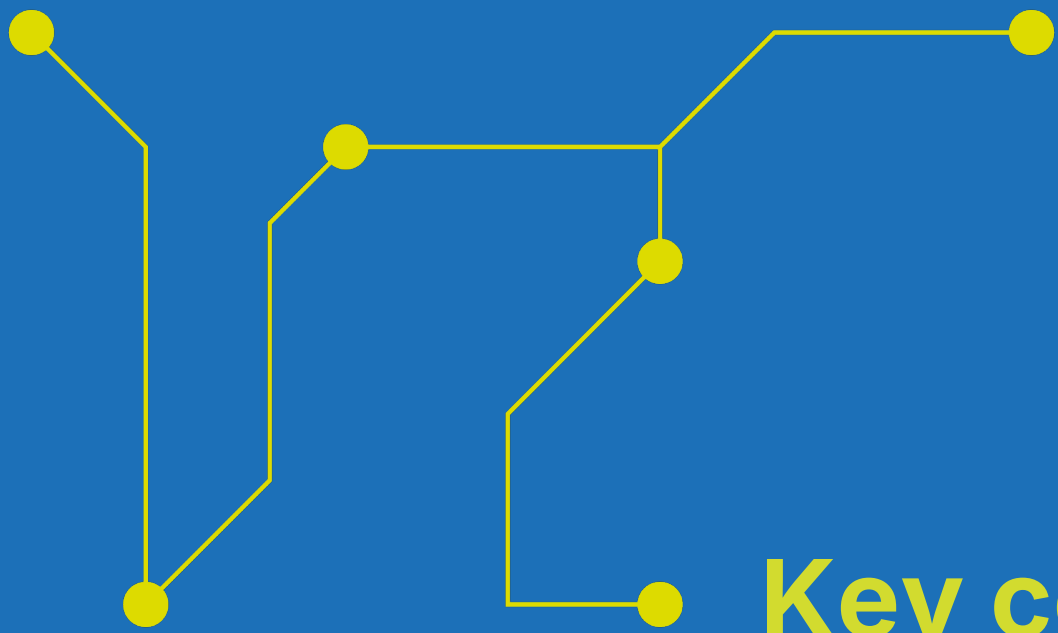
SWISS SCHOOL OF
PUBLIC HEALTH

A FOUNDATION OF SWISS UNIVERSITIES

June 23-24, 2026
Fribourg, Switzerland



Assoc. Prof. Dr. Federico Germani
Fribourg, Switzerland



Key concepts and definitions

Key concepts and definitions | How to handle misinformation |
How to identify misinformation | Why it matters



Assoc. Prof. Dr. Federico Germani



“Your defenses...must therefore be flexible and inventive as the Arts you seek to undo”

PROFESSOR SEVERUS SNAPE (Harry Potter)

Infodemic

Overabundance of information, including accurate information and disinformation



Infodemic

An infodemic is an **overabundance of information, accurate or not**, in the digital and physical space, accompanying an acute health event, such as an outbreak or epidemic. It causes confusion and influences attitudes and behaviours that can harm health. It also contributes to mistrust in health authorities and undermines the public health response. [...] With growing digitization – an expansion of social media and Internet use – information can spread more rapidly.

WHO, 2025

“We are not just fighting an epidemic – we are fighting an infodemic”

WHO Director-General



Infodemic

When the Buzz Bites Back

By DAVID J. ROTHKOPF

SARS is the story of not one epidemic but two, and the second epidemic, the one that has largely escaped the headlines, has implications that are far greater than the disease itself. That is because it is not the viral epidemic but rather an "information epidemic" that has transformed SARS, or severe acute respiratory syndrome, from a bungled Chinese regional health crisis into a global economic and social debacle.

SARS, as is well-known, has taken a heavy toll with more than 7,100 reported victims worldwide and more than 500 reported deaths so far. But the consequences of the related "epidemic" have been more far-reaching than the underlying disease and, quite possibly, more costly, affecting the lives of millions. What is more, the information epidemic—or "infodemic"—has made the public health crisis harder to control and contain.

What exactly do I mean by the "infodemic"? A few facts, mixed with fear, speculation and rumor, amplified and relayed swiftly worldwide by modern information technologies, have affected national and international economies, politics and even security in ways that are utterly disproportionate with the root realities. It is a phenomenon we have seen with greater frequency in recent years—not only in our reaction to SARS, for example, but also in our response to terrorism and even to relatively minor occurrences such as shark sightings.

Over the past two years, information epidemics have left many airlines and the global tourism industry in intensive care. But their future effects may be greater still.

Unchecked, they could usher in a period of profound new forms of economic inefficiency, opportunities for the irresponsible and for demagogues to practice new forms of social disruption or manipulation, and a set of serious new problems for policymakers dealing with challenges from public health to international affairs.

Infodemics are emerging as one of the most virulent

See EPIDEMIC, B5, Col. 1

David Rothkopf is chairman and CEO of Intellisbridge Corp., which provides open-source



Rothkopf 2003

Information ecosystem

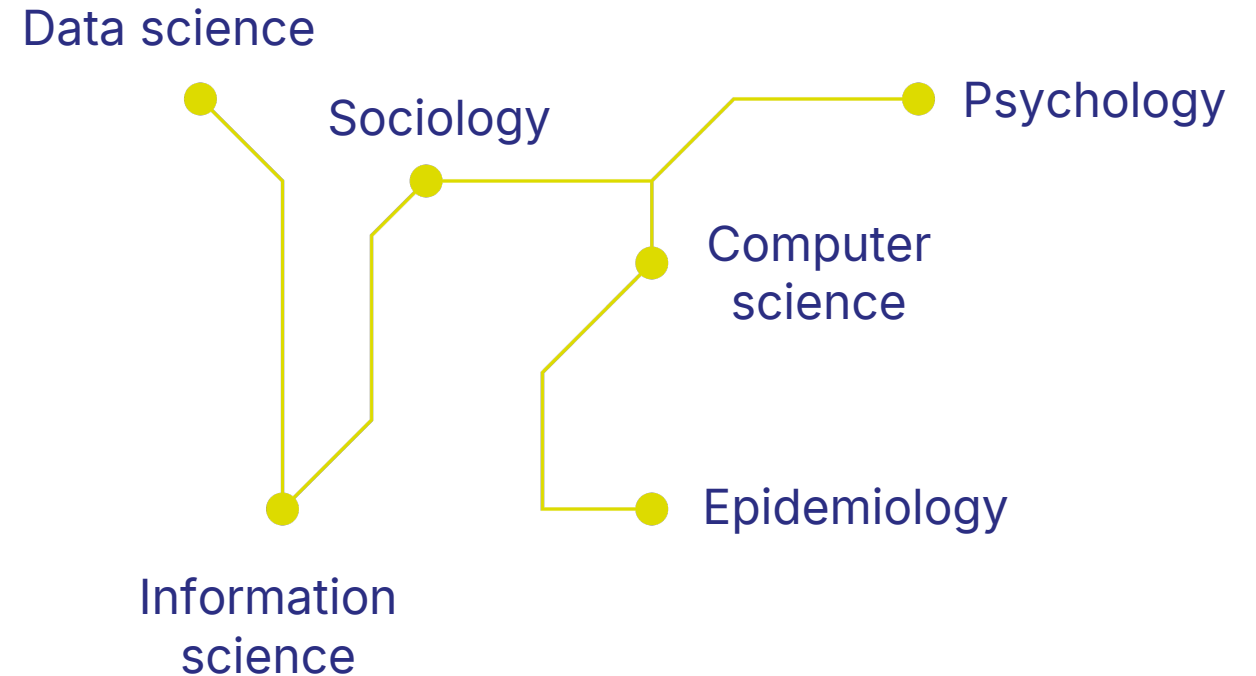
An information ecosystem comprises the actors, structures and relationships that impact the transmission, production and consumption of information in a given environment. [...] A person's information ecosystem is the complex, dynamic infrastructure, sources and relationships through which information flows and reaches an individual. [...]

WHO, 2025

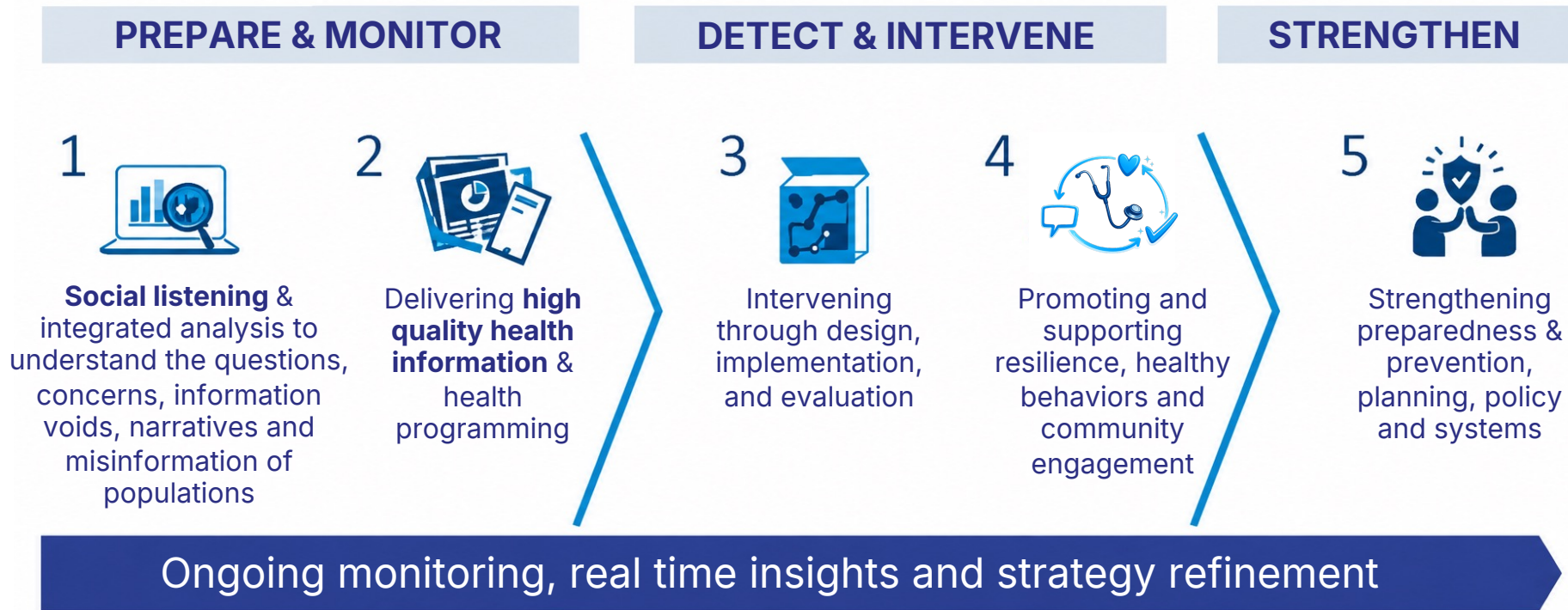


Infodemiology

- The study of the determinants and distribution of health information and mis/disinformation;
- the definition expanded to go beyond studying the use of data produced and consumed on the web and to include:
- An integrated understanding of the online-offline information exchange and interactions;
- How these lead to behaviours that impact health outcomes.



Infodemiology → Infodemic Management



WHO, 2023

Misinformation

FALSENESS

Inaccurate information;
Users spread misinformation thinking it's true

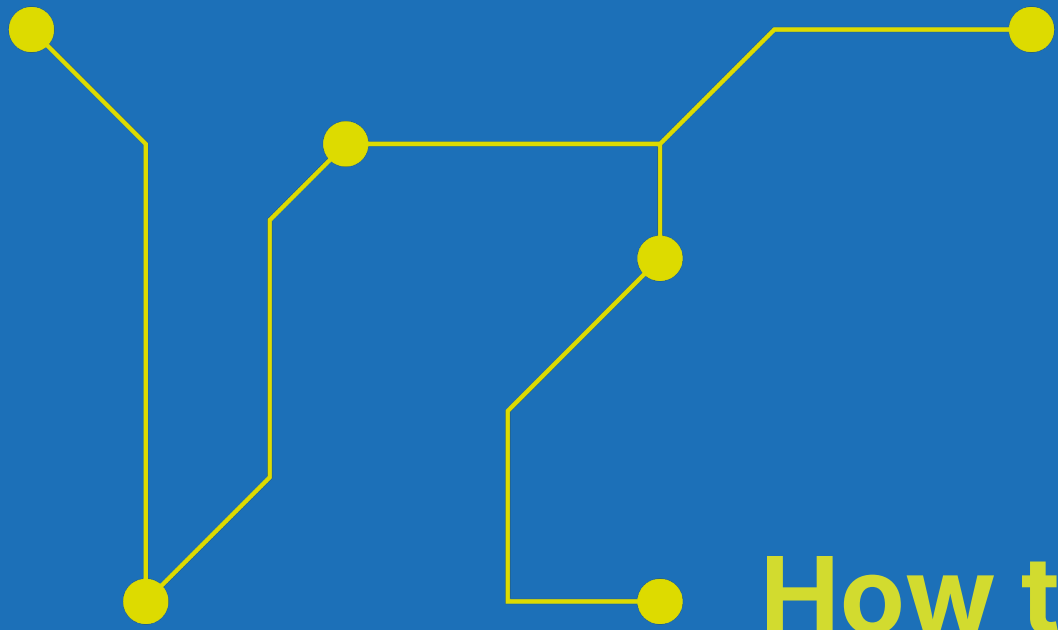
Malinformation

INTENT TO HARM

Use of true information with the intent to harm (e.g. privacy breach)

Disinformation

Wardle & Derakhshan, 2017



How to handle misinformation

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Debunking

Social listening

False claim

Health Freedom Now
May 12 at 9:47 AM · 🌐

They don't want you to know the truth. 5G + vaccines = DANGER.
#WakeUp

5G CAUSES CANCER

THE VACCINE IS THE INSTRUCTION SET

- 1 YOU GET VACCINATED
- 2 NANO-PARTICLES ENTER YOUR BLOODSTREAM
- 3 5G SIGNALS ACTIVATE THE PARTICLES
- 4 BIOLOGICAL CHANGES AT THE CELLULAR LEVEL

- ⚠️ CHRONIC INFLAMMATION
- ⚡ CELLULAR STRESS
- 🧬 DNA INSTABILITY
- 🦠 INCREASED CANCER RISK

WHY ARE THEY PUSHING 5G EVERYWHERE?
Why are so many questions forbidden?
ASK. QUESTION. RESEARCH. THINK.

SHARE THIS BEFORE THEY DELETE IT.
People need to know the truth.

👍👎👤 1.2K 237 Comments 1.6K Shares

👍 Like 💬 Comment ➦ Share

Debunking

Social listening

False claim

"It's false and can lead people to take poor health decisions!"

Health Freedom Now
May 12 at 9:47 AM · 🌐

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Like Comment Share



False claim

"It's false and can lead people to take poor health decisions!"

Delete / Censor

Issue a CORRECTION



False claim

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Delete / Censor

Issue a CORRECTION

False claim

It's false and can lead people to take poor health decisions!"

Delete / Censor

Issue a CORRECTION

World Health Organization (WHO) ✓
May 12 at 10:30 AM · 🌐

Fact check: No, 5G does not cause cancer and vaccines do not activate 5G signals in your body.
#ScienceNotMisinformation

FALSE CLAIM

5G causes cancer. Vaccines activate 5G signals in your body like an instruction set.



THE FACTS

- 5G is radiofrequency technology.** It uses non-ionizing radiation at very low levels, which does not damage DNA or cause cancer.
- Vaccines do not contain microchips or nanotechnology.** They cannot be activated by any external signal.
- Extensive scientific studies** consistently show no link between 5G exposure, vaccines, and cancer.

TRUST SCIENCE. TRUST FACTS.
Reliable information protects our health.

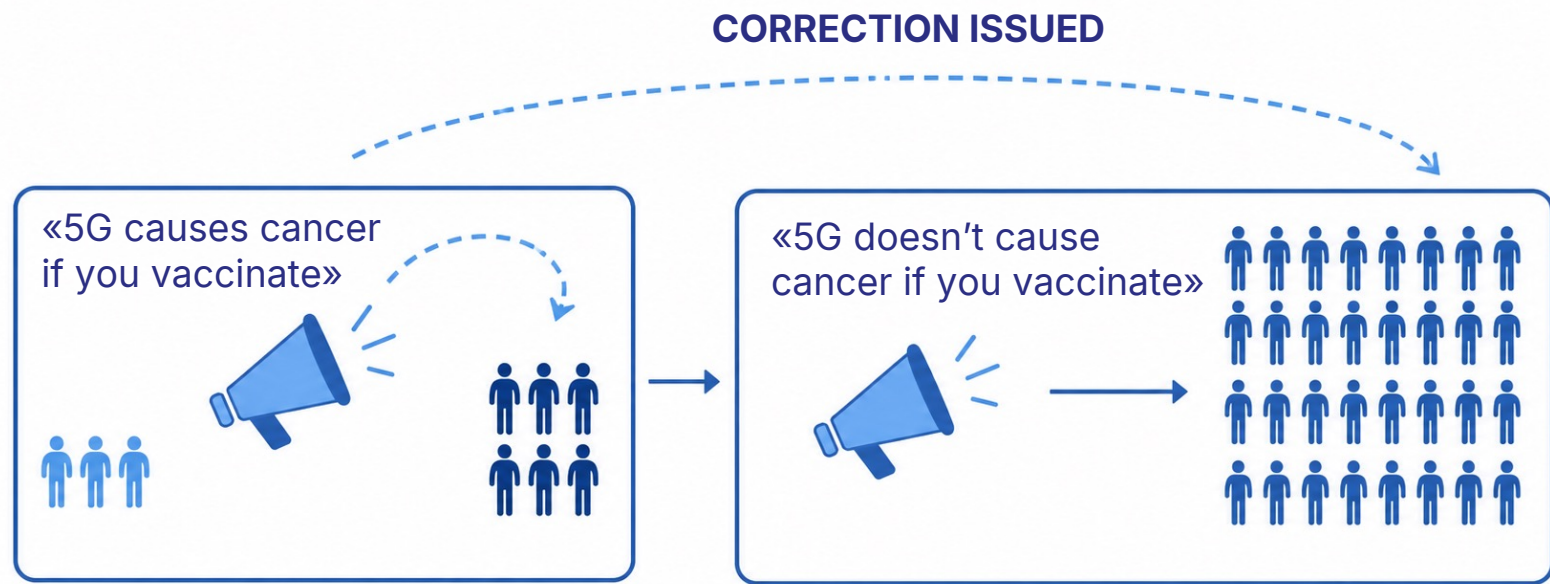
Check trusted sources: [who.int](https://www.who.int)

👍❤️👏 8.1K 1.2K Comments 3.4K Shares

On combining representation and algorithmic bias



Fringe narratives treated as emerging public concerns (noise taken as signal)



Unwilling exposure of many people to the narrative

From debunking to prebunking

Limitations of debunking

- Repetition of false claims can “backfire”;
- Reinforcement of “belief echoes” on social media;
- Impossible to debunk everything (volume);
- Only works for clearly false claims (not for grey-zones and uncertain claims);
- A posteriori (response rather than anticipation)!



Biological vaccine

Weakened or inactivated pathogen

Immune response (antibodies)

Resistance to infections

Psychological inoculation

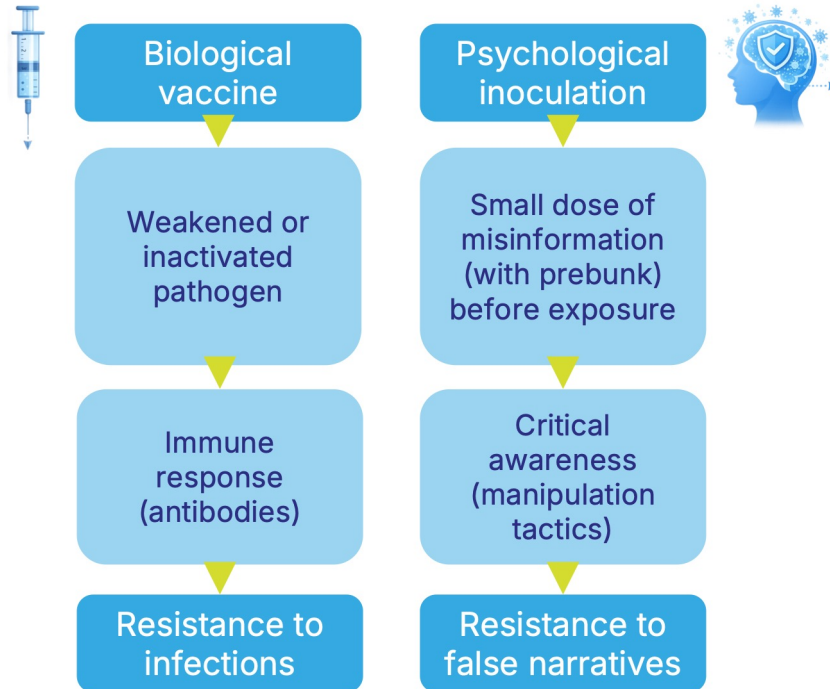
Small dose of misinformation (with prebunk) before exposure

Critical awareness (manipulation tactics)

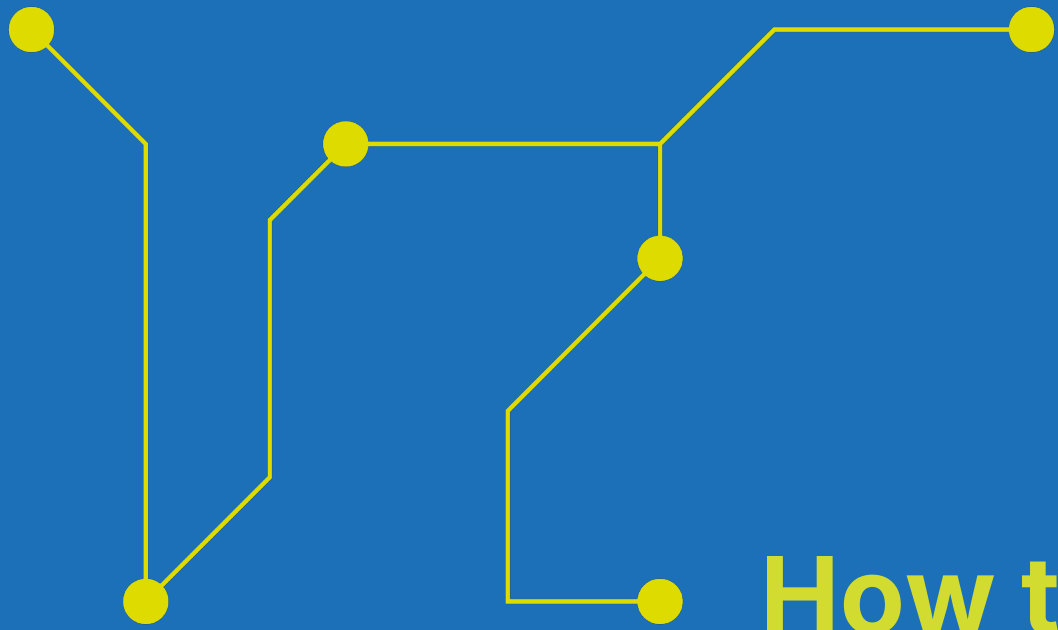
Resistance to false narratives



From debunking to prebunking



Basol et al. 2020



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Identifying revelatory manipulation sign



“ Lies, my dear boy, are found out immediately, because they are of two sorts. There are lies that have **short legs**, and lies that have **long noses**. Your lie, as it happens, is one of those that have a long nose. ”

Collodi 1883

The nose as revelatory manipulation sign

Falsehoods "with short legs"

Disinformation without viral potential:

- «Fribourg is bigger than New York»
- «It's snowing in Doha, Qatar»
- «Swimming is faster than running»



Falsehoods "with long noses"

Advanced trickery, e.g.

"New peer-reviewed research from a European university shows that moderate lockdowns actually increased excess mortality in younger populations. Why aren't public health authorities discussing this?"



Can we identify manipulation signs? (see the "growing nose")?

Falsehoods "with long noses"

Exploit:



The **linguistic** layer, focusing on functions of language;



The **narrative structure**, including archetypes and narrative phases;



The **logic**, identifying the presence of logical fallacies in the text;



The **critical thinking**, evaluating the text based on critical thinking skills features



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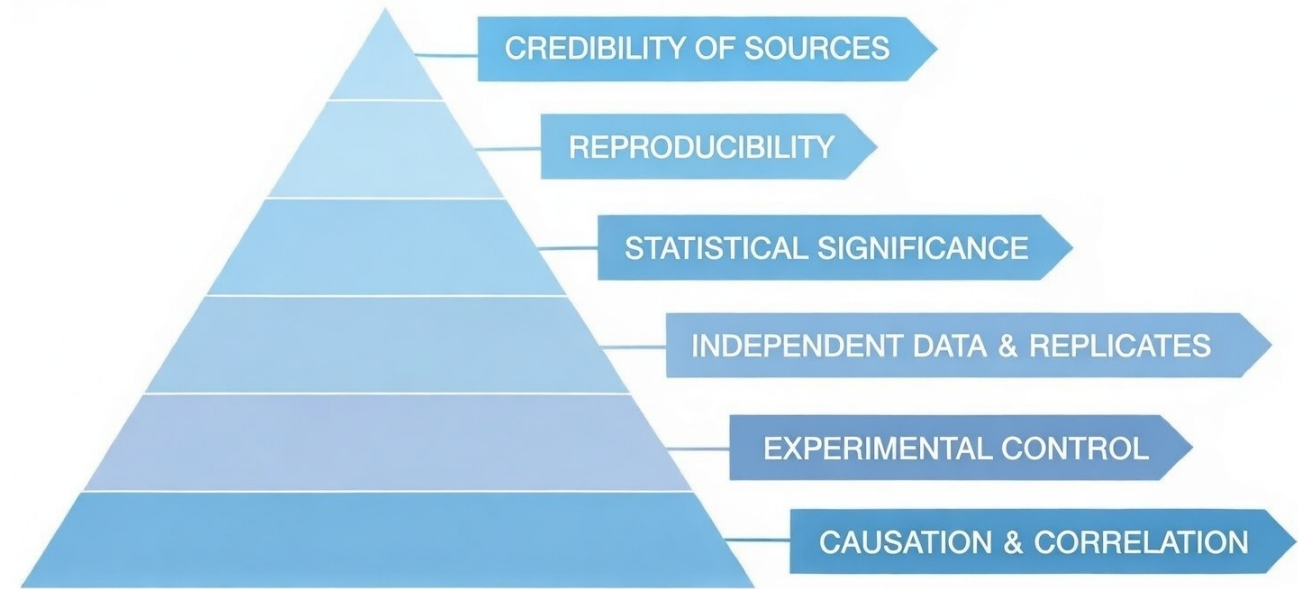
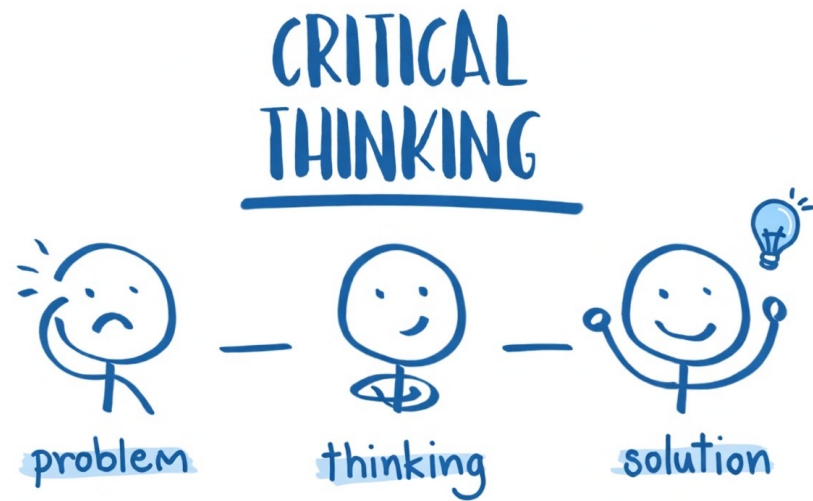


The **critical thinking**, evaluating the text based on critical thinking skills features



The fingerprints of mis/disinformation

Redaelli et al. 2026



Redaelli et al. 2025

Building FakeSpotter: A Viral Misinformation Detection Tool

TEXT ANALYSED

Why are World Health Organization and governments so obsessed with telling us 5G is safe?

Bill Gates funds global tech and health initiatives. 5G rollout accelerates. Cancer rates in young people rise.

Coincidence?

Wake up.

98
Risk index / 100

23
Caution index / 100

VERY LIKELY FALSE
Risk band 5/5





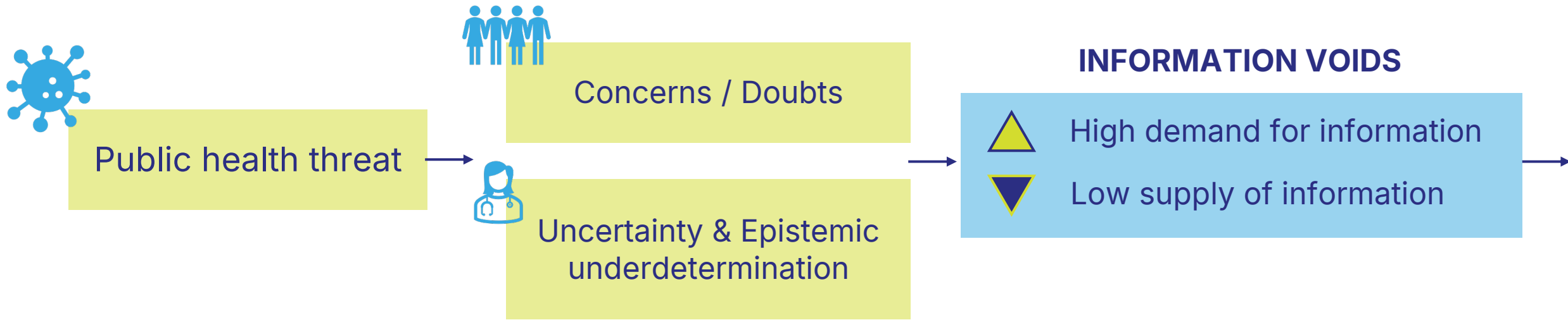
Why it matters

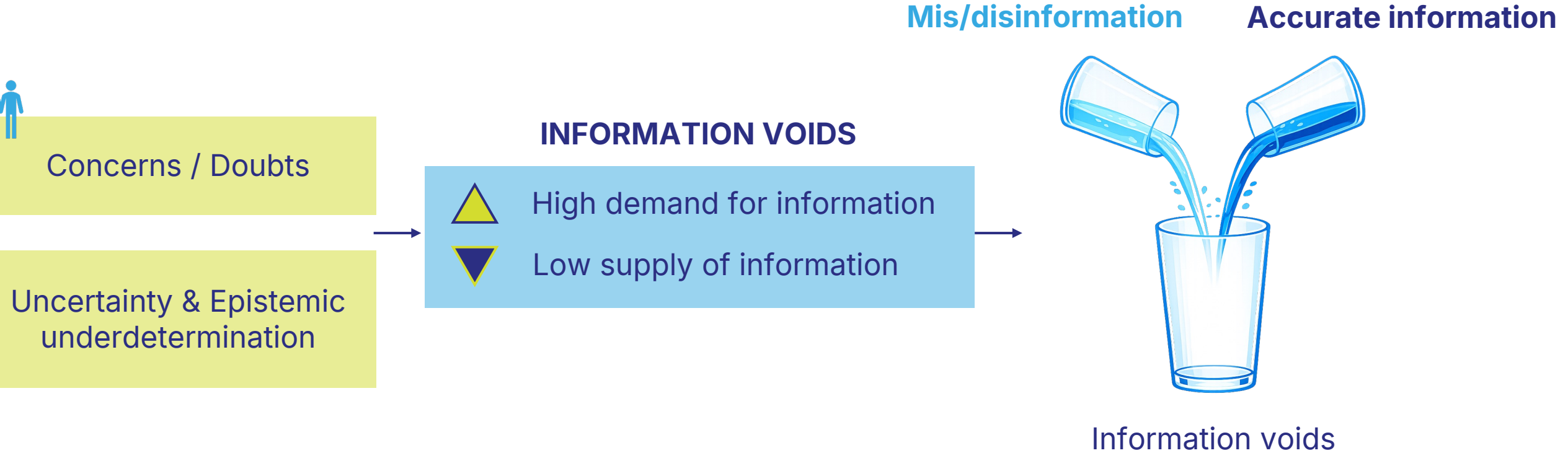
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What happens during public health crises?





ION VOIDS

d for information
of information

Mis/disinformation

Accurate information

Evidence



Information voids



Information voids get filled with **mis/disinformation**

Mis/disinformation

Accurate information



Information voids



Evidence



Information voids get filled with **mis/disinformation**

Informing communication

DETECTION
(Social listening)

Mis/disinformation Accurate information



Information voids get filled with **mis/disinformation**

DETECTION
(Social listening)

Informing communication

Slow, reactive approach!

Evidence

*Detection requires knowing what is false!

ate information



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ion



Slow, reactive approach!

Evidence

*Detection requires knowing what is false!

Fingerprinting

FEATURE SCORE BREAKDOWN

Linguistic functions (J)

J-EMO score — Emotive function	0.75
J-CON score — Conative function	0.80
J-REF-S score — Referential support	0.20
J-REF-C score — Referential challenge	0.60

Narrative structure (P)

P-ANT score — Antagonist framing	0.70
P-HEL score — Helper framing	0.17
P-TUR score — Turning point	0.50
P-PUN score — Punishment framing	0.33

Logical fallacies (L)

L-NAT score — Appeal to nature	0.17
L-CAR score — Bandwagon fallacy	0.33
L-BUR score — Burden of proof	0.30
L-OCC score — Occam's Razor failure	0.47
L-INC score — Inconsistency	0.57
L-FAL score — Lack of falsifiability	0.23
L-CON score — Conjunction fallacy	0.15

Irony & Disinformation

LOL score — Irony / sarcasm	0.47
DIS score — Direct disinformation signal	0.70

Critical thinking (C)

C-CCC score — Causation—correlation conflation	0.57
C-STA score — Insufficient statistical reasoning	0.47

Fingerprinting

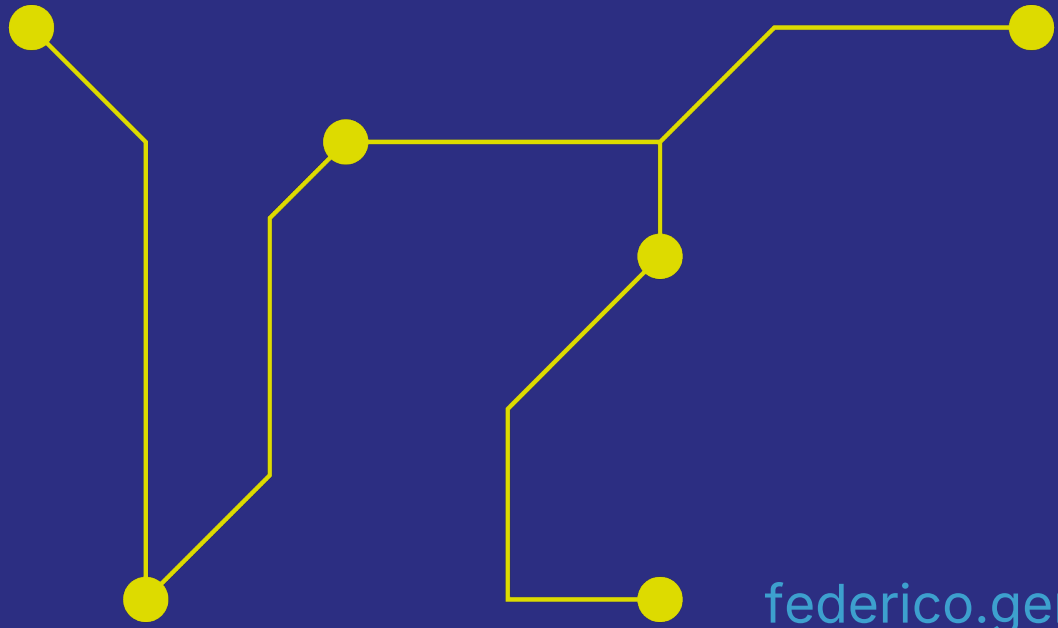


- Fast detection of misleading information with viral potential;
- Content agnostic;
- Probabilistic tool:
- Manipulation tactics can evolve to a limited extent
→ They are mostly conserved

Slow, reactive approach!

ence

requires knowing what is false!



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Information **T**echnology & **E**xperimental **E**thics