

# Public-Friendly Open Science

Matteo Cantiello<sup>1</sup>

<sup>1</sup>Kavli Institute for Theoretical Physics

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## Previous "A "Modern Scientist" Manifesto"

In the 21st century science is growing more technical and complex, as we gaze further and further while standing on the shoulders of many generations of giants. The public has often a hard time understanding research and its relevance to society. One of the reasons for this is that scientists do not spend enough time communicating their findings outside their own scientific community. Obviously there are some exceptions, but **the rule is that scientists write content for scientists**. Academia is often perceived as an ivory tower, and when new findings are shared with the outside world, this is not done by scientists, but by the media or even the political class. The problem is that these external agents do not have the necessary background to digest and properly communicate this knowledge with the rest of society. They often misunderstand, over-hype and in some case even distort the results and views of the scientific community. **It's ironic and somewhat frightening that the discoveries and recommendations for which society invests substantial economic and human capital, are not directly disseminated by the people who really understand them.**

At the same time transparency and reproducibility are at stake in the increasingly complex world of research, which is still using old-fashioned tools when packaging and sharing content. This is not only a big problem for research itself, but can give science a bad name in front of the public opinion, which increasingly does not understand and trust the work of scientists. To the average tax-payer science is often cryptic, with most recently published papers behind a pay-wall and the majority of research virtually inscrutable. In this scenario it is hard for the public to access and capture the relevance of scientists' work. I strongly believe that a society that does not trust its scientists is set on a dangerous course.

**Action Items.** To improve the situation 21st century scientists need to:

1. Learn to efficiently share and communicate their research with the public at large.
2. Make their research more transparent and reproducible, so that it can be trusted and better understood by their peers and the public at large.

21st century scientists need to produce "**Public-Friendly Open Science**" (PFOS).

PFOS should be package in bundles containing papers that are reproducible, interactive and multilayered. **Papers** should contain all the information to reproduce the described research (including the main **code** and **data**). It should also allow the reader to interact with its content, for example through interactive figures. See [here](#) for a more detailed description of what the "Paper of the future" should look like.

The important point is that papers should also contain links to "supplementary" documents created for a larger audience. A good start is to include a **draft of a press release**, where the media can find the most relevant facts and a few quotes from the scientists, and a **quick research summary** for the layman, where the authors can tell the short story of their work to the general public.

Scientists

Media

Public

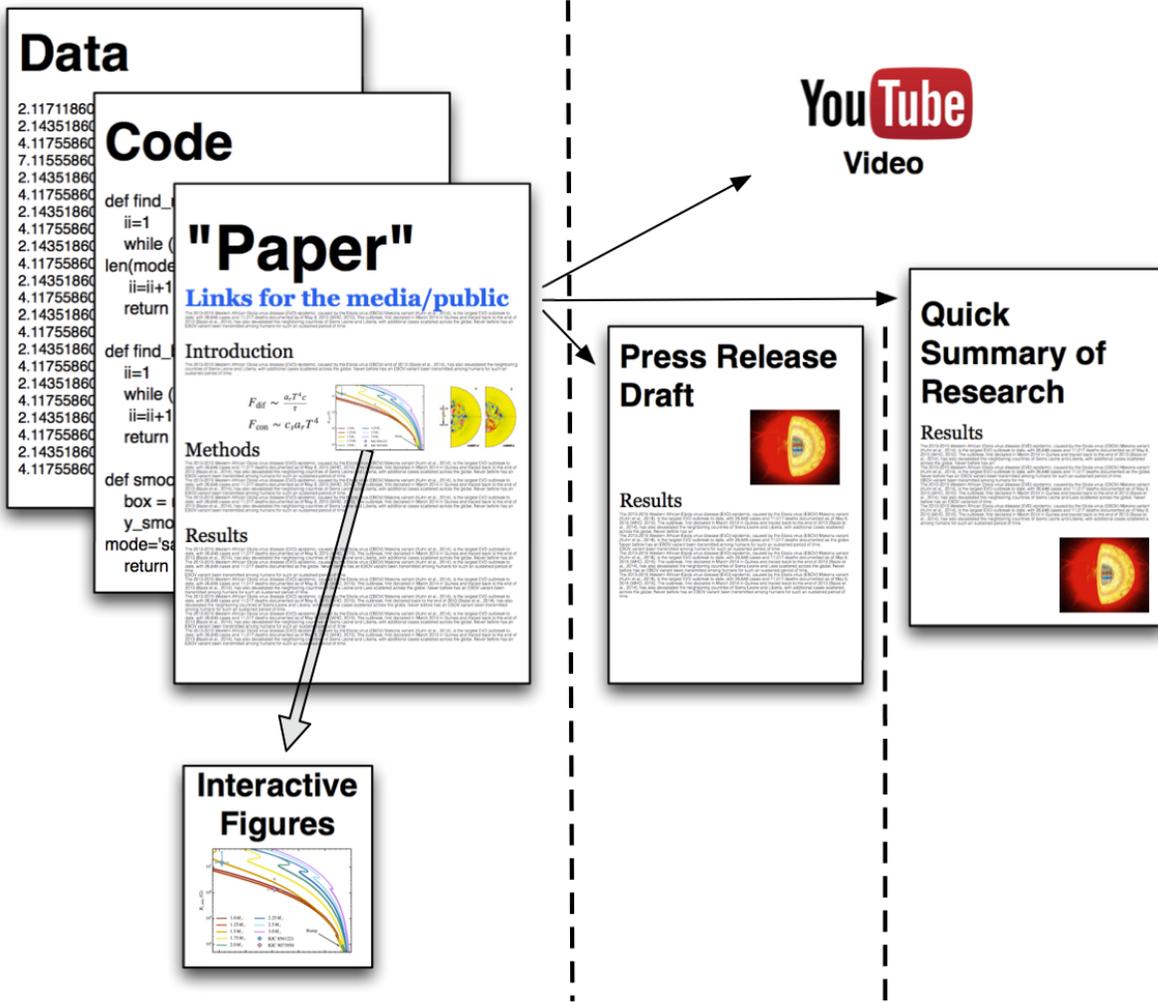


Figure 1: Scheme of a possible **Public-Friendly Open Science** bundle.

As discussed in the description of the paper of the future, **videos** are also useful, complementary ways to communicate the results of the research. For example astronomers at Ohio State, when they submit a paper to arxiv, they accompany it by a simple YouTube video that explains the basic idea (they call it "**Coffee Briefs**"). Together with a quick summary of research, these scientists also get their faces out: this way colleagues can identify them easily at conferences and the public can finally see that scientists are "normal" people, helping to make science more approachable.