Introduction

In contemporary societies, science is considered the primary source of legitimate knowledge. Consequently, the validity of any assertion on the functioning of nature and society requires endorsement by the scientific community (Barnes & Edge, 1982). Science built this authority through a framework of institutionalised norms, incentive and assessment systems, and communication networks (Merton, 1973). However, in recent years science and scientific facts have been operating in a context in which scientific institutions and scientists no longer have a monopoly on "truth" and the ability to speak on behalf of facts. Without this institutionally and socially sanctioned monopoly science must increasingly contend for prominence against numerous alternative interpretations of the world, which have emerged from diverse social and institutional contexts devoid of direct ties to scientific endeavours. The processes have grown more evident due to the widespread availability of Internet access, allowing lay persons to freely articulate and shape the ideas of other users in the new digital media. Hence, contemporary scientific organisations represent but one of the numerous entities that provide credible interpretations of nature and society while simultaneously exerting influence over the representation of science and the criteria for what constitutes science. The conflation of opinion and fact, coupled with the encroachment of relativism that equates truth with falsehood, posits that all matters in the public sphere are subjective, devoid of objective truth. This trend propels public discourse towards the perilous extremes of nihilism and populism, where the majority's desires dictate what is deemed correct.

The interaction between science and the public has been a subject of scientific investigation for numerous years. Revisiting history, 1985 appears to be a pivotal year for what would subsequently be termed the paradigm of public perception of science, particularly for its institutionalisation within scientific communication research (Gouyon, 2016). In 1985, the Royal Society published the Bodmer Report to analyse critically science communication in the UK. It assessed both the extent of scientific knowledge in British schools and the attitudes towards science. It identified a link between scientific literacy and attitudes and comprehension of science. Consequently, the initial scientific research on science communication emerged with the deficit model, wherein audiences are viewed as passive recipients of scientific information, shaping their attitudes towards scientific knowledge based on their education and scientific literacy. Substantial initiatives designed to enhance scientific literacy have been implemented, frequently linking scientific literacy concerns to national goals of technical progress and economic development (Lewenstein, 2003).

However, scholars have identified a series of difficulties with the deficit model. Most notably, many of the questions are asked without providing a context (Wynne, 1995). Learning theories have shown that people learn best when facts and theories have meaning in their personal lives. Due to these insights, three additional models emerged: a contextual model, a lay-expertise model, and a public participation model, which are trying to resolve the deficiencies of the initial model. Parallel to that two additional works appeared in the same year 1985, Shinn & Whitley's Expository Science (Shinn & Whitley, 1985) and Shapin & Schaffer's Leviathan and the Air Pump (Shapin & Schaffer, 1985), stressing that public is not merely passive, but actively contributes to the knowledge production. Significantly, this led to the emergence of laboratory studies in subsequent years, with the contributions of Michel Callon, Bruno Latour, John Law, and others. This process involved unpacking the inner work of scientific practices and became an integral part of the public realm. The process of transitioning from the laboratory to the outside world, known as "translation," is just as important as scientific discovery. The communication processes with the public and aligning humans and non-humans in a network of relationships and dependencies are essential for knowledge generation and moulding the social collective, as Latour argues.

Furthermore, Whitley (1985) presents a counterargument to the misconception of perceiving the audience in science communication as a single, indistinct, undistinguished, and inactive group (Whitley, 1985:4). Contrary to popular belief, there is not a single science, and hence, there is not a single public. The audiences are therefore actively pursuing their objectives in scientific knowledge utilisation. The primary issue appears to be the balance of power between non-scientists (laypersons) and scientists, rather than the level of scientific literacy.

Meanwhile, in the digital age, when radio and television lost their dominant place in the public sphere, these processes are becoming more complex and accelerating in speed, scale, and scope. With the rise of internet mediation, scientists must fight for a place under the spotlight on equal footing with the audience and many other actors who claim to be an authority in speaking on behalf of the facts. The information and data access and volumes are unprecedented. The active role of the audience is much more visible and traceable.

Online discussions and dialogues play a crucial role in shaping perceptions of science, acting as platforms where diverse opinions and narratives converge and compete. However, the variety and complexity of public discourse, particularly on social networks and internet forums, can seem random and fragmented. Analysing these interactions is essential for understanding how public attitudes toward science

are formed and influenced in the digital age. We claim it is possible, at least in part, to provide a sociological explanation and thereby reveal the underlying logic of these conflicting opinions and attitudes toward science.

In this current Special Issue of "Sociological Problems", we gathered contributions from various thematic fields and science directions. Starting with an interview on the developments of the PUS paradigm in the 1990s and research paper on recent challenges, we present new approaches to studying the images of sciences in the digital age. After that, there is a section with more transdisciplinary and practical contributions to the practice field of science communication and its future perspectives. Two sections with recent empirical cases conclude the issue - one dedicated to the science-religion interactions and the other to the social media and COVID-19 crisis.

We would like to express our gratitude to the Bulgarian National Science Fund for the support with the funding of the project "Images of Science in the Digital World: between Social Networks and Internet Media", with contract No КП 06-H55/6 of November 2021 and the base organisation Institute of Philosophy and Sociology at BAS.

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