



# CHALLENGE 3: THE COMPLEXITY OF RISK PERCEPTION

HOW TO DEAL WITH MISINFORMATION AND DISINFORMATION  
DURING PUBLIC HEALTH EMERGENCIES

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# LEARNING OBJECTIVES

1. To familiarize with the concept of **risk perception** and its **importance for persuasion**
2. To get acquainted with the **main challenges related to risk perception when communicating health risks**
3. To learn **possible strategies** that institutions can implement to consider risk perception in their communication during public health emergencies

# RISK PERCEPTION: WHAT IS IT?

- **Risk perception** is broadly defined as an «**evaluation of the probability as well as the consequences of an uncertain outcome**»
- There are **3 dimensions** of perceived risk: perceived likelihood, perceived susceptibility, and perceived severity

# PERCEIVED LIKELIHOOD

Refers to the evaluation of **probability that one will be harmed** by the hazard



«Everyone around me seems to be infected, I am afraid I will most likely get the new coronavirus.»

# PERCEIVED SUSCEPTIBILITY

Refers to the evaluation of an **individual's constitutional vulnerability** to a hazard



«I never get the seasonal flu, so I believe that I am less likely to get infected by the new coronavirus compared to my friends!»

# PERCEIVED SEVERITY

Refers to the evaluation of the **extent of harm a hazard would cause for the individual**



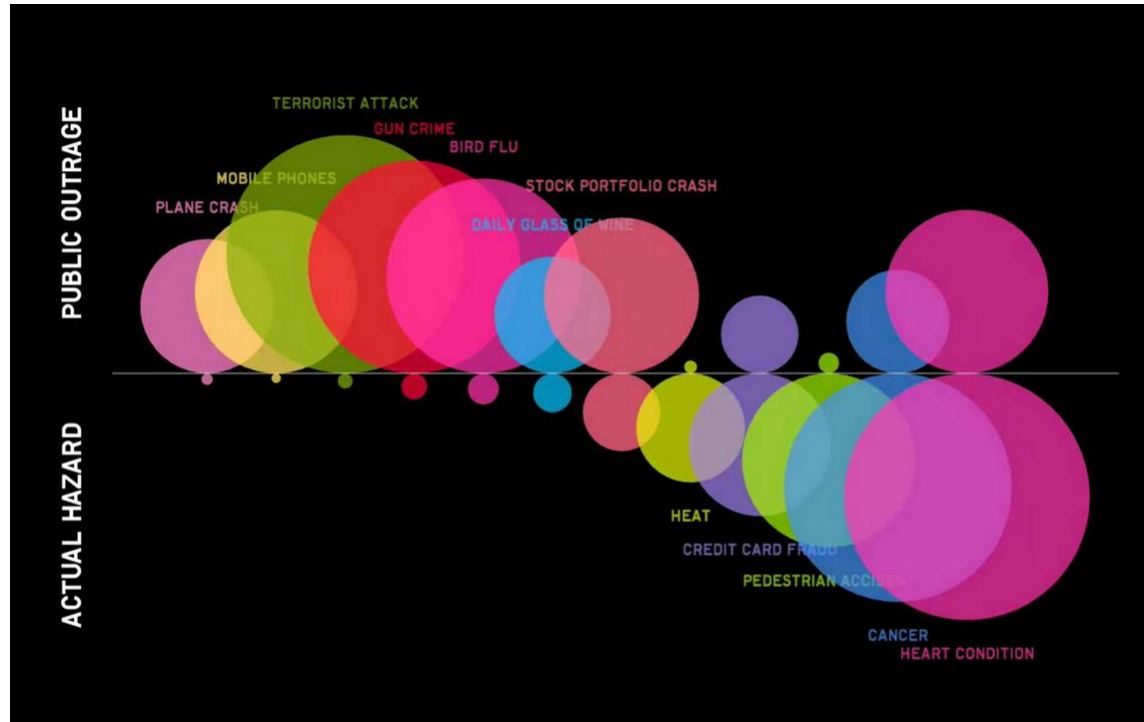
«I am young and healthy! Even if I catch the coronavirus I will most likely not experience serious consequences.»

# RISK PERCEPTION VS. ACTUAL RISK

- Actual risk = the degree of risk associated with a given behavior is generally considered to represent the likelihood and consequences of harmful effects that result from that behavior.
- **Risk perception often greatly differs from the actual risk magnitude**



# RISK PERCEPTION VS. ACTUAL RISK

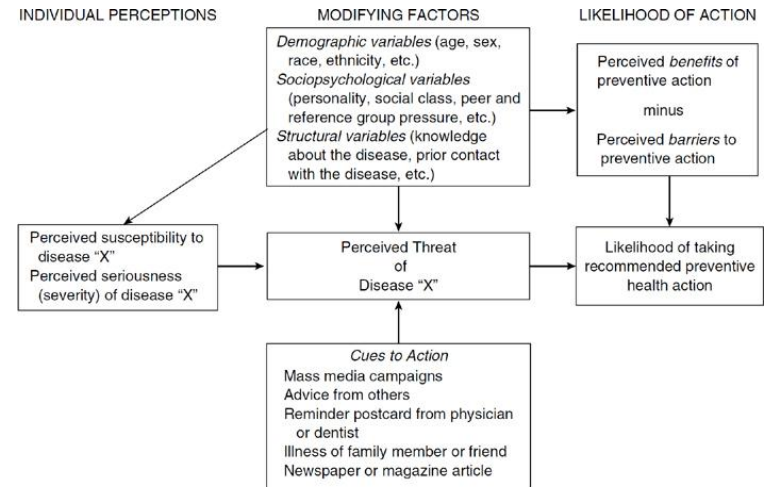


SCREENCAP from Susanna Hertrich's REALITY CHECKING DEVICE [susannahertrich.com](http://susannahertrich.com) [via [InformationIsBeautiful.net](http://InformationIsBeautiful.net)]



# RISK PERCEPTION: WHY IT IS IMPORTANT FOR INSTITUTIONAL COMMUNICATION?

- **Risk perception** (and not actual risk) is a **main determinant of behavior** (e.g., Health Belief Model)
- Wrong risk communication can lead to wrong risk perception and suboptimal outcomes



SOURCE: Rosenstock, I. M. (1974b, p. 334).

# RISK PERCEPTION: WHY IT IS IMPORTANT FOR INSTITUTIONAL COMMUNICATION?

- In the case of public health emergencies, an overestimation of the risk can lead to **unnecessary worries**, while an underestimation can result in **non-compliance** with official recommendations



# MAIN CHALLENGES IN RISK COMMUNICATION

There are **many factors that can influence risk perception** and should therefore be addressed by risk communication. Here we will **focus on three main challenges**, which are particularly **relevant for communication during public health emergencies**:

1. Difficulties in the visualization of risks
2. Nature of risk
3. Heuristics and biases

# 1. DIFFICULTIES IN THE VISUALIZATION OF RISKS

- One of the most common problems in correctly evaluating risks is linked to the **inability to visualize the risk** we are presented
- When we cannot «see» a risk, it becomes **very difficult to accurately evaluate our perceived susceptibility to the disease and its severity**

# EXAMPLE: RISK OF INFECTION

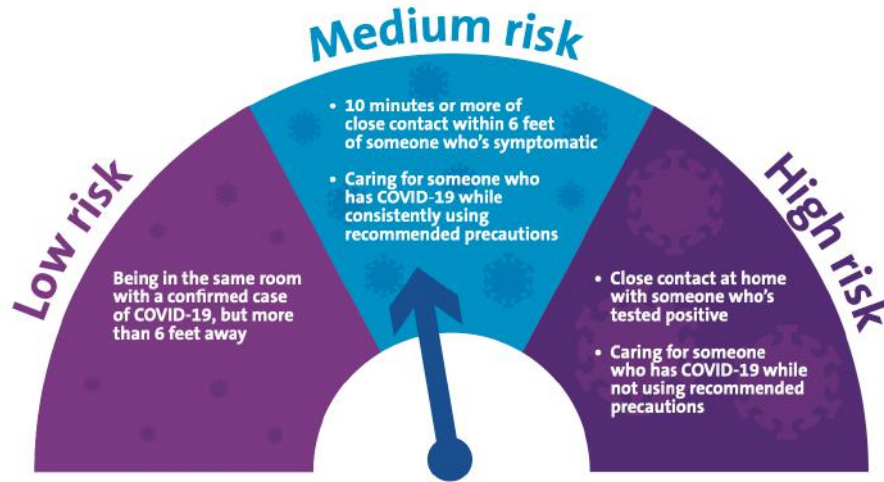
**COVID-19**  
Your chances of catching it



Northwell Health  
Current as of March 16, 2020



W305478r\_COVID-19\_16Mar2020




Source:  
CDC, Risk Assessment

What do “low”, “medium” and “high” mean concretely?  
Compared to what?

When risks are given as *verbal probabilities*, interpretation depends on the context. The phrase "likely to catch a cold" will be interpreted differently from "likely to become infected with HIV," for example.

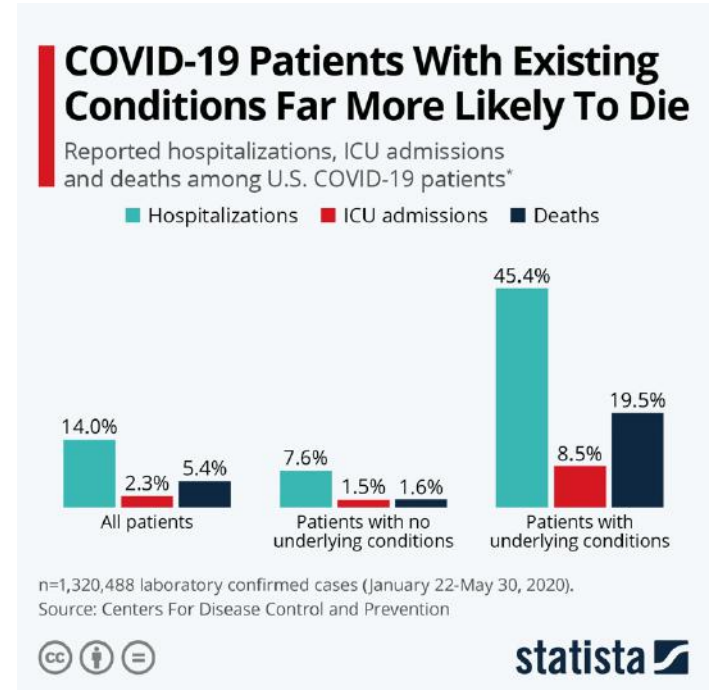
# EXAMPLE: RISK RELATED TO UNDERLYING CONDITIONS



**Older adults & people with underlying health conditions are at **higher risk** of developing severe forms of COVID-19**

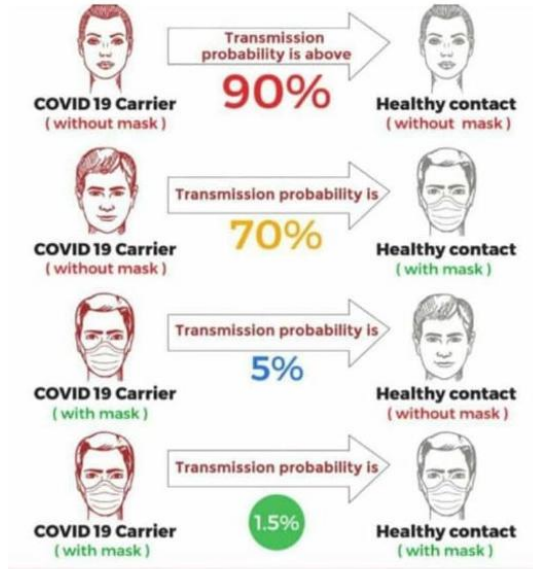
Protect yourself & stay healthy

World Health Organization #COVID19 #Coronavirus

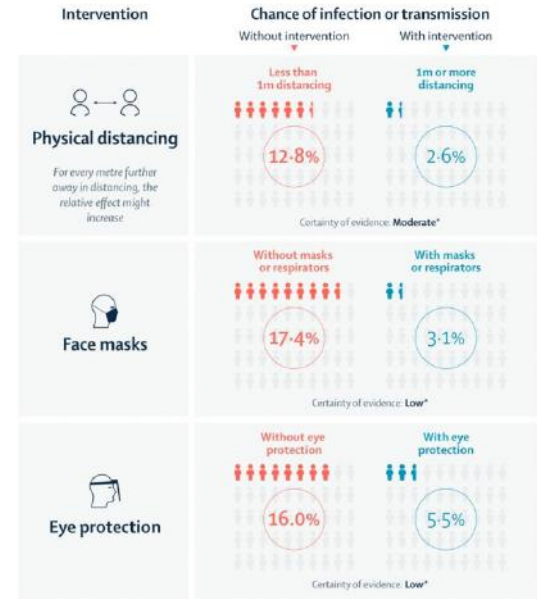


# EXAMPLE: EFFECTIVENESS OF MASKS

HOW EFFECTIVE ARE FACE MASKS?		
	Purpose	Effect
<b>Do-it-yourself mask</b> 	Protection of wearer and strangers	Exhalation and droplet ejection can be reduced. Spreads awareness of social distancing
<b>Medical mouth &amp; nose protection</b> 	Protection of strangers	Protects against wearer's droplet ejection
<b>Filtration half mask</b> 	Self protection	Protects the wearer from solid & liquid aerosols (nano-particles)



## What protects against COVID-19 infection or transmission?



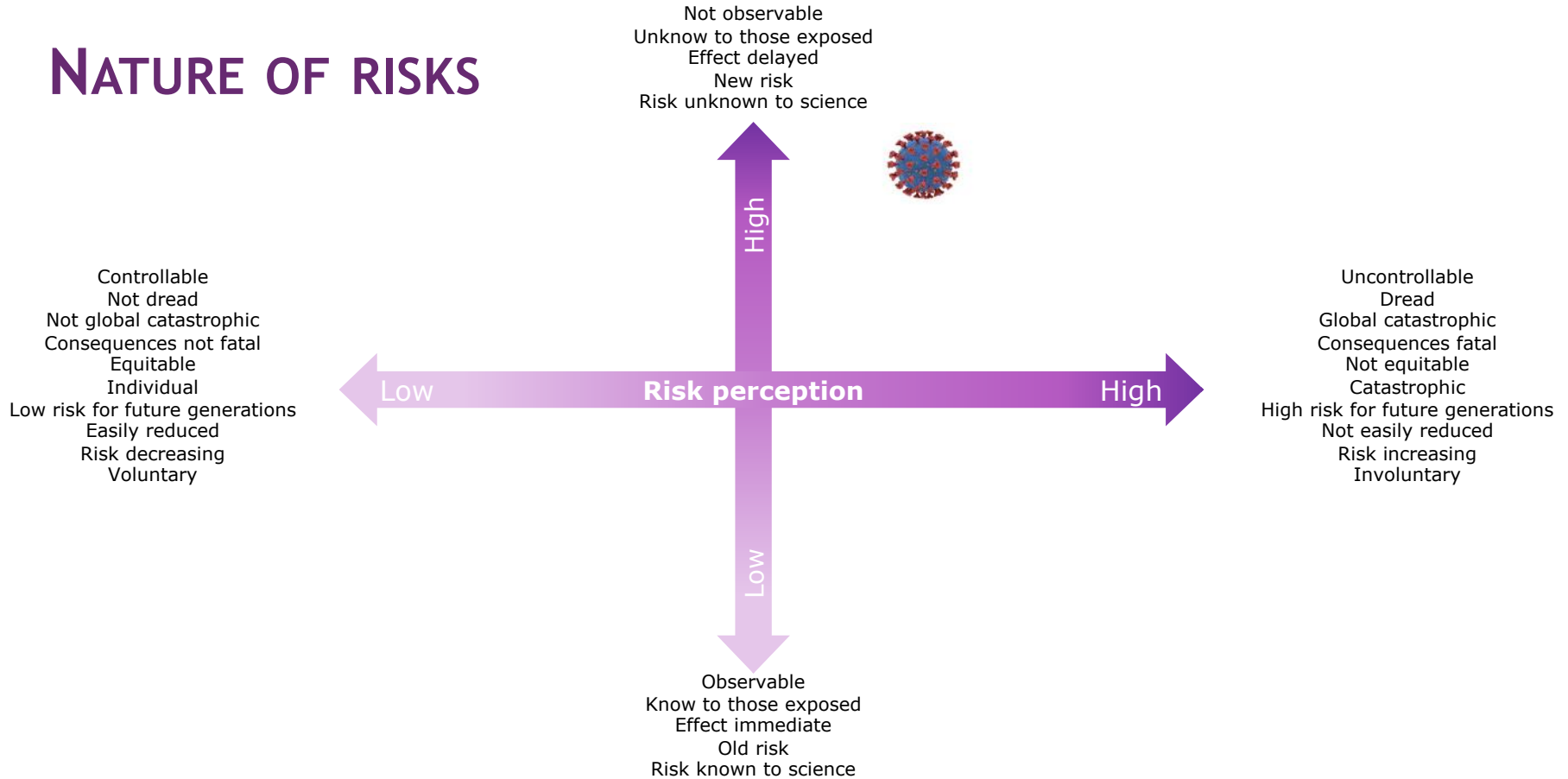
\*See the paper below for full explanations of certainty and why these categories are used. Moderate certainty: we are reasonably confident in the effect estimate; the true effect is probably close to the estimate, but it is possibly substantially different. Low certainty: our confidence in the effect estimate is limited; the true effect could be substantially different from the estimate of the effect.

## 2. NATURE OF RISKS

- Studies show that **voluntary, natural, and controllable** risks are generally **more accepted** than risks that are imposed, not within an individual's control, or due to human-made causes.
- Risks that are **familiar** are also usually more accepted than those that are unfamiliar or hypothetical
- **Observability** and **controllability** are the two dimensions that **characterize a hazard's "dreadfulness" and the degree to which it is understood.**



# NATURE OF RISKS



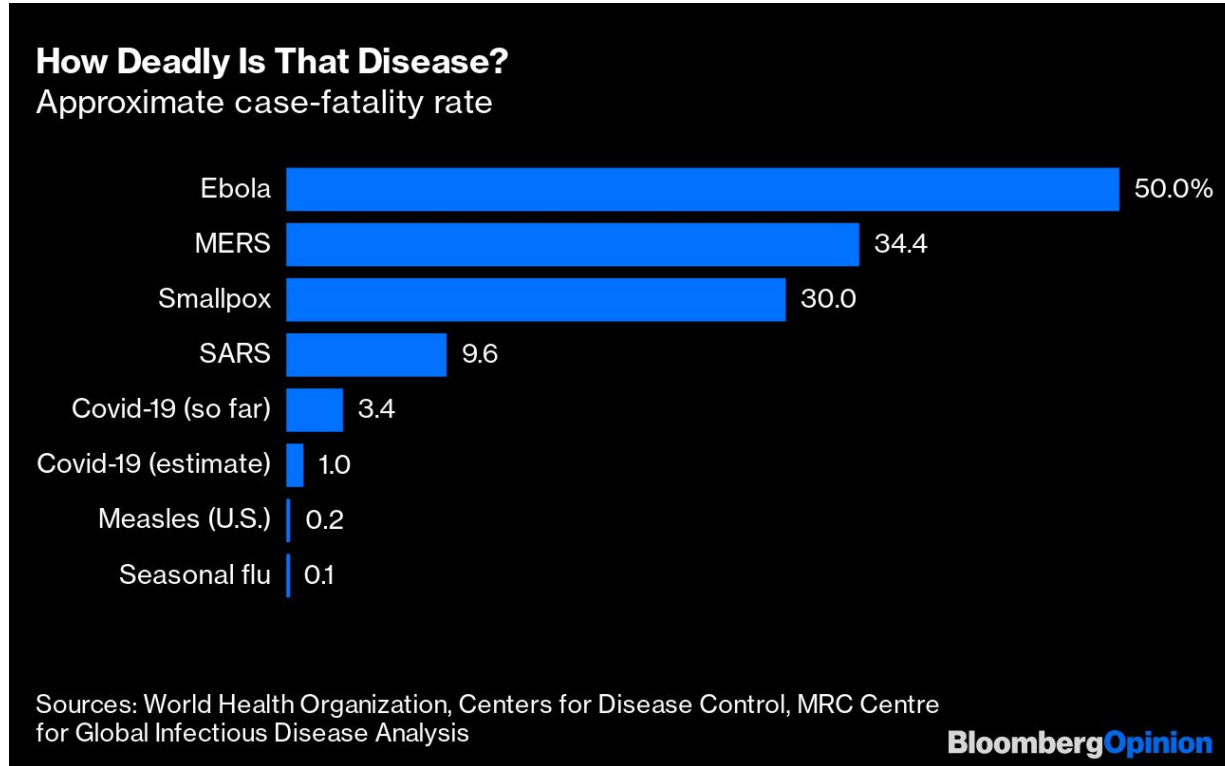
### 3. HEURISTICS AND BIASES

- People frequently **resort to powerful heuristic** (or cognitive shortcuts), that provide quick answers to probability questions, but might result in **biases in risk perception**.
- These common interpretive errors pose **tremendous challenges to institutions** who may be struggling to define the risks and present them in accessible terms for people from diverse backgrounds.

# ANCHORING BIAS

- **Lack of feel for absolute frequency** and a tendency to estimate frequencies for a new event on the basis of the frequencies presented for other events.
- Consequently, how and what probability estimates of risk are presented and in what order they are presented may affect how risks are perceived because of anchoring effects.

# EXAMPLE



# COMPRESSION BIAS

- **Overestimation of small frequency risks** and the **underestimation of large frequency risks**
- If this is applied to COVID-19, people would behave as if the risk of rare complications (e.g., deaths in healthy young individuals) were higher than reported, while underestimating more frequent risks (e.g., getting sick after talking to an infected patient for a long time without a mask).

# AVAILABILITY BIAS

- Events that are **easily remembered or imagined are more accessible or "available" to people**, so that their frequencies are overestimated.
- If a particular risk has recently or often been reported in the popular press, people may well overestimate its frequency. Drama, symbolism and identifiable victims, particularly children or celebrities also make a risk more memorable.

# EXAMPLE

Jackson Sun.

## Parents: 6-year-old Jackson girl dies after testing positive for COVID-19

Brandon Shields | Jackson Sun  
Published 1:06 PM EDT Aug 5, 2020

A Madison County family is mourning the sudden death of their child.

The parents of Gigi Morse, 6, said she died from COVID-19, which would make her the first childhood death in Madison County related to the coronavirus pandemic.

Jackson-Madison County Health Department Director Kim Tedford confirmed the death in their press briefing Wednesday morning.

Gigi had been sick in recent days, and she had a doctor's appointment Tuesday.

# OMISSION BIAS

- Tendency to believe that an error of omission is less serious than an error of commission.
- That is, people tend to be **more averse to a risk incurred by taking an action than one incurred by taking no action.**
- For example, they could be more willing to accept death from a disease than the risk from being vaccinated against the disease itself (even if this risk is far smaller)



AND MANY OTHERS...

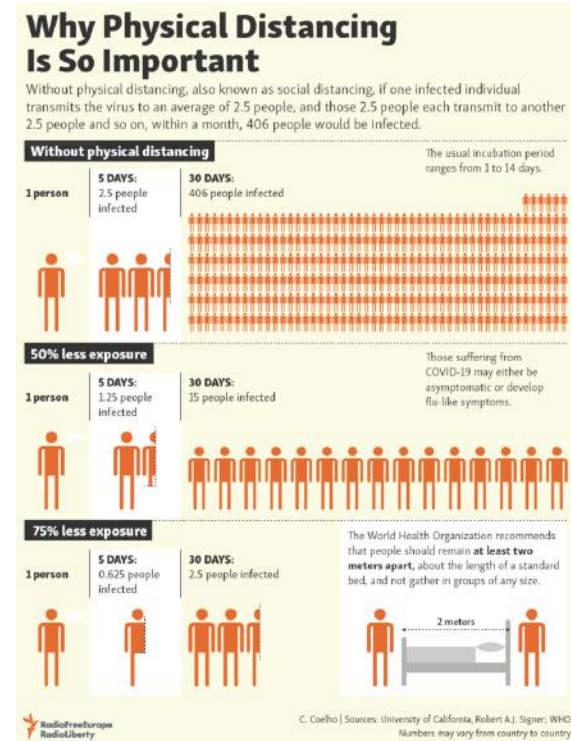
# TAKE HOME MESSAGE/1

- Institutional communication during public health emergencies has the main goal of persuading citizens to perform certain preventive behaviors (e.g., wearing masks)
- **Risk perception** (and not actual risk) is a **main determinant of behavior**
- Risk perception can be distorted by the nature of risk itself, by difficulties in the visualization of risks, and by heuristics and biases

# TAKE HOME MESSAGE/2

When communicating about risks, institutions should:

- Take into account the distortions in risk perception and address them
- Communicate in a way that limits the possibilities for overestimation or underestimation of the actual threat



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