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The Mediatization of Scientific Knowledge in Europe and the Rise of the Science Influencer

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Abstract

This paper examines the mediatization of scientific knowledge in Europe and the emergence of the science influencer as a new cultural figure in the digital public sphere. Drawing on mediatization theory and the sociology of scientific knowledge, it argues that scientific authority is undergoing a structural reconfiguration shaped by platform logics, algorithmic visibility, and affective modes of engagement. The analysis traces how the locus of epistemic legitimacy has shifted from institutional control to networked credibility, where scientists, audiences, and algorithms co-produce authority through interaction and performance. Through a comparative exploration of European cases, the study demonstrates that science communication has evolved from a model of institutional dissemination to one of participatory mediation. The science influencer emerges as a hybrid actor who blends professional expertise with personal authenticity, reframing scientific knowledge as relational, emotional, and performative. The findings suggest that this transformation does not signify a decline of scientific authority but its adaptation to the communicative conditions of the platform era. Trust in science increasingly depends on transparency, affective connection, and continuous dialogue rather than hierarchical distance. The paper concludes that European institutions must cultivate dialogic credibility by collaborating with independent communicators and fostering digital literacy. The rise of the science influencer thus reflects a broader cultural shift toward communicative participation in the production and validation of knowledge.

Keywords: mediatization of science, science influencers, scientific authority, platformization, media logic, digital communication, public understanding of science, Europe, epistemic legitimacy

1. Introduction

1.1 Background

Scientific communication in Europe has entered a new epoch characterized by the intertwining of media logic, algorithmic curation, and personal branding. For much of the twentieth century, science reached the public through institutional channels—press releases from universities, science sections in national newspapers, or public service broadcasting. Knowledge circulated within a relatively closed system governed by professional norms of accuracy, neutrality, and distance. Communication was linear: experts spoke, the public listened, and journalists acted as intermediaries. The authority of science rested upon institutional prestige and epistemic

distance.

The early twenty-first century disrupted this structure. The proliferation of digital platforms introduced an environment where communication is no longer unidirectional. Scientists, educators, and enthusiasts engage directly with audiences, bypassing traditional gatekeepers. Platforms such as YouTube, TikTok, and Instagram provide not only technical means for dissemination but also shape communicative expectations through algorithms, interaction metrics, and aesthetics of engagement. Scientific visibility becomes contingent on emotional appeal, storytelling, and user interaction. The symbolic power once confined to academic institutions is now diffused across networks where visibility is produced through attention rather than accreditation.

This transformation can be understood as a process of mediatization. Media no longer function solely as channels for transmitting information but as environments that reconfigure the social practices of science. The mediatization of scientific knowledge implies that the production, representation, and validation of knowledge increasingly adapt to media logic. In this environment, scientists learn to translate complex concepts into formats that resonate with algorithmic circulation and audience affect. The traditional divide between scientific and popular communication erodes as both domains operate within the same communicative ecosystem.

In Europe, this shift is embedded in broader social and institutional developments. European research policy, particularly through programs such as Horizon Europe and *Science with and for Society* (SwafS), promotes public engagement and open science. These initiatives seek to democratize knowledge and strengthen the relationship between science and citizens. However, when engagement migrates to digital platforms, it becomes mediated by commercial logics. The language of participation merges with metrics of popularity, creating a tension between democratic ideals and algorithmic imperatives.

Within this context, a new figure has emerged—the science influencer. Individuals who combine expertise with the skills of digital storytelling and self-presentation have become key mediators between professional science and the public sphere. They operate as "micro-public intellectuals," constructing hybrid identities that blend the credibility of science with the intimacy and immediacy characteristic of influencer culture. The rise of the science influencer marks a symbolic shift from institutional authority to performative authenticity as the principal currency of trust in scientific communication.

1.2 Research Problem and Questions

This study examines how the authority and legitimacy of scientific knowledge are being reshaped under the conditions of mediatization and platformization. As scientific information circulates within attention-driven environments, new hierarchies of visibility and trust emerge. The logic of platforms privileges content that stimulates emotion, fosters identification, or promises entertainment. Consequently, the communicative form of science adapts to these imperatives, foregrounding personality and narrative over abstraction and institutional endorsement.

The central research questions guiding this inquiry are:

1) How is the authority of scientific knowledge being reshaped under the influence of media and platform logics in Europe?
2) What does the rise of the science influencer signify for traditional systems of expertise and the institutional validation of knowledge?
3) In what ways does mediatization transform the relational configuration among scientists, media, and the public?

These questions aim to uncover not only the representational shifts in science communication but also the deeper transformations in the social epistemology of science. The mediatized public sphere becomes a site where scientific legitimacy is negotiated rather than simply transmitted. Understanding this transformation requires bridging theories of media sociology with the sociology of scientific knowledge.

1.3 Research Significance

Theoretical Contribution

The theoretical contribution of this study lies in connecting the framework of mediatization theory with the sociology of scientific knowledge. Hepp (2013, 2020) conceptualizes mediatization as the process by which media become integrated into the operations of social

institutions, transforming their internal logics and communicative structures. When applied to science, this perspective highlights how scientific authority is not simply communicated through media but co-constituted by it. Media logics—visualization, emotional engagement, narrative framing—reshape how credibility and expertise are perceived.

Jasanoff (2004) and Hilgartner (1990) emphasize the co-production of knowledge and authority. In a mediatized environment, this co-production extends beyond scientific communities to include audiences, platforms, and algorithms as participants in the construction of epistemic legitimacy. The figure of the science influencer exemplifies this shift: expertise is enacted through communicative performance rather than institutional credentials alone. By examining this transformation, the study contributes to ongoing debates on the crisis of expertise and the reconfiguration of trust in post-digital societies.

Practical Relevance

The practical relevance concerns the implications of platformization for public understanding of science. Algorithms determine the visibility of scientific content, privileging forms of engagement that align with the platform's commercial objectives. This environment rewards simplicity, emotion, and repetition, potentially at the expense of complexity and critical nuance. As a result, scientists and communicators face a dual challenge: maintaining epistemic integrity while adapting to the performative conditions of visibility.

The study's findings can inform science policy and institutional communication strategies in Europe. By understanding how mediatization affects perceptions of credibility, scientific institutions may develop new forms of collaboration with independent communicators. Rather than opposing the influencer model, institutions could embrace dialogic forms of authority, where trust emerges from transparency, responsiveness, and relational authenticity.

1.4 Literature Overview

The mediatization of science has been analyzed across diverse theoretical traditions. Hepp (2020) and Hjarvard (2008) provide foundational frameworks for understanding how media logics penetrate different social domains, producing "communicative figurations" that shape institutional practices. Within science communication, this approach reveals how scientific discourse becomes entangled with digital affordances and networked interaction.

Jasanoff's (2004) work on the co-production of knowledge remains central for grasping how scientific authority is negotiated across social and cultural contexts. Knowledge does not exist in isolation from its modes of representation; rather, it is co-constructed through interfaces between experts, institutions, and publics. Hilgartner (1990) extends this perspective by showing how the "public stage" of science transforms what counts as credible knowledge.

Recent scholarship has begun to examine the rise of science influencers as a symptom of platformization. Lundin (2021) explores how digital creators mobilize expertise within influencer cultures, translating complex knowledge into relatable narratives. Other studies investigate the ethical and epistemological implications of this shift, questioning whether performative authenticity can sustain the normative ideals of scientific objectivity.

2. Theoretical Framework

2.1 The Three Shifts in Science Communication

From Communicating Science to Constructing Science through Communication

The mediatization of science begins with a paradigmatic shift in how communication is understood. Science communication was once conceived as the dissemination of already stabilized facts from experts to lay audiences. The "deficit model" presupposed a one-directional flow of information in which knowledge resided within institutions and was transmitted to the public through trusted mediators such as journalists or educators. This model has given way to a constructivist understanding of communication, where the act of communicating is itself constitutive of scientific meaning. Science is not only communicated but continuously reconstructed through processes of representation, translation, and interpretation.

The constructivist turn reframes science as a social and performative discourse. Scientific authority is produced not only through empirical validity but also through the modes of its public presentation. Visuals, narratives, and

metaphors become integral components of epistemic formation. The growing importance of visibility in a digital environment turns communication into a condition of existence for scientific knowledge. To be credible, science must be seen, narrated, and emotionally resonant. The interface between visibility and legitimacy transforms the communicative landscape, where representation itself becomes a site of knowledge production.

From Institutional Control to Platform and Individual Mediation

The second shift concerns the relocation of authority from institutions to platforms and individuals. Historically, universities, academies, and scientific societies functioned as the gatekeepers of legitimate knowledge. The digital turn has diffused this control, enabling scientists, educators, and amateurs to communicate directly with publics. Platforms such as YouTube, TikTok, and Instagram operate as mediating infrastructures that allow individuals to produce and circulate content without institutional endorsement. The scientist becomes both a producer and consumer of content—a "prosumer"—who blends professional identity with personal expression.

This decentralization alters the economy of expertise. Traditional authority relied on institutional markers such as credentials, peer review, and affiliation. Platform-based authority relies on relational markers such as visibility, follower engagement, and perceived authenticity. The metrics of popularity replace the hierarchies of institutional validation. In this environment, knowledge dissemination becomes contingent on platform algorithms and audience response. The boundary between professional science communication and popular entertainment weakens, resulting in a hybrid field in which scientific credibility competes within the same attention economy as other forms of digital content.

From Authoritative Transmission to Emotional and Performative Engagement

A third shift concerns the affective transformation of scientific communication. The classical scientific ethos valued objectivity, distance, and neutrality. In contrast, digital environments reward emotional expressiveness, relatability, and personal storytelling. Trust in scientific figures increasingly depends on perceived authenticity rather than institutional distance. Audiences connect to scientists who communicate passion, vulnerability, and curiosity. These affective performances establish forms of parasocial intimacy that can reinforce credibility and engagement.

The performative dimension of science communication does not signify a loss of rigor but signals a change in the grammar of trust. The relationship between communicator and audience becomes dialogical and participatory. The scientist no longer represents an impersonal institution but embodies a relatable persona whose credibility arises through consistent communication and emotional resonance. This redefinition of communication as performance aligns with the broader dynamics of platform culture, where attention and engagement are achieved through authenticity and affect rather than hierarchical authority.

2.2 Mediatization Theory and Media Logic

Mediatization theory provides a conceptual foundation for understanding these transformations. Andreas Hepp defines mediatization as the historical process through which media become integrated into the operations of social institutions, gradually reshaping their internal logics and communicative practices. Rather than treating media as external tools, Hepp's framework understands them as environments that structure social interaction. Mediatization thus refers to a meta-process in which institutions adapt their practices to media logic while simultaneously being reconstituted by it.

Hjarvard's conceptualization complements this by treating media as semi-independent institutions that influence other social systems such as politics, religion, and science. Media logic encompasses the norms, values, and aesthetic conventions that guide how information is produced, circulated, and received. These include tendencies toward personalization, dramatization, and simplification. When science becomes mediatized, it must operate within these logics to maintain visibility and relevance. The process of scientific communication becomes shaped by visual appeal, narrative coherence, and algorithmic amplification.

Mediatization is therefore not a singular event but an ongoing negotiation between the autonomy of science and the imperatives of media. Scientific institutions, in adapting to

media logic, modify their own communication practices—emphasizing storytelling, emotional tone, and accessibility. The epistemic authority of science becomes intertwined with its performative visibility. The capacity of a scientific claim to circulate widely contributes to its perceived legitimacy. In this sense, visibility itself becomes a dimension of epistemic power.

The implications of mediatization extend beyond communication to the structure of scientific authority. Media logic introduces new forms of gatekeeping through algorithms and engagement metrics, redefining what counts as credible or relevant. The traditional hierarchy between expert and layperson is destabilized as audiences gain the capacity to comment, remix, and reinterpret scientific content. The boundaries of expertise become porous, and authority becomes co-produced across networks of professionals, audiences, and platforms.

2.3 The Reconfiguration of Scientific Authority

The sociology of scientific knowledge provides the theoretical tools to analyze this reconfiguration. Sheila Jasanoff's concept of co-production describes how knowledge and social order are mutually constituted. Scientific authority is not merely discovered or asserted; it is constructed through social practices that link epistemic norms with institutional credibility. In mediatized contexts, this co-production extends to the interactions between scientists, audiences, and platforms. The credibility of a communicator depends on both their expertise and their capacity to inhabit the communicative expectations of digital culture.

Stephen Hilgartner's notion of the "public stage" of science highlights the performative dimension of credibility. Scientific claims are validated not only within the laboratory but also within public arenas where they are observed, contested, and dramatized. Media spaces amplify this performative arena, making visibility a prerequisite for authority. Expertise thus becomes a form of social performance. The authority of science no longer rests solely on peer review or institutional prestige but also on communicative competence and audience recognition.

The reconfiguration of authority also entails a shift from institutional legitimacy to relational trust. Trust becomes enacted through repeated interactions, transparency, and responsiveness. In digital environments, these interactions take the form of comments, live streams, and shared experiences. The scientist's persona becomes an instrument of epistemic mediation. By sharing their reasoning process, doubts, and emotions, communicators invite audiences into the epistemic process, generating a sense of co-presence and inclusion.

This redefinition of authority raises questions about the boundaries of expertise. The openness that characterizes digital communication democratizes participation but also exposes science to contestation and misinformation. Authority becomes conditional and negotiated, shaped by communicative resonance as much as by technical expertise. The mediatized public sphere thus transforms scientific knowledge from an institutional artifact into a dynamic social performance embedded within affective and algorithmic structures.

2.4 The Collision and Fusion with Influencer Logic

The rise of influencer culture represents the latest stage in the mediatization of science. Influencers operate within an economy of visibility driven by engagement, intimacy, and authenticity. Their authority derives from the perception of accessibility and trustworthiness rather than formal expertise. When this logic enters the field of science, it generates both tensions and innovations. Scientists who engage as influencers must reconcile epistemic rigor with the communicative demands of platform culture.

Influencer logic reshapes the ethics of communication. The value of a message is often measured by its reach and interaction rather than its depth or precision. This creates incentives for simplification, emotional dramatization, and personal branding. Yet these same mechanisms can also expand the social reach of science, making complex knowledge accessible to wider publics. The challenge lies in maintaining epistemic responsibility while adapting to the communicative grammars of digital culture.

Hybrid identities emerge at the intersection of these logics. The scientist becomes simultaneously a communicator and a creator, negotiating between institutional expectations and audience engagement. This hybridization challenges the traditional separation between the professional and the personal. Scientific expertise is re-enacted through personality, lifestyle, and authenticity. The laboratory

extends into the everyday life of the communicator, and knowledge becomes part of a lived narrative.

The idea of "science as lifestyle" encapsulates this transformation. Knowledge is presented as part of an identity that blends intellectual curiosity, personal experience, and social relevance. This fusion of the epistemic and the emotional allows audiences to engage with science as a form of cultural participation. It also reframes public understanding of science as a shared, experiential practice rather than a distant body of facts.

The incorporation of influencer logic into science communication does not simply erode authority; it redefines it in performative and participatory terms. Authority becomes fluid, co-created through ongoing engagement between communicator and audience. The mediatized environment thus produces a new form of public science, one that is affective, visual, and relational, yet capable of renewing trust in expertise through authenticity and dialogue.

3. Europe's Science Communication Landscape

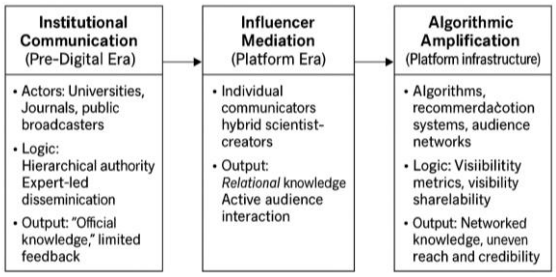

Figure 1. Transformation of Scientific Knowledge Circulation

3.1 Policy and Institutional Context

Science communication in Europe operates within a policy framework that increasingly promotes openness, inclusion, and public engagement. At the center of this transformation is *Horizon Europe*, the European Union's flagship research and innovation program. It integrates open science as both a normative principle and a practical requirement. Open science is conceived as an approach that democratizes the research process by encouraging transparency, collaboration, and public accessibility. Within this framework, knowledge circulation is no longer limited to professional networks. Scientists are encouraged to share data, methodologies, and results through open-access platforms and to engage in dialogue with non-academic audiences.

The *Science with and for Society* (SwafS) program, incorporated within Horizon Europe, institutionalizes this commitment to participatory engagement. Its aim is to strengthen the connection between science and society by promoting responsible research and innovation (RRI). The RRI framework emphasizes inclusivity, ethics, and responsiveness. Researchers are urged to consider the societal impacts of their work, involve stakeholders in decision-making, and ensure that scientific advancement aligns with democratic values. This orientation has significant implications for communication. The act of explaining science to the public is reimagined as a process of co-creation. Citizens are no longer passive recipients of information but participants in shaping scientific priorities and interpreting knowledge.

The emphasis on co-creation challenges the traditional hierarchical structure of science communication. Institutions accustomed to centralized control face the need to accommodate dialogic and networked modes of engagement. Many European research organizations have responded by creating communication units that blend expertise in media, education, and outreach. Public engagement offices, social media strategies, and interdisciplinary collaborations have become standard components of institutional infrastructures. Yet this institutionalization of openness also introduces contradictions. Bureaucratic procedures, regulatory constraints, and reputational management can limit the spontaneity and authenticity required for effective communication on digital platforms.

European science policy thus finds itself balancing two competing imperatives. On one side is the administrative logic of accountability and standardized communication, which ensures credibility and compliance. On the other is the participatory ethos of openness, which values creativity, informality, and emotional connection. The tension between these logics shapes the broader context in which science influencers operate. Many of them occupy a space at the boundary between institutional expectations and personal autonomy, translating the ideals of open science into the language of platform culture. Their work often accomplishes what institutional communication cannot

achieve: immediacy, personality, and sustained engagement.

The European policy environment provides fertile ground for the rise of such figures. Funding programs increasingly support citizen science, media partnerships, and digital outreach. Institutions collaborate with influencers to reach younger audiences, experiment with narrative formats, and build trust among communities skeptical of scientific authority. Yet these collaborations remain uneasy. Influencers operate within economies of attention that do not always align with academic norms. Institutions value precision and accountability, while platforms reward visibility and affect. This structural tension underlies much of the current transformation in European science communication.

3.2 Platform Practices and Science Influencer Cases

The mediatization of science in Europe can be observed through specific cases that illustrate how individuals and organizations adapt to the dynamics of digital platforms. Across countries, science communicators have developed distinctive approaches shaped by cultural traditions, media systems, and linguistic communities.

Germany: *MaiLab (Mai Thi Nguyen-Kim)*

Mai Thi Nguyen-Kim's *MaiLab* represents one of the most influential examples of science communication in Europe. Trained as a chemist, Nguyen-Kim bridges the gap between professional science and popular culture through a YouTube channel that combines analytical rigor with humor and visual storytelling. Her content covers topics ranging from vaccine science to everyday chemistry, blending scientific depth with an accessible narrative style. The presentation relies heavily on visual metaphors, expressive body language, and direct address, creating a sense of intimacy between communicator and audience.

Credibility in *MaiLab* emerges through the strategic interplay between expertise and authenticity. Nguyen-Kim consistently references scientific sources, integrates data visualizations, and critiques misinformation, reinforcing her legitimacy as a scientist. At the same time, she foregrounds her individuality and emotions, presenting science as part of personal experience. This combination allows her to operate simultaneously within the conventions of academia and the aesthetics of influencer culture. Her success demonstrates how scientific authority can be reconstituted through media performance without losing epistemic integrity.

France: *Nota Bene*

The French YouTube channel *Nota Bene*, created by Benjamin Brillaud, illustrates a different form of hybridization. While primarily focused on history, *Nota Bene* integrates scientific reasoning and critical analysis, often addressing topics where science and history intersect, such as technological evolution, archaeology, or environmental change. The channel's strength lies in its storytelling approach. Brillaud constructs narratives that situate scientific concepts within cultural and historical contexts, emphasizing continuity between human curiosity and scientific inquiry.

The appeal of *Nota Bene* stems from its capacity to translate specialized knowledge into collective memory. By embedding science in stories of civilization, Brillaud turns abstract ideas into cultural experiences. The channel thus performs a mediating role between science and the humanities, expanding the scope of science communication beyond its disciplinary boundaries. The emphasis on narrative coherence and cultural resonance exemplifies the European tendency to frame science as part of a broader intellectual heritage rather than an isolated technical domain.

Italy: *La Scienza Meditata*

In Italy, *La Scienza Meditata* represents a reflective and philosophical approach to science communication. The channel emphasizes the intersection of scientific inquiry and philosophical reflection, exploring themes such as causality, uncertainty, and the ethics of knowledge. The communicator adopts a contemplative tone, combining analytical reasoning with introspection. This mode of presentation diverges from the energetic and entertainment-driven styles common on other platforms. Instead, it constructs a space of intellectual dialogue, appealing to audiences interested in the deeper implications of science.

The Italian context reveals how mediatization can accommodate diverse communicative cultures. While some European influencers adopt fast-paced, visually dynamic formats, others pursue slower, contemplative rhythms. *La Scienza Meditata* exemplifies how digital media can sustain critical and reflective discourse. It

also underscores the multiplicity of audience expectations: not all viewers seek entertainment; some desire a sense of shared inquiry and intellectual companionship. The case demonstrates that mediatization does not necessarily homogenize communication but can diversify it through personalization and niche specialization.

Netherlands: Youth-Oriented Short-Form Science Projects

In the Netherlands, science communication initiatives have embraced short-form video formats inspired by platforms such as TikTok and Instagram Reels. These projects often emerge from collaborations between universities, public broadcasters, and independent creators. They target younger audiences who consume information through mobile devices and prefer brief, visually engaging content. The communicative strategy combines educational aims with entertainment aesthetics. Humor, visual effects, and interactive challenges are used to make scientific concepts relatable and memorable.

Institutional participation in these projects reflects a pragmatic adaptation to platform logics. Dutch universities and science foundations support content that blends institutional authority with the stylistic conventions of influencer culture. Scientists appear in informal settings, speak in colloquial language, and invite audience participation. This hybrid model integrates the trustworthiness of institutional science with the immediacy of personal communication. It demonstrates how European institutions are learning to operate within the communicative environment of platforms without fully relinquishing control over content and credibility.

3.3 Shared Features of Science Influencers

Across national contexts, European science influencers share several defining characteristics that reflect the broader mediatization of scientific authority. One central feature is the emphasis on emotional appeal and storytelling. Scientific information is often presented within narratives of curiosity, discovery, and personal growth. The emotional dimension of communication serves as a bridge between complex knowledge and audience experience. By embedding facts within affective structures, influencers transform abstract reasoning into relatable stories.

Another characteristic is the de-hierarchized tone that contrasts sharply with traditional institutional discourse. The authoritative distance that once defined scientific communication is replaced by conversational intimacy. Influencers often speak directly to the camera, employ humor, and use colloquial language. This approach fosters inclusivity by signaling that scientific knowledge belongs to everyone, not only to specialists. It also aligns with the logic of social media, where authenticity and approachability are essential markers of credibility.

Authenticity itself becomes a performative construct. Many influencers present themselves as learners rather than experts, adopting the stance of curiosity instead of mastery. The statement "I am learning with you" replaces the conventional model of instruction. This positioning reduces epistemic asymmetry and encourages participatory learning. It also allows influencers to maintain flexibility in addressing errors or uncertainties, reinforcing trust through transparency.

Personal branding constitutes another significant aspect. Influencers cultivate distinctive visual styles, linguistic patterns, and thematic focuses that define their public identities. Branding does not merely serve promotional purposes; it functions as a semiotic marker of reliability. Consistency in tone and aesthetics signals coherence and commitment. The intertwining of personal and professional identity reflects the broader trend toward the personalization of authority in digital cultures.

Science communication in this environment functions as a form of parasocial engagement. Audiences develop relationships with communicators that resemble friendship or mentorship. The repeated exposure to a communicator's persona generates familiarity and attachment. These affective bonds enhance attention and retention, transforming communication into a sustained social relationship. In the context of science, parasociality serves as a mechanism of trust. Audiences come to value the communicator's perspective not only for informational accuracy but for perceived honesty and integrity.

The shared features of European science influencers reveal how mediatization reconfigures both the form and substance of

public science. The digital environment fosters new modes of connection that combine epistemic seriousness with emotional accessibility. Influencers translate the ideals of open and participatory science into communicative practices that resonate with the expectations of contemporary audiences. They embody a new model of scientific authority, one rooted in visibility, relationality, and authenticity rather than institutional distance.

4. Analysis and Discussion

4.1 Recontextualization of Scientific Authority

Scientific authority has undergone a deep transformation within the mediatized and platformized environment of contemporary Europe. The traditional model, where legitimacy was anchored in institutional validation and disciplinary norms, is giving way to a networked model of credibility. Authority now emerges through interactional processes that are distributed across media, audiences, and algorithms. The scientist who once derived trust from institutional affiliation must now cultivate credibility through visibility, responsiveness, and emotional resonance. This transition reflects a broader cultural shift in how expertise is recognized and valued.

Networked credibility functions through social validation rather than hierarchical endorsement. The public no longer encounters science solely through peer-reviewed publications or institutional announcements but through digital encounters shaped by engagement metrics. The number of views, likes, and shares serves as a proxy for relevance. This metric-based environment reframes the production of trust. Authority becomes participatory, shaped by the continuous feedback loop between communicators and audiences. Credibility is not simply claimed but enacted through communicative performance.

Emotional connection has become a central basis for trust in science. Authenticity, rather than distance, now defines the conditions of epistemic reliability. Scientists who display emotion and vulnerability are often perceived as more trustworthy than those who adhere to detached objectivity. This does not mean that emotions replace facts but that they become vehicles for making facts meaningful. Relational transparency, the open acknowledgment of uncertainty and personal motivation, replaces the older ideal of impersonal objectivity. The scientist's credibility depends on the ability to articulate not only what is known but how it is known and why it matters.

The recontextualization of authority thus involves a redefinition of objectivity. In the mediatized public sphere, objectivity is no longer equated with emotional neutrality. It is reconstructed as an ethical stance rooted in honesty, reflexivity, and openness. The communicator's willingness to disclose their reasoning, limitations, and positionality signals integrity to audiences accustomed to skepticism. Transparency becomes the new form of rigor. The authority of science remains, but it is expressed through relational engagement rather than institutional distance.

4.2 Tensions within Platform Logics

The integration of scientific communication into digital platforms introduces structural tensions between epistemic and algorithmic imperatives. The logics of science and of platforms operate on different temporalities and value systems. Science values deliberation, precision, and collective verification. Platforms prioritize immediacy, engagement, and shareability. This asymmetry produces a continual negotiation in which communicators must balance accuracy with attention.

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Table 1. Comparison of Media Logic and Scientific Logic

Dimension	Scientific Logic	Media Logic (Platform Logic)	Resulting Hybrid Practices in Science Communication
Goal Orientation	Truth-seeking, verification, collective peer review	Attention-seeking, visibility, shareability	Integration of accuracy and appeal through storytelling

Temporal Rhythm	Slow, iterative, cumulative	Fast, reactive, real-time	Scientists adapting to real-time audience feedback
Communication Mode	Formal, abstract, distanced	Emotional, personalized, visual	Emergence of affective and performative science
Validation Mechanism	Institutional review, expertise hierarchy	Audience engagement metrics, algorithmic ranking	Dual legitimacy: peer approval + audience trust
Ethical Frame	Objectivity, neutrality	Authenticity, transparency	Reframed credibility through honesty and openness
Authority Structure	Centralized, institutional	Networked, participatory	Co-production of credibility between experts and publics

The table above illustrates how these contrasting logics generate hybrid practices in science communication. Scientists adapt to the temporal and aesthetic rhythms of platforms while striving to retain methodological rigor. This synthesis of epistemic and media logics forms the foundation for the performative negotiation of authority that defines contemporary public science.

Algorithmic pressures shape the visibility of scientific content. Recommendation systems privilege material that elicits emotional reactions or sustained interaction. Scientific explanations often require complexity and nuance, which can be at odds with the demand for easily digestible content. Communicators adapt by simplifying concepts, integrating humor, and foregrounding narrative hooks. This adaptation allows science to circulate widely but risks reducing it to entertainment. The scientist becomes a performer who must manage audience interest without compromising epistemic integrity.

The pursuit of visibility also creates the danger of oversimplification and sensationalism. Titles designed to capture attention may distort the content of research. Dramatic framing can obscure uncertainty or exaggerate implications. Over time, audiences may experience "content fatigue," a saturation of simplified science that diminishes attention to more substantive discussions. The visibility that empowers science communicators can simultaneously distort the perception of scientific practice, reinforcing the impression that science is about certainty and spectacle rather than doubt and iteration.

The ambivalence of visibility lies in its double function as both empowerment and constraint. Digital platforms enable scientists to reach audiences directly, bypassing institutional mediation, yet the same platforms impose performative conditions that shape how science can appear. Visibility is not neutral; it is a form of governance exercised through algorithms and metrics. Communicators internalize these pressures, adjusting their style, tone, and topics to sustain engagement. The logic of platforms thus becomes a constitutive part of the communicative ecology of science. Understanding these tensions is essential to evaluating the promises and perils of mediatized science.

4.3 The Identity Transformation of the Scientist

The mediatization of science has transformed not only modes of communication but also the very identity of the scientist. The traditional figure of the expert was characterized by institutional affiliation, technical competence, and rhetorical restraint. In the platform environment, scientists become communicators and creators who must navigate multiple identities. They act as educators, entertainers, and cultural commentators. Their credibility depends on their capacity to integrate scientific rigor with narrative appeal and social media fluency.

This identity transformation generates both opportunities and anxieties. For many scientists, participation in public discourse through platforms represents a way to democratize access to knowledge and counter misinformation. Yet the move toward self-presentation and personal branding can be perceived as incompatible with academic norms. The ethos of humility and collective authorship collides with the performative culture of individual visibility. Institutions often remain uneasy about their members gaining celebrity

status, fearing that popularity undermines scholarly seriousness.

Negotiating these conflicting expectations requires a redefinition of professional identity. The scientist as communicator must master the aesthetics of engagement without succumbing to its superficiality. Success in this realm depends not only on expertise but on the ability to craft an authentic persona. The public figure of the scientist becomes a narrative construction sustained by repetition, intimacy, and responsiveness. Communication becomes part of scientific labor rather than an auxiliary activity.

Reframing the scientist as a cultural actor acknowledges that science functions as a symbolic resource within society. Scientists influence cultural narratives about truth, uncertainty, and progress. Their media presence shapes collective imaginaries of rationality and evidence. In this sense, science communication participates in the construction of cultural meaning rather than merely transmitting information. The mediatized scientist operates within the same cultural economy as artists, journalists, and activists, contributing to the broader public negotiation of knowledge and value.

4.4 Knowledge Legitimacy and Public Understanding

The transformation of communication has profound implications for how knowledge legitimacy is constructed. Affective engagement has introduced what can be described as an affective epistemology, where understanding is mediated through feeling, empathy, and identification. Audiences learn science not only by absorbing facts but by connecting emotionally with communicators. This experiential mode of knowing reshapes the relationship between evidence and belief. Knowledge becomes a shared affective process rather than a one-directional transmission.

The democratization of participation in digital platforms enables diverse voices to contribute to public discussions of science. Citizen scientists, educators, and lay commentators participate in producing meaning and interpretation. This inclusivity strengthens the social relevance of science but also challenges traditional boundaries of expertise. The relativization of truth becomes a risk when all perspectives are treated as equally valid within the marketplace of attention. The balance between openness and epistemic rigor becomes fragile.

The rise of populist science exemplifies this tension. Communicators who lack formal expertise may gain large audiences by appealing to emotion and skepticism toward institutions. Pseudo-expertise thrives in environments where engagement outweighs verification. The aesthetics of authenticity can be appropriated to legitimize misinformation. The same mechanisms that democratize communication can thus undermine epistemic reliability. Understanding this dynamic requires distinguishing between participatory legitimacy—based on recognition and resonance—and epistemic legitimacy—based on methodological accountability.

Hybrid models of legitimacy are emerging as a response to these challenges. Professional validation remains crucial, but it must coexist with relational trust built through communication. Scientists who engage with audiences transparently can reinforce both forms of legitimacy. Institutions are beginning to adapt by integrating media training, social engagement strategies, and ethical guidelines for digital communication. The goal is not to restore the old hierarchy of expertise but to articulate new forms of credibility that align with the realities of the mediatized public sphere.

4.5 Rearticulating the Role of Science in the Public Sphere

The mediatization of science invites a rethinking of science's role within the European public sphere. Science no longer functions solely as a system of knowledge production; it operates as a mode of cultural communication. Public visibility transforms scientific discourse into a performative act where values, identities, and expectations are negotiated. The performance of transparency, vulnerability, and humanity becomes central to the social life of science. Scientists are called upon to show the process of inquiry, including uncertainty and failure, as part of building relational trust.

This performative transparency transforms science into a participatory spectacle that reaffirms its social relevance. The public does not simply consume scientific facts but witnesses the practice of reasoning and questioning. The display of vulnerability—admitting mistakes, expressing doubt, or showing enthusiasm—humanizes

science and invites collective engagement. Such performances bridge the emotional distance between scientific institutions and citizens, fostering a sense of shared investment in knowledge.

Science in the mediatized public sphere becomes a collective enterprise of negotiation and mediation. Knowledge circulates through interactions between experts, communicators, audiences, and technological infrastructures. The boundaries between these actors are fluid, allowing science to be co-created across multiple sites of discourse. This distributed model enhances pluralism but also complicates accountability. Institutions must learn to manage communication ecosystems rather than control information flows.

Digital platforms occupy an ambivalent position in this configuration. They democratize access to scientific knowledge by lowering barriers to entry and enabling participatory dialogue. At the same time, they commodify attention and transform knowledge into data for algorithmic monetization. The value of science as public good becomes entangled with the economics of engagement. The mediatized public sphere thus oscillates between democratization and commercialization, between inclusion and instrumentalization.

Rearticulating the role of science requires acknowledging this duality. Science must assert its civic function while adapting to the communicative conditions of digital culture. Its authority will depend on its ability to integrate transparency, reflexivity, and inclusivity without sacrificing methodological integrity. The public sphere of science in Europe is no longer defined by the institutions that host it but by the networks that sustain it. The rise of the science influencer marks not the decline of scientific authority but its transformation into a relational and communicative practice suited to the realities of contemporary media society.

5. Conclusion

5.1 Summary of Core Findings

The mediatization of scientific knowledge in Europe marks a historical reconfiguration of how authority, credibility, and participation in science are structured. The rise of the science influencer does not represent a crisis of scientific authority but a transformation of its communicative foundations. In earlier paradigms, authority was sustained by institutional prestige and epistemic distance. In the platformized environment, it becomes co-produced through interactions between scientists, audiences, and technological infrastructures. Authority is now enacted through visibility, emotional resonance, and relational transparency rather than inherited from institutional legitimacy.

This transformation reflects a broader social evolution in which communication has become a constitutive dimension of knowledge itself. Science is no longer confined to laboratories or academic journals; it circulates within digital networks where meaning is continuously negotiated. The act of communicating becomes part of the epistemic process. The success of scientific messages depends not only on empirical validity but on the ability to adapt to the logics of platforms that mediate attention, visibility, and engagement.

The mediatized environment has redefined the public's relationship to science. Citizens do not merely receive information but participate in its interpretation and distribution. This participatory condition creates new forms of inclusion and accountability. Public understanding of science becomes experiential and affective, shaped by identification with communicators who embody curiosity, doubt, and transparency. Trust is established through perceived authenticity rather than hierarchical distance. The emotional and narrative dimensions of science communication have become central to its epistemic credibility.

Science influencers embody this new configuration. They bridge the gap between institutional knowledge and everyday experience, translating abstract concepts into relatable narratives. Their authority is not reducible to popularity; it arises from their ability to sustain a balance between expertise and accessibility. Their role demonstrates how media and communication have become integral to the public life of science. The influencer phenomenon crystallizes the convergence of scientific rationality and media logic in a society where credibility depends on connection and dialogue.

The findings of this study indicate that the mediatization of science represents a shift in epistemic culture. Knowledge is increasingly co-constructed through communicative interaction. Audiences contribute to defining

what counts as credible, visible, and relevant. Algorithms mediate these processes by determining the flow of information and structuring the hierarchy of attention. The authority of science thus emerges from an interplay of human and technological actors, producing a hybrid ecology of legitimacy that redefines the public sphere of knowledge.

5.2 Implications for Institutions

The transformation of scientific communication in the digital era poses significant implications for European research institutions, universities, and science policy frameworks. Traditional models of authority based on hierarchy and institutional distance are no longer sufficient to maintain public trust. Institutions must cultivate dialogic credibility that reflects the participatory logic of contemporary media environments. This involves recognizing communication not as a supplementary activity but as an integral component of scientific practice.

Institutions need to develop communication cultures that embrace openness and responsiveness. This shift requires an internal transformation of attitudes toward visibility and engagement. Scientists who participate in public discourse should be supported rather than marginalized. Institutions can play a crucial role by providing training in digital communication, narrative framing, and media ethics. Empowering scientists to engage with audiences on their own terms strengthens both the authenticity of communication and the public legitimacy of science.

Strategic collaboration between institutions and platform-based communicators represents another vital dimension. Partnerships with independent science influencers or creative media producers can expand the reach and diversity of science communication. Institutions should move from a model of dissemination to one of co-creation, where content is developed through dialogue with audiences. Such collaborations can bridge the gap between bureaucratic formality and the affective immediacy of digital storytelling. They also help to counteract misinformation by embedding credible expertise within the communicative ecosystems where the public already seeks information.

Digital literacy should become a central institutional priority. Understanding how algorithms shape visibility, how misinformation spreads, and how engagement metrics influence perception is essential for both scientists and the public. Institutions can promote critical engagement through educational initiatives that encourage audiences to question sources, verify claims, and reflect on the emotional dynamics of online knowledge consumption. By fostering a culture of reflexive communication, institutions can help sustain a more resilient and informed public sphere.

At the policy level, European frameworks such as Horizon Europe and SwafS can further integrate media research into science policy. Encouraging interdisciplinary collaboration between social scientists, media scholars, and natural scientists will enrich understanding of how mediatization affects public trust. Institutions can also support infrastructure for open and ethical digital communication that protects scientific integrity while embracing inclusivity. The transition toward dialogic credibility requires not only individual adaptation but systemic reorientation of how science relates to the public sphere.

5.3 Directions for Future Research

Hybrid models of legitimacy are emerging as a response to the evolving relationship between science, media, and society. Empirical research is needed to examine how audiences perceive credibility across different media formats and how emotional engagement influences their trust in scientific messages. Quantitative and qualitative studies could map the dynamics of attention and evaluate the effectiveness of various communication strategies in sustaining epistemic reliability.

Algorithmic governance represents another crucial area of inquiry. Understanding how recommendation systems prioritize or obscure scientific content is essential for assessing the political economy of knowledge visibility. Comparative studies across platforms could reveal how algorithms shape the circulation of credible versus misleading information.

Cross-cultural research beyond Europe would deepen understanding of how science influencers operate within different sociocultural and political contexts. The global circulation of influencer models invites reflection on how diverse traditions of expertise, authority, and participation interact with platform logics. Future work might also consider the long-term consequences of

mediatized science for education and democracy. As science becomes embedded in everyday digital life, questions of epistemic justice and accessibility gain prominence. Investigating how different groups experience and contribute to the public life of science will illuminate the evolving role of knowledge in shaping collective futures. The mediatization of scientific knowledge in Europe is not a transient phenomenon but a structural transformation of how societies produce, communicate, and validate truth. The rise of the science influencer signals a shift toward participatory epistemic cultures that value openness, emotion, and relational authenticity. The future of science communication will depend on the ability of institutions, scientists, and publics to negotiate this new terrain where authority is not imposed but continuously co-created through communication.

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