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From rationalization to rationality: (In)sustainability of strategic narratives in science communication, ranging from climatic change to hydro-meteorological extremes

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Strategic narratives (persuasive use of story systems) in science communication have been gathering
increasing support, especially in the face of misunderstandings about high-impact climatic change and hydrometeorologic extremes.
The use of these narratives reveals, in line with linguistic research, that traditional scientific discourse
conception has become outdated. Should scientific discourse be centered on the description of discoveries?
Should the role of political discourse be to convince someone to act? Before answering these, it is necessary to
understand the crucial function that uncertainty plays in communication, along with its consequences in the
concepts of objectivity and truth. More importantly, understanding its role in scientific society and sustainability.
Unable to eliminate uncertainty altogether, science becomes an essential escort to recognize, manage
and communicate its pertinency. However, the most popular strategic narratives sideline uncertainty as a threat.
Denialists follow a similar approach, though they communicate uncertainty to discredit evidence. Comparatively,
in their latest Assessment Report, the IPCC characterized uncertainty whilst stating: “uncertainty about impacts
does not prevent immediate action”.
Scientific discourse outputs and social reality constructions influence each other. The moralization of
science communication reveals how XVII century revolutionary skepticism can now be perceived as a threat, and
facts expected from science can be deemed dogmatic truths and perceived as decrees through rationalism and as

an extension of Judeo-Christian philosophical influence. Equally important, uncertainty reinforces individual
freedom, while society grasps and recognizes certainty as security and demands it from institutions, accepting
degrees of authoritarianism to maintain a tolerable living condition.
From “Climate Emergency” to “Thousand-Year Flood”, public interest in climatic change and extremes
increases following high-impact events, yet trust in science plunges into a deep polarized divide among absolute
acceptance and outright rejection relative to the bold headlines conveyed not only in the media but also in some
scientific literature.
Political, religious and activist leaders strike one as prophets acting in the name of science. From
rationalism to rationality, scientific culture is pivotal to the analysis of complexity, objectivity, and uncertainty in
the definition of truth (absent from epistemological discussions for centuries). Humor/sarcasm, literature or
dialectic are examples of how to communicate entropy of scientific models, while reflecting about the role,
uncertainty, and mistake, retain in life.
“People want certainty, not knowledge”, said Bertrand Russel. However, neither science nor democracy
work like that, rather taking reality as having shades of grey instead of a reduced black-or-white dichotomy.
Science is not about giving just one single number to problems clearly not reducible to such, as that gives a false
sense of certainty and security in an entropic world where we cannot control everything.
In order to objectively analyze discourses in light of their uncertainty features, detecting whether they
contain polarized, absolutistic narrative patterns, we introduce a new process-consistent Artificial Intelligence
framework, building from Perdigão (2020, https://doi.org/10.46337/200930). The complementarity of our
approach relative to both social and information technologies is brought out, along with ways forward to reinforce
the fundamental role of uncertainty in scientific communication, and to strengthen public confidence in the
scientific endeavor.