Commentary

Don't Look Up: Science Communication Revisited

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Abstract

In my workshops, Storytelling and Storyboarding Science, I teach scientists how to use the narrative techniques and strategies employed in movies to produce persuasive presentations and publications. Although the movie *Don't Look Up* was initially intended as an allegory about climate change and the idea that decision makers are not listening to scientists, this movie does in fact highlight important issues regarding how scientists communicate science to the wider public. In this article, I discuss how this movie illustrates the challenges that I teach my students to cope with in science communication.

Keywords

science communication, wider public, film, storytelling, climate change, education

Since 2015, I have been teaching Storytelling and Storyboarding Science for mainly PhD students at several Swiss, German, and Italian universities and research centers. The premise of these workshops is that scientists can borrow communication strategies and techniques from filmmakers and apply them to produce persuasive presentations and publications, especially for the general public (Angelone et al., 2020; Olson, 2015). These 1- to 4-day workshops are usually composed of two parts: a theoretical part looking

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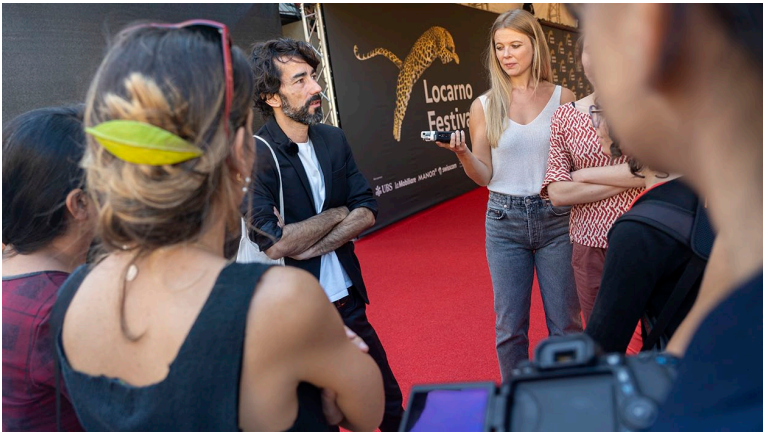

Figure 1. Photograph of the course storytelling and storyboarding science at Locarno Film Festival.
Note. Scientists interviewing one of the filmmakers, Eloy Enciso, after the screening of his movie. The course was organized by the Swiss Academy of Sciences and the University of Basel. Participants came from 12 Swiss universities and research institutes.

at storytelling and storyboarding science, and a practical part including attending film festivals like the Locarno Film Festival, Zurich Film Festival, Visions du Réel International Film Festival, and Global Science Film Festival (e.g., ETH Zurich, 2021; Life Science Zurich et al., 2021; Rachel Carson Center, 2021). At these festivals, participants have the opportunity to watch movies, meet filmmakers, and discuss their storytelling techniques directly with them (Figure 1). Before the workshops, participants submit "tasks" including their biographies, summaries of their research, and abstracts of any unpublished papers. During the workshops, participants improve their submitted tasks based on the theory they have learnt during the workshop, the films they watch, and the discussions with the filmmakers. At the end of the workshops, participants make presentations of their tasks "before-and-after" attending the workshop, and receive feedback from the other participants.

After the workshops, I receive from time to time messages from ex-students, especially when a movie reminds them of something that I have taught them. December 2021 was somehow different as, unusually, I received many messages regarding a new movie, *Don't Look Up* (McKay, 2021). The messages that I received from my ex-students had expressions like "It is all in the movie. All what you teach us is there." Indeed, it is all there.

In the movie *Don't Look Up*, astronomy PhD candidate Kate Dibiasky (Jennifer Lawrence) at Michigan State University discovers a new comet. While working with her supervisor, Dr. Randall Mindy (Leonardo DiCaprio), they realize that the comet is a planet-killer. It is heading toward Earth and in a little over 6 months it will cause mass extinction. During the rest of the movie, Dibiasky and Mindy are seen trying to convince those in charge to do something about the comet.

NASA confirms the findings and the head of the Planetary Defense Coordination Office helps Dibiasky and Mindy present their findings to the White House, but Dibiasky and Mindy are met with indifference from the President and her son and Chief of Staff. As a result, Dibiasky and Mindy decide on an alternative plan to leak the news to the media; however, the hosts at The New York Herald treat the topic very frivolously.

To divert attention from a sex scandal with a Supreme Court nominee, the President confirms the threat of the comet and announces a mission to strike and divert the comet using nuclear weapons. The project is abruptly aborted when the billionaire CEO of a BASH, tech company, reveals that the comet contains trillions of dollars worth of rare-earth elements. BASH proposes the commercial exploitation of the comet by fragmenting it and then recovering parts of it from the ocean. The White House gives the go ahead to this project, even though it is not scientifically peer-reviewed.

The world is divided between those who criticize the alarmism and believe that jobs can be created by mining the remains of the comet, and those who doubt that the comet even exists.

Adam McKay, the director of the movie, envisioned the story line as an allegory of climate change and the fact that decision makers are not listening to scientists. Yet, for me, it is not only about decision makers ignoring the message of the scientists, for this movie also highlights other important issues such as how scientists communicate science to a wider public. Indeed, the movie emphasizes the fact that public skepticism or hostility to science should not be attributed simply to a lack of understanding resulting from a want of information, the so-called "deficit model" (Simis et al., 2016). Hence, it follows that public opinion will not change merely by providing people with more reliable and accurate information. Not by chance did the movie director decide to include in the opening scene a Sagan figurine placed next to Dibiasky's computer. Sagan was an astronomer, planetary scientist, cosmologist, astrophysicist, and astrobiologist but, above all, he was an upholder of scientific credibility and communication.

From my experience in my Storytelling and Storyboarding Science workshops, the main challenges for my students in their attempts to switch from "science communication to peer scientists" to "science communication to a

wider public" are: "WHAT THEY SAY," "WHAT THEY MEAN," and "THEIR FOCUS."

What My Students Say

The style that scientists use to communicate science to peer scientists is mostly objective, complex, and full of technical jargon, which is difficult for the general public to connect to—even if it is in the same language.

In *Don't Look Up*, NASA confirms the findings of Dibiasky and Mindy and the head of the Planetary Defense Coordination Office, Dr. Teddy Oglethorpe (Rob Morgan), accompanies Dibiasky and Mindy to the White House to present their findings. But in the White House scene, Mindy uses technical language to explain their finding to the President Janie Orlean (Meryl Streep) and her son and Chief of Staff, Jason Orlean (Jonah Hill). The explanations of Mindy are met with indifference.

> **Mindy:** A comet 5–10 kilometres across, that we estimate came from the Oort cloud, the outer part of the solar system. And uh, using Gauss' method of orbital determination and the average astrometric uncertainty of 0.04 arcseconds . . .

The reactions from President Orlean and her son and chief of staff Jason are:

> **President Orlean:** Whoah, whoah. What the hell?
>
> **Jason:** I am so bored. Just tell us what it is.
>
> **President Orlean:** Knock that shit off.
>
> **Jason:** Seriously, stop.

What My Students Mean

Here, the key element is the context of scientists' words. Sometimes, one word—for instance, the word "certainty"—has different meanings for peer scientists and for the wider public. "Certainty" for scientists implies detailed calculations of the likelihood that a finding is real. Scientists use "certainty" to estimate the likelihood of their results. It is as if they were saying: "we have done our job with the utmost care" or "you can trust us." To some of the wider public, however, "certainty" provides a reason to distrust the scientists. It sounds as "they are not sure" (Dunwoody, 1999).

In the White House meeting scene of the movie *Don't Look Up*:

President Orlean: So how certain is this?

Mindy: There is basically 100% certainty of impact.

President Orlean: Please don't say 100%.

Aide #2: Can we just call it a potentially significant event.

Dibiasky: But it's not "potentially" going to happen. It is going to happen.

Mindy: Exactly, 99.78 percent to be exact.

Jason: Oh, great! So it's not 100%.

Dr. Oglethorpe: Scientists never like to say 100%.

President Orlean: Call it 70% and let's move on.

The Focus of My Students

The focus refers to the priorities that scientists give to the different parts of their work when they have to explain it. Scientists like to speak about the "Method" when they are explaining their findings to other scientists. This is important as it enables other scientists to judge the accuracy and repeatability of the research. But, it is not a priority for the wider public, who are more interested in the "So what?," that is, the "Why should we care about your findings?" (Baron, 2010). Indeed, in the movie the instructions and the interest of President Orlean during the first meeting with Mindy and Dibiasky are clearly focused on the "So what?"

President Orlean: Okay, I heard there's something about an asteroid or a comet you don't like the looks of. Tell me about it and then tell me why you're telling me about it. You've got twenty minutes.

But the response of Mindy is more focused on the "Method."

Mindy: A comet 5–10 kilometres across, that we estimate came from the Oort cloud, the outer part of the solar system. And uh, using Gauss' method of orbital determination and the average astrometric uncertainty of 0.04 arcseconds . . .

I start all my workshops on storytelling by saying that you can't persuade people with pure information and that you can't convince people with pure

emotion; however, you can move people by telling stories. Stories deliver information with emotion (McKee, 1997).

You can't persuade people with pure information as Mindy did in the scene in the White House.

You can't persuade people with pure emotion: after the apathetic meeting with President Orlean, Dr. Oglethorpe urges Dibiasky and Mindy to leak the news to the media. But at the Daily Rip Studio, the hosts, Jack Bremmer (Tyler Perry) and Brie Evantee (Cate Blanchett), treat the topic frivolously. And so Dibiasky loses her self-control and rants about the threat, causing widespread online mockery.

> **Dibiasky:** Well maybe the destruction of the entire planet isn't supposed to be fun. Maybe it's supposed to be terrifying . . . and upsetting . . . and maybe we're supposed to stay up all night every night crying . . . when we're all 100% for sure going to f***ing die!

But you can persuade people by telling stories:

In the DC Train Station scene when Dibiasky and Mindy are heading to leak the news to the media, the final recommendation by Dr. Oglethorpe before the train doors close is:

> **Dr. Oglethorpe (to Mindy):** You're just telling a story! Keep it simple! And no math!

The movie highlights the idea that part of the solution for communicating science to a wider public is to provide researchers with "media training." Indeed, "media training" is mentioned three times in the movie, for example, in the conference room at the New York Herald when Dibiasky and Mindy meet the Chief Editor and one of the owners, Benjamin, played by Stephen Thorne. The statement by Mindy shocks Benjamin:

> **Mindy:** I'M SORRY! How is it criminal if we just tell people, like the public, what we saw? And tell them the truth.
>
> **Benjamin (re: Mindy):** Make sure this one gets some kind of media training before he hits the shows. He seems a step slow.

And, of course, the reaction of Mindy is:

> **Mindy:** What does that mean I need media training? What does tha-

Transversal programs in some universities are beginning—albeit humbly—to offer media training. Yet, generally speaking, media training still lies beyond the scope of teaching for academic scientists (Angelone, 2019) and a lot remains to be accomplished in this sense. The problem of science communication to the general public will not be solved just by media training since all the extraneous noise that our civilization generates still has to be overcome. Indeed, this is one of the main themes of this movie: how do you make people pay attention to reliable and important scientific knowledge when there is so much untrustworthy and trivial knowledge out there. Are we really more interested in the private life of our favorite celebrity than the protection of our planet? "The movie was never about Covid or climate change, although to some degree it is still about climate change, but that it was really all about how we have destroyed the means in which we talk to each other and communicate. . ." said Adam McKay in an interview with *Variety* (2021).

I'll finish this commentary with an optimistic vision of the future of science communication to the wider public. Indeed, the fact that universities and research centers are working with filmmakers to teach their scientists storytelling is a good sign, and the very existence of the movie *Don't Look Up* shows that we are moving in the right direction.

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Author Biography

Samer Angelone is a filmmaker and scientist. He teaches storytelling science and filmmaking at numerous universities, research institutes, and film festivals (e.g., Locarno Film Festival, Zurich Film Festival, and Visions du Réel Film Festival). Angelone is the founder of the Swiss Science Film Academy (www.sciencefilm.ch) and has directed several fiction and documentary films (www.vimeo.com/samerangelone). He sits on the jury at prestigious film festivals (e.g., Cinemambiente Film Festival, Planet in Focus, The World of Knowledge). Angelone holds two PhDs in biology and film studies.