

# Bridging different perspectives: Science Communication in the Mediatized Age: Challenges and Strategies (《媒介化时代的科学传播：挑战和策略》)

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**Abstract:** In the mediatized age, science communication has evolved into a critical bridge connecting technological innovation with societal understanding. This review examines Jian Rui's *Science Communication in the Mediatized Age: Challenges and Strategies* (2025), a work that systematically addresses both theoretical and practical dimensions of science communication within the Chinese context. The book constructs three theoretical bridges: between critical and strategic science communication; between science communication and mainstream communication theories; and between Western theoretical traditions and Chinese indigenous practices. Practically, it identifies core challenges facing Chinese science communication and proposes a "socialization pathway" mobilizing diverse actors—an approach aligned with recent national science policy. The book further demonstrates pedagogical value through systematically organized discussion questions and representative case studies. While engagement with critical perspectives remains limited, this limitation does not diminish the work's overall contribution to repositioning science communication within communication studies.

**Keywords:** Science communication; mediatization; strategic communication; communication theory; Chinese science policy; science popularization

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In this era when technology is reshaping the world with unprecedented depth and breadth, the importance of science communication has been elevated to a central and critical position. It no longer functions merely as a one-way transmission of popularized scientific knowledge but has evolved into a vital bridge connecting technological innovation with societal understanding, serving as a cornerstone for ensuring that technological development genuinely contributes to human well-being (Nisbet & Scheufele, 2009). Thus, how to advance responsible science communication, more effectively translate complex scientific principles into public discourse, and enhance public access to, comprehension of, and trust in science has become a significant scholarly imperative.

How can we better understand and practice science communication, especially in the current era of deep intelligent mediatization? In response to this question, Professor Jian Rui's newly published book, *Science Communication in the Mediatized Age: Challenges and Strategies* (《媒介化时代的科学传播：挑战和策略》), may offer some fresh insights. Professor Jian Rui earned his Ph.D. in Communication from the University at Buffalo, the State University of New York. He is currently a professor at the School of Journalism and Communication, South China University of Technology. His primary research areas include science communication and health communication.

This book is divided into four sections comprising eleven chapters, which examine the theoretical and practical developments in science communication from multiple perspectives. These include the historical evolution of science communication, the interplay between media environments and science communication, and dialogues between science communication and key communication theories—such as agenda-setting, the spiral of silence, cultivation theory, and the knowledge gap hypothesis. The work also explores how to leverage public risk perception, emotions, and social norms to advance effective science communication practices, and concludes by discussing the social pathways through which science communication operates. As the author notes in the preface, the central aim of the book is to “examine the challenges and strategies of science communication against the backdrop of the mediatized era”.

The perspectives, viewpoints, and empirical evidence in this book are too numerous to provide meaningful commentary. Based on my reading, I have identified the three most core characteristics of the comments as following.

### ***The link between strategic science communication and critical science communication***

The first significant characteristic of this book is that it is based on the perspective of strategic science communication, but also has some breakthroughs. Academic research on science communication is recognized as having two distinct origins, which further relates to the disciplinary perception of the field. According to Jia, it is widely acknowledged that the discipline of science communication primarily originated from fields such as the philosophy of science and the sociology of science (Jia, 2017). Consequently, it places particular emphasis on mediating the interactions and equal relationships between science and society, as well as between scientists and the public. As a result, it carries a pronounced critical dimension—for instance, critiquing the monopoly of discursive power held by science in society and challenging the lack of democratization in science communication (Yang, 2023). A key focus lies in the shift from Public Understanding of Science (PUS) to Public Engagement with Science (PES) (Davies & Horst, 2016). It should be noted, however, that this perspective is largely grounded in the trajectory of science communication development in the United Kingdom and continental Europe and is often referred to as the critical science communication approach.

In contrast, science communication in the United States has been more distinctly shaped by the influence of the Chicago School, placing greater emphasis on effects and empirical

research. Its core research question centers on how to employ more effective communication strategies—including content, channel, and audience segmentation strategies—to enhance the outcomes of science communication (Besley et al., 2019). Consequently, this approach is often termed strategic science communication (Besley & Dudo, 2022). Such a perspective also leads to a natural conceptual alignment with health communication in terms of underlying principles.

The author's academic background makes him naturally aligns more closely with the strategic science communication approach. Indeed, this book makes commendable contributions in this direction. For example, it examines how emotional appeal strategies can enhance the effectiveness of science communication narratives (Chapter 8); how influencing the public's perceived social norms can improve their acceptance, trust, and adoption of scientific information (Chapter 9); and how leveraging patterns of public media exposure can reduce psychological resistance to scientific messages (Chapter 6). Particularly in Chapter 10, drawing on social marketing theory, the author synthesizes a framework for the holistic planning and evaluation of science communication initiatives, and for translating research findings into actionable strategies. Together, these chapters offer rich, robust, and multi-faceted responses to the central question of strategic science communication: how to improve the effectiveness of science communication.

However, the author does not confine the discussion to strategic science communication. The book also engages with perspectives on critical science communication. For instance, the opening chapter directly addresses the conceptual evolution from “science popularization” to “science communication”, introducing Karl Popper's “anti-authoritarian” philosophy to underpin the author's reflection on science and science popularization. It further examines the intellectual trajectory of science communication, tracing its shift from the “centralized broadcast model” of “traditional popularization” to the “deficit model” of “public understanding of science”, and finally toward “dialogic and participatory model”. Although this section receives kindly less extensive treatment compared to the discussion on strategic science communication, it nevertheless highlights the author's effort to bridge critical and strategic approaches to the field. Moreover, in later chapters focused on strategic communication, the author retains a critical lens—frequently invoking concepts such as “democracy”, “dialogue”, and “equality”. This integrative perspective stands out in a landscape where many works on science communication tend to emphasize one approach at the expense of the other.

### ***The link between science communication and mainstream communication theories***

The second significant characteristic of this book lies in its systematic effort to facilitate a substantive dialogue between science communication and mainstream communication theories. In reality, science communication has long remained peripheral to the dominant discourse of communication studies, particularly within the Chinese academic context. This marginality may be attributed, at least in part, to the disciplinary roots of science communication in China, which are often traced to the philosophy of science and the sociology of science rather than to communication studies as an endogenous disciplinary origin (Jia & Yan, 2017). Consequently, the theoretical frameworks traditionally employed in Chinese science communication research have been predominantly drawn from the sociology and philosophy of science—such as the sociology of scientific knowledge, actor–network theory, and Mertonian norms of science (Tian, 2007), while sustained engagement with canonical communication theories has remained comparatively underdeveloped. Although this situation has been kindly improved in recent years, this long-term intellectual orientation has not only engendered a certain disconnect between science communication and mainstream communication scholarship, but has also constrained the visibility and theoretical advancement of science communication research within the broader communication discipline.

This book represents a deliberate and substantive effort to address this gap. By situating science communication within the overarching conceptual terrain of mainstream communication studies, the author systematically engages with a range of foundational communication theories—including Agenda-Setting (Chapter 3), the Spiral of Silence (Chapter 4), Cultivation Theory (Chapter 4), Knowledge Gaps and the Digital Divide (Chapter 5), and the Theory of Uses and Gratifications (Chapter 6). These theoretical dialogues do more than provide alternative interpretive lenses for science communication; they also meaningfully extend the applicability of these classic theories in the digital age. For instance, in discussing the Theory of Uses and Gratifications, the author observes: “The educational intent embedded in science communication often structurally mismatches the goal-oriented nature of public media use... The public is not necessarily ‘searching’ for scientific information; rather, they more often ‘encounter’ such content as it is algorithmically pushed to them. This incidental and non-purposive mode of media consumption stands in considerable tension with the educational aspirations of science communication” (pp.86-87). This reflection not only enriches our understanding of uses and gratifications in algorithmically mediated environments, but also illuminates the practical constraints of applying this theory to science communication contexts. It invites researchers to ask not only what communication theory can do for science communication, but also what science communication can do for communication theory. Thus, it builds an important bridge for interaction between science communication and mainstream communication studies in the Chinese context.

Taken as a whole, the author’s endeavor provides a constructive intellectual bridge for integrating science communication with mainstream communication scholarship, particularly within the Chinese academic setting. This work may well serve as a pivotal breakthrough and scholarly impetus for repositioning science communication from the margins toward the core of communication studies.

### ***The link between science communication theories and domestic practice***

In addition to establishing theoretical dialogues among critical science communication-strategic science communication, and science communication-mainstream communication theories, this book also demonstrates a strong practical orientation by paying close attention to the current state of science communication, especially in China. This practical focus is particularly evident in the Fourth Section of the book, where the author systematically examines the realities and challenges confronting Chinese science communication practice. The author identifies three interrelated core problems: first, the absence of effective market mechanisms, which undermines the capacity of science communication actors to achieve financial sustainability and organizational vitality; second, the lack of diversity and innovation in communication formats, resulting in a monotonous and unengaging science communication landscape; and third, the limited practicality and everyday relevance of science communication content, which remains disconnected from the lived experiences and informational needs of the public.

In response to these challenges, the author proceeds to analyze a range of representative domestic and international cases of science communication practice. These include offline science popularization activities such as the Chinese Academy of Sciences Science Festival; various online science communication platforms; and the increasingly prominent model of “citizen science”, which has been widely heralded for its potential to transform the paradigm of public engagement with science (Bonney et al., 2016). Furthermore, this book also provides a systematic overview of exemplary science museums and science communication venues across China, as well as grassroots science communication organizations and individual science communicators (“science influencers”) who have emerged as significant actors in the contemporary media environment. The synthesis of these cases and practices

converges upon the core strategy proposed by the author for addressing the aforementioned problems: the socialization pathway of science communication. The underlying logic is that only by fully mobilizing the participation of diverse actors—including governmental agencies, scientific institutions, enterprises, social organizations, and individual citizens—can Chinese science communication achieve sustainable development and genuinely embed science into the fabric of everyday life.

It is noteworthy that this argument finds strong resonance with recent developments in China's science popularization policy. The newly revised *Law of the People's Republic of China on Popularization of Science and Technology*, adopted in December 2024, explicitly articulates the need to “construct a science popularization development pattern with coordinated progress by the government, society, and the market” (Tang, 2022). The law emphasizes that “the state encourages and guides social funds to invest in science popularization undertakings” and supports the operation of science communication activities by social forces in accordance with market mechanisms. This policy articulation of a “socialized coordination pattern” involving multiple participants aligns seamlessly with the author's advocacy for a socialization pathway, thereby grounding the book's practical recommendations within the broader framework of national science communication strategy.

By integrating theoretical reflection with policy-informed practical analysis, this book accomplishes something rare in the literature: it not only advances conceptual understanding of science communication but also offers concrete, actionable pathways for addressing real-world challenges. The author's systematic treatment of the socialization pathway, from problem diagnosis, through case analysis, to policy alignment, all provides both scholars and practitioners with a valuable resource for navigating the complexities of science communication in contemporary China. In this sense, the book stands as a noteworthy contribution that successfully bridges the gap between theory and practice, offering insights that are at once intellectually rigorous and practically relevant.

### ***Conclusion***

In conclusion, this book represents a scholarly work of considerable significance for the development of science communication, particularly within the Chinese context, at both theoretical and practical levels. At the theoretical level, the author skillfully constructs three bridging dialogues. First, it facilitates a dialogue between critical science communication and strategic science communication, transcending the longstanding disciplinary boundaries between these two traditions and offering a more integrated analytical framework for science communication research. Second, it establishes systematic connections between science communication and mainstream communication theories, introducing foundational frameworks such as agenda-setting, the spiral of silence, cultivation theory, and uses and gratifications into the study of science communication. This endeavor not only infuses science communication with fresh theoretical resources but also extends the explanatory boundaries of these classic theories in the digital age. Third, it bridges Western science communication theories and Chinese indigenous practices, drawing on international scholarship while remaining firmly grounded in the realities of science communication in the Chinese context. These three bridging dialogues open up new possibilities for theoretical advancement in science communication, particularly within the Chinese academic setting where the disciplinary status of science communication remains ambiguous and has long been peripheral to mainstream communication studies.

Furthermore, this book also serves as a valuable pedagogical resource with high instructional utility. The discussion questions appended to each chapter effectively extend readers' engagement with the material, prompting critical reflection on key issues and providing excellent material for classroom discussions and assignments. Moreover, the detailed case studies presented throughout the chapters are both representative and timely, encompassing a

diverse range of practices: from offline science popularization activities such as the Chinese Academy of Sciences Science Festival, to various online science communication platforms, citizen science initiatives, exemplary science museums, grassroots science organizations, and individual science communicators. These cases are not only vivid and engaging but also systematically organized, making the book an excellent textbook resource for both undergraduate and graduate courses in science communication.

Regarding potential limitations, two points merit consideration. First, as noted earlier, the author's academic background predisposes the book toward a greater emphasis on strategic science communication, that is, enhancing the effectiveness and efficiency of science communication practices. In contrast, its engagement with critical science communication, which involves social reflection on scientific and technological development, power relations, and ideological dimensions, appears relatively limited. Research indicates that critical approaches in domestic science communication scholarship are already scarce, largely inherited from the critical traditions of science studies, and this book's treatment of such perspectives is somewhat underdeveloped. Second, constrained by the book's length, the presentation of certain diverse cases and their operational details is somewhat abbreviated. For lower-level students lacking background knowledge in science communication, some cases may require additional contextualization and explanation, which to some extent increases the difficulty of comprehension and accessibility. Nevertheless, these limitations do not diminish the book's overall scholarly contribution and practical significance. On balance, this remains an outstanding work that combines theoretical depth with practical relevance, and academic rigor with pedagogical value.

## Reference:

- Besley, J.C. and Dudo, A. (2022). Strategic science communication: a guide to setting the right objectives for more effective public engagement. JHU Press.
- Besley, J.C., O'Hara, K. and Dudo, A. (2019). Strategic science communication as planned behavior: Understanding scientists' willingness to choose specific tactics. *PloS one*, 14(10), p.e0224039.
- Bonney, R., Phillips, T.B., Ballard, H.L. and Enck, J.W., 2016. Can citizen science enhance public understanding of science?. *Public understanding of science*, 25(1), pp.2-16.
- Davies, S.R. and Horst, M. (2016). Deficit and Dialogue: Reframing Science Communication Research and Practice. In *Science Communication: Culture, Identity and Citizenship* (pp. 213-231). London: Palgrave Macmillan UK.
- Jia, H., & Yan, J. (2017). The origin, transformation, and opportunities of science communication in China[科学传播的溯源、变革与中国机遇]. *新闻与传播研究/Journalism & Communication*, 24(2), 64-75, 127.
- Nisbet, M.C. and Scheufele, D.A. (2009). What's next for science communication? Promising directions and lingering distractions. *American journal of botany*, 96(10), pp.1767-1778.
- Tang, S., Zheng, B., & Yu, Y. (2022). Study on the legal guarantee of socialized coordination of science popularization[科普社会化协同的法治保障研究]. *科普研究/Studies on Science Popularization*, 17(2), 15-20, 98-99.
- Tian, S. (2007). Science communication: An emerging academic field[科学传播——一个新兴的学术领域]. *新闻与传播研究/Journalism & Communication*, (2), 81-90, 97.
- Yang, Z. (2023). Who should be a science communicator? The struggle for 'legitimate' status as science communicators between Chinese scientists and citizens on a Chinese knowledge-sharing platform. *Public Understanding of Science*, 32(3), pp.357-372.