



# Global Risk Perceptions

## Q1 2020



DEEP • LEARNING  
TACTIX RISK COMMUNICATIONS

## Preface

Coronavirus is vividly demonstrating the frightening speed with which risk perceptions can change. It is also a stark reminder that concern is zero sum.

Every person is limited in the number of things they can be concerned about. Be it global pandemics, their own personal finances, or the safety of chemicals. When concern about one goes up, concern towards something else must go down. As we all follow the wild fluctuations of the stock market these next few weeks, we need to ask what is happening just below the surface.

Most critical is that risk perception towards vaccines has steeply declined since the outbreak of Coronavirus. Why? Because the greater people's belief in a product's benefit, the less they believe the product causes harm. Whether this shift is temporary or lasting will depend on how vaccines are positioned in the coming weeks and months.

In a period dominated by Coronavirus, what public concerns still cut through? Two long-lasting issues – fluoride and plastic pollution – have maintained heightened levels of public concern. We welcome guest commentaries by Dr. Carol Burns and Gatlin Smeijers, experts in the fields of scientific and legal risks respectively, to unpack these issues of fluoride and plastics.



Paul S Hillier  
Co-Lead,  
Risk Communications Practice

## Global Allocation of Risk Perception: Sept 2019 to Feb 2020

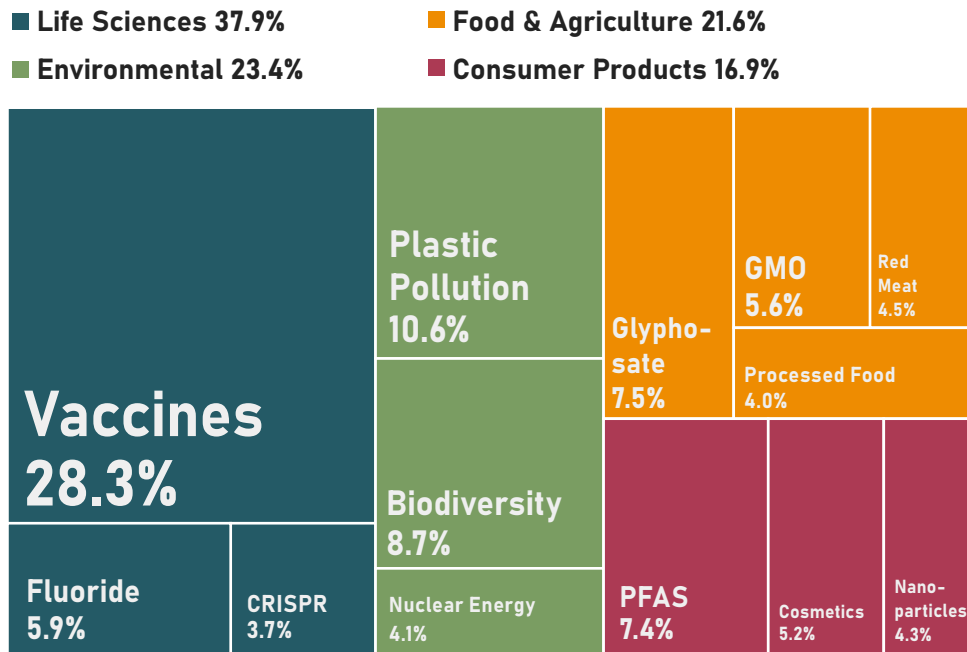


Figure 1. When a person's concern about one topic goes up, concern towards another topic will go down. We selected 13 leading risks for you to benchmark against as you operate in this zero-sum environment.

# Methodology

## Using Artificial Intelligence

With over two decades managing product defense campaigns, we understand what drives people to feel outrage, fear, or uncertainty towards technologies.

TACTIX' Risk Indices are measured using a proprietary sentiment analysis algorithm. We built the algorithm specifically to analyze controversial products and practices.

If you are looking for historical data, weekly breakdowns, deeper analysis, or for another issue to be added to the tracker, reach out to us at [paul.hillier@tactix.ca](mailto:paul.hillier@tactix.ca).

## Proprietary Risk Indices

**Severity Index:** measures the percentage for public conversation that is registering as highly concerned.

**Personalization Index:** measures the percentage of public conversation that is associating the concern with a family member.

## Measure Behaviors, not Attitudes

Why do we not poll people like many other risk reports do? Because polling asks people what they think they are concerned about.

**Problem one:** people often do not know what they are concerned about.

**Problem two:** they are unable to answer why they are concerned about something.

Ultimately, we want to anticipate the public's behaviors. And so, it only makes sense, to build risk indices based on actions – the comments people post on social media, their mobilization, what they search and what they read. Behaviors drive attitudes, not the other way around. So we measure behaviors.

**Mobilization Index:** measures the percentage of public conversation that is calling for a ban, boycott, or political change.

**Nature of Concern:** measures the percentage of concern that is concentrated on environmental impacts compared against concern that is concentrated on human health impacts.

## TACTIX Risk Score (Monthly Variability)

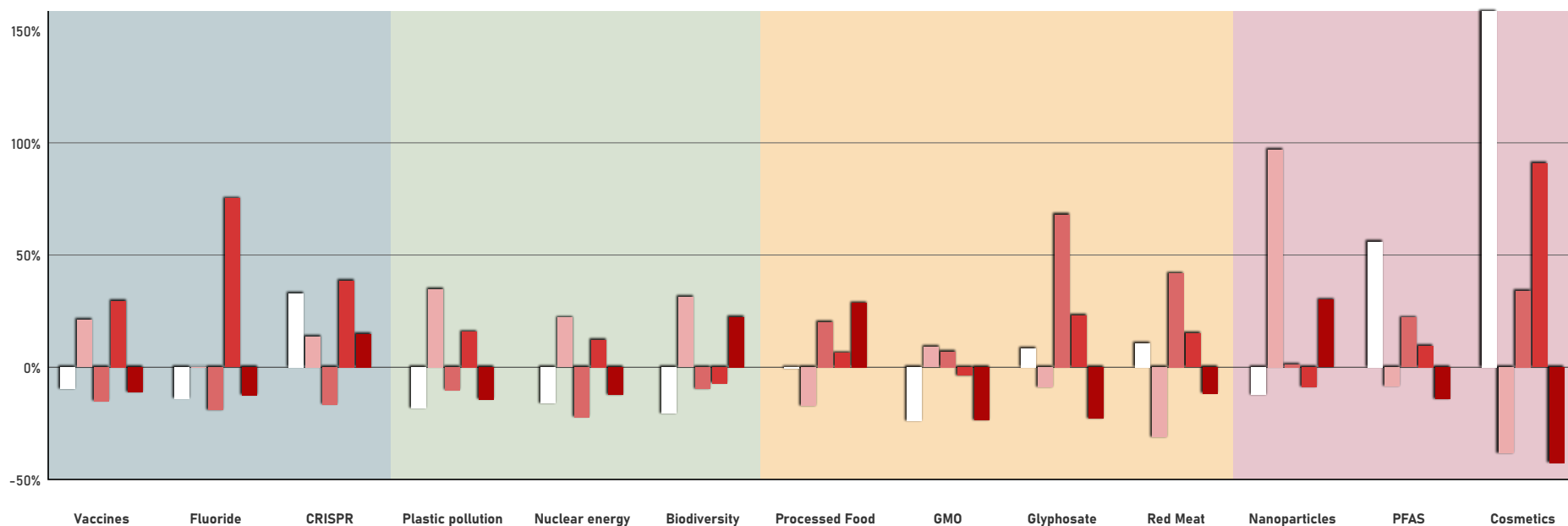
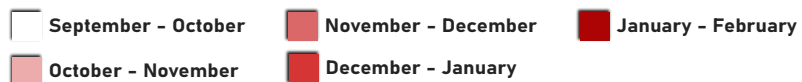


Figure 2. Risk perception of chemicals associated with consumer products tend to change dramatically on a month-to-month basis. Consumer products are more susceptible to the swings between risks and benefits, leading to greater variance each month compared to other categories.

### Increase/Decrease from:



## Persistence of Risk Perceptions

### Guest Commentary

By Dr. Carol Burns, Burns Epidemiology Consulting, LLC

Perception of risk sadly does not seem to be based on facts. Persistent concerns around fluoride are just one example.

Fluorine is one of the Earth's elements. While conspiracy theories abound, fluoride exists naturally. Clearly, we cannot eliminate an element.

Because fluoride is present in our water, air, and food, accounting for all the sources of fluoride is difficult for study investigators. As a result, there are both weak and strong studies. These results are often conflicting. Citing a single study, while technically truthful, does not reflect the full scope of knowledge. Similarly, basing a conclusion on the weak studies is not good scientific practice. Unfortunately, this is hard for the public to differentiate during a quick Google search. Do not get me started on Twitter feeds!

Nonetheless, we can help people ask better questions. For example, how much fluoride is estimated to cause a problem? How does this compare to my water supply? Did the studies even measure and evaluate different ranges of exposure? Is the concern limited to a very few, or to many?

At the very least, can we not encourage people to include “controversy” into their search terms to get some different perspectives and information?

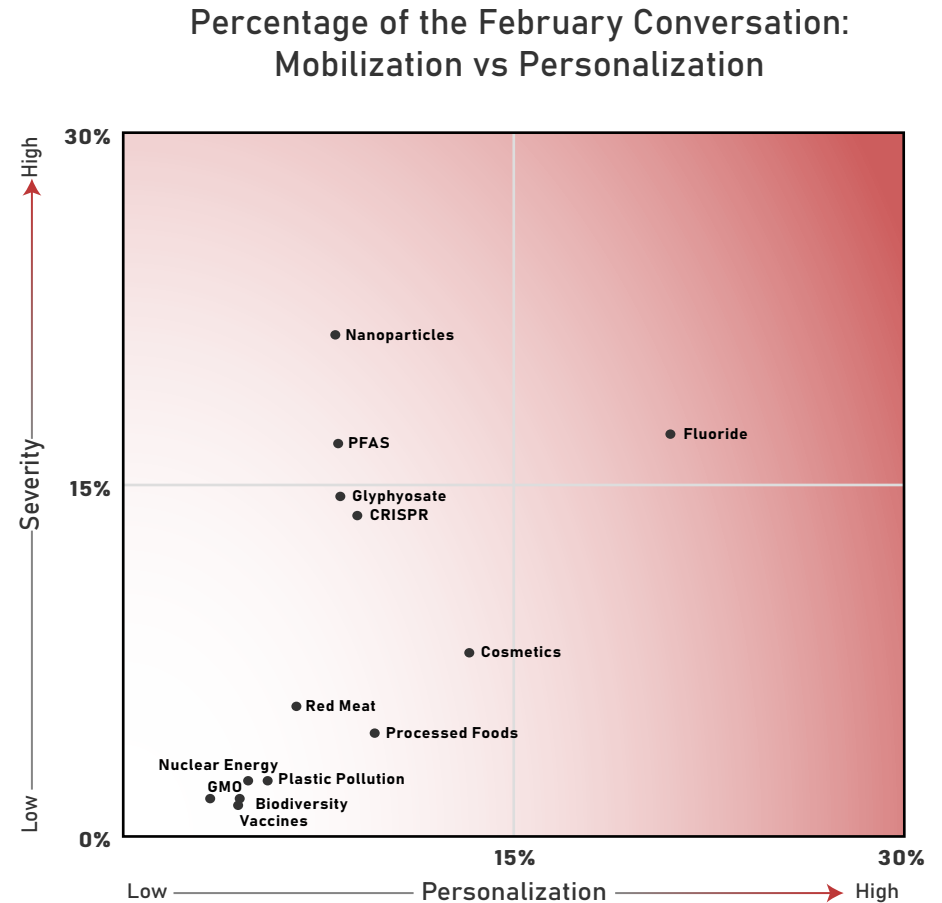


Figure 3. Risk perceptions can endure for a long time. Once risk perceptions take hold, as they have for fluoride, they can last for years, neutralizing any perceived benefit.

The implication for those managing new technologies: defend them upfront, because once risk perceptions set in, it becomes exponentially more difficult to change them

## Perceived Benefit Reduces Perceived Risk

Risk and benefit go together like arsenic and old lace. (A Frank Capra movie, for those of you who do not do black-and-white.) But the nature of their relationship is a curious thing.

With most things, the relationship is highly variable. Some things are low-risk and high-benefit (regular walks). Others are high-risk and low-benefit (a baggie of crystal meth), low-risk and low-benefit (binge watching Netflix), or high-risk and high-benefit (a middle-aged dude entering his first Iron Man competition).

When money is involved, however, the relationship is a little more predictable, as risk and benefit tend to rise and fall together. You can buy low-risk and low-benefit Treasury bonds or bet the farm on high-risk and high-benefit junk bonds but if someone promises a low-risk and high-benefit investment, his name is Ponzi or Madoff.

But when it comes to risk perception, the relationship between risk and benefit is not uncorrelated. And it isn't correlated. It tends to be inversely correlated.

If one is high, the other is low. And vice versa. Which is weird. Unless you understand psychology. And specifically, the role of affect — which is what psychologists call emotion.



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TACTIX Global Risk Communications

Among the mechanisms the brain uses to judge risks, one of the most important is the “affect heuristic.” Like all psychological heuristics, it is simple: How something makes you feel tells you how risky it is.

This is the source of the inverse correlation: Good feelings drive risk perception down (good things are not bad) but they raise benefit perception (good things are good!). Bad feelings do the reverse.

None of this is conscious analysis. It is automatic, an intuition delivered instantly and effortlessly. We do not even know that emotion played a role in the formation of the judgment. All we know is that it feels true.

The implications for risk perception and communications are many and profound. For one, it means communications that boost benefit perception are likely to lower risk perception even if the latter is not mentioned. And vice versa.

It also means risk perception is inextricably connected to brand — because affect is the lifeblood of both. Brand and risk perception are conjoined twins. Physicians must treat them accordingly.

## Percentage of Monthly Conversation with PERSONAL concern

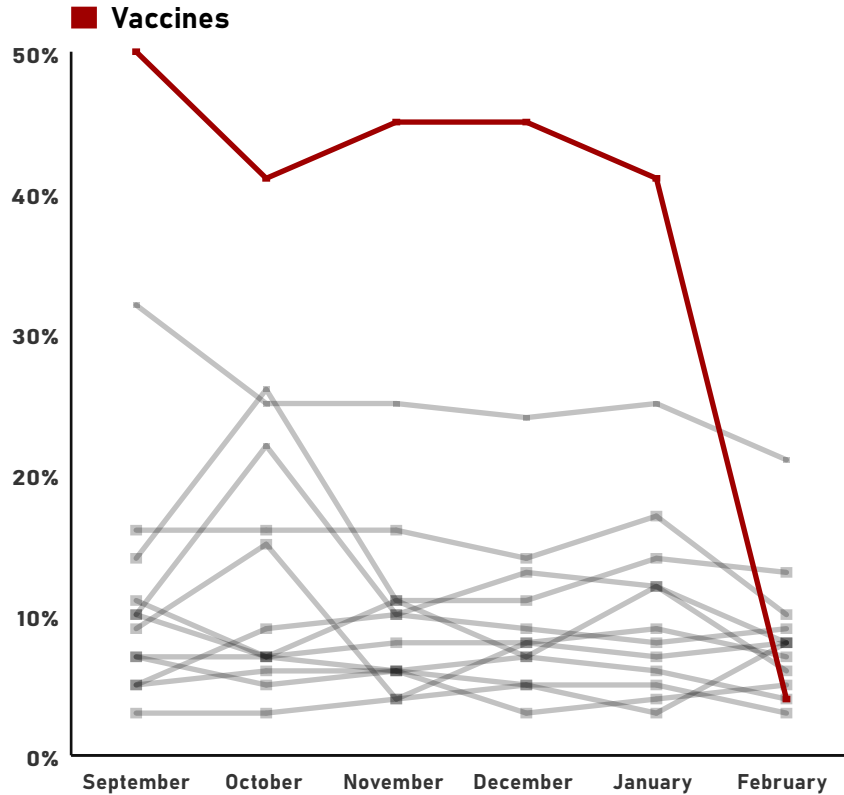


Figure 4. A key driver of risk perception is how personally people feel the risk. For vaccines, that is falling.

When people are worried about risks to their children, parents, or loved ones, they are experiencing a very different kind of risk perception.

As the Coronavirus spreads, the perceived risk of vaccines becomes more distant.

## Percentage of Monthly Conversation with SEVERE concern

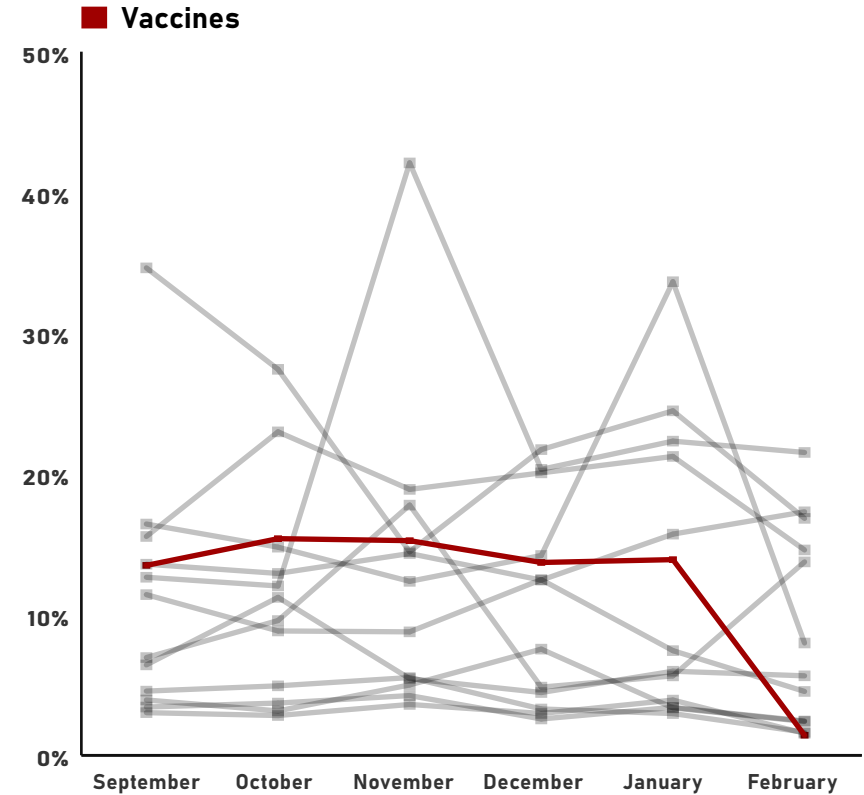


Figure 5. Risk perceptions towards vaccines have steeply decreased as Coronavirus spreads.

By analyzing social media behaviors, news media, and global search engine trends, we are tracking a significant decline in the severity of public concern towards vaccines. This decrease in risk perception is inversely correlated to the increase in perceived benefits of vaccines.

# The Staying Power of Plastics

## Guest Commentary

By Gatlin Smeijers, Willms & Shier Environmental Lawyers

The TACTIX Global Risk Score for plastics is reflective of the evolving legal risks across the world. This past month, Canada became the latest jurisdiction to propose strong movement against plastics.

The Draft Science Assessment of Plastic Pollution was prepared jointly by Departments of Health and Environment, and concluded that action is needed to reduce both macroplastics (>5mm) and microplastics (<5mm) entering the environment.

The report also recommends several areas requiring additional research, including the development of standardized methods for evaluating the effects of these materials.

In June 2019 Canada announced its intention to ban single use plastics. The announcement followed the EU Parliament passing the Single-Use Plastics Directive in March 2019, which directs member countries to ban several categories of single use plastics by 2021.

If the government moves to add macroplastics as a “toxic substance” to Schedule 1 of CEPA, companies should be prepared to raise questions regarding sufficiency of the science assessment and whether lifecycle management is a more appropriate mechanism for risk management.

## Percentage of Monthly Conversation that is MOBILIZING

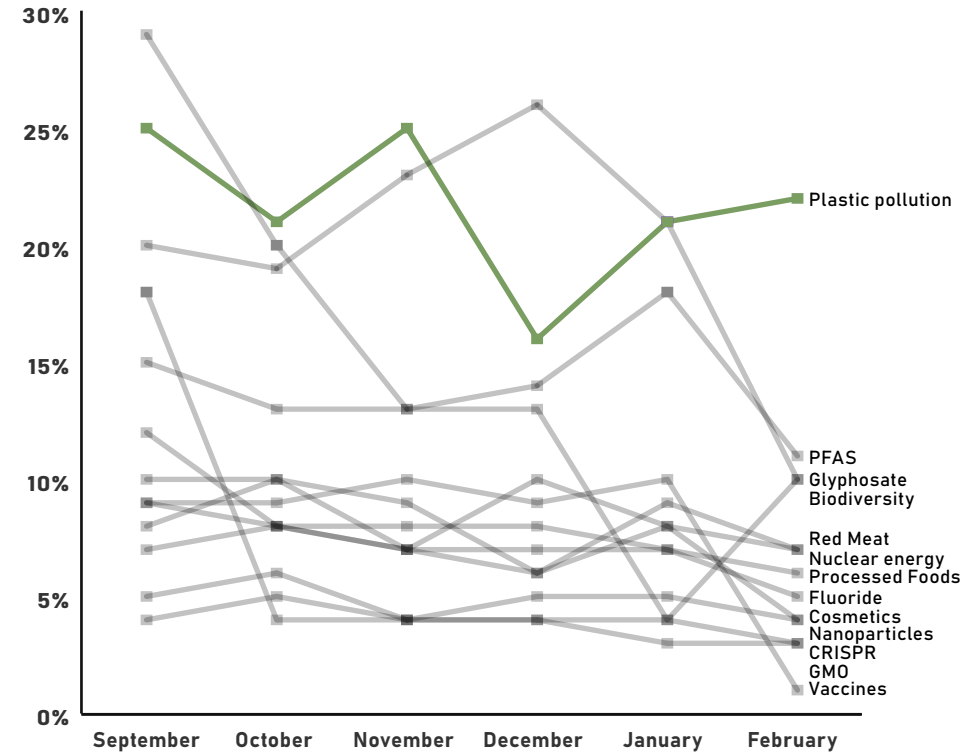


Figure 6. When the public mobilizes against an entire category – as with plastics – companies have a narrow window to explain how their products are different.

To continue the plastics example, we need to measure language and behaviors to determine whether people would respond based on differences in: the kinds of plastics, the forms of use, the available post-use-streams, or a host of other potential differences. In short, what difference really matters to people? That question sounds simple, but is tremendously difficult.

## Using Artificial Intelligence to Track Mobilization

When the public is mobilizing to ban, boycott, or demand further regulation, the business risk is much higher than when people are simply expressing concern.

So too, the language people use is different when they are ready to mobilize compared to when they are concerned. Unfortunately, it is not as simple as searching for tweets that mention “Ban + Product Name”. There are patterns, but they are not that easy to see.

Enter artificial intelligence. Just as every other corporate division already uses AI (from fraud prevention to sales optimization to R&D), AI in risk communications is about finding patterns.

Let us use an example. You can uncover that the “eat organic” movement owes much of its support in certain areas to people believing that eating “organic” means eating “local”. While these people may not like pesticides, they are not intentionally mobilizing against perceived health effects of pesticides – they are mobilizing around the issue of environmental footprints.

Not long ago, when you went on vacation, you had to call your credit card company to let them know. Now, they use AI to track, on a minute-to-minute basis, unusual spending patterns. The same method is used to track mobilization against your products. In contrast, traditional social listening is like sitting and waiting for people to call.

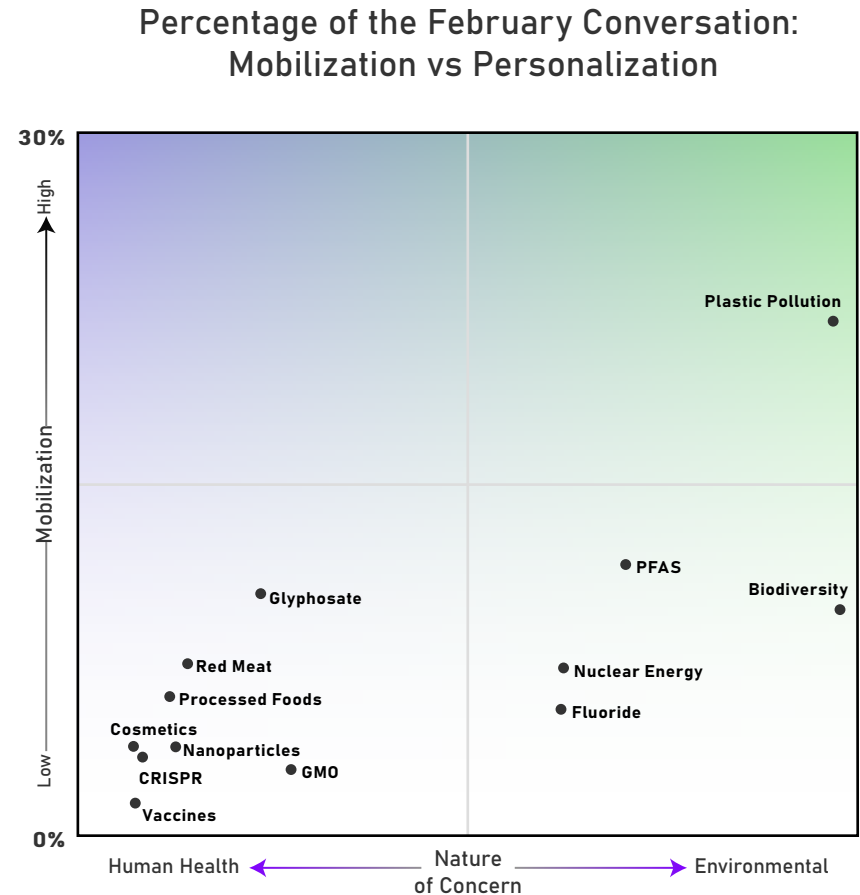


Figure 7. Mobilization is an important KPI for senior executives to track over time because of the business risk it presents.

If a communications campaign is unable to reduce mobilization, one reason may be it is aiming to mitigate the wrong concern (talking too much about the environment when the real concern is human health, or vice versa). As the findings above show, many risk perceptions include a balance of both.

## Contributors



**Carol Burns** is a renowned epidemiologist and expert in health services. For 21 years Carol served as an Epidemiologist in the Health Services organization of The Dow Chemical Company.



**Gatlin Smeijers** advises and represents a wide range of clients in the areas of environmental law, chemicals regulation, and regulated products. Willms & Shier has consistently been recognized as a blue-chip environmental law firm.



**Dan Gardner** is a New York Times bestselling author of three books about the psychology of risk and decision-making, including *The Science of Fear*. Prior to joining TACTIX, Dan was an award-winning journalist.

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