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SCIENCE AS A SOCIAL INSTITUTION: A REVIEW OF SOCIOLOGICAL THEORIES EXPLAINING ITS ROLE IN MODERNITY AND GLOBALIZATION

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ABSTRACT

Science has become one of the most powerful social institutions of the modern world that defines cultural values, political decisions, the development of technologies, and trends of social change in the world. This review derives classical and modern sociological theories to discuss the role of science in creating authority, institutional legitimacy, and adaptation to a dynamically changing world. Based on the lateral views by Weber, Durkheim, Marx, and Merton, the paper outlines how rationalization and moral regulation, capitalist growth, and normative systems organize scientific practice. Modern methods such as Science and Technology Studies (STS), the Sociology of Scientific Knowledge (SSK), and the Actor-Network Theory build upon this analysis by preempting networks, sociomaterial relations, and cultural embeddedness of scientific knowledge. The review also examines the manner in which scientific institutions are defined and defined by modernity, globalization, digital transformation, and new technologies like artificial intelligence. Public trust, inequalities in the world, ethical governance, and cultural diversity are issues that are explored in evaluating the problems that science encounters in the interconnected world. Finally, the paper advocates the idea of a reflexive, inclusive, and value-minded scientific culture that can meet the needs of society, as well as preserve the key position in the contemporary and global systems.

KEYWORDS: Science as a Social Institution; Sociological Theory; Modernity; Globalization; Digital Transformation; Artificial Intelligence; Scientific Culture; Ethics and Human Values.

1. INTRODUCTION

In modern societies, science is at the center stage, and it is a fact that it not only acts as the source of knowledge, but it is also a strong social institution, which influences cultural values, policy making, technological advancement, and world perception. It has an impact on all political, economic, and cultural spheres, which makes it a strong cornerstone of modernity and globalization.

The sociological understanding of science is thus critical to understanding the nature of the institutional aspects of science, the systems of power, and the significance of science in the twenty-first century. Theories in sociology have been discussing the incorporation of scientific practices in the social norms, cultural expectations, and institutional arrangements into the wider debates on social change, rationalization, and transformation of human societies [1], [2].

The role of science in society has become even more complex in recent global changes, such as the fast pace of digitalization, the popularity of artificial intelligence (AI), the increased misinformation, and the process of globalization itself. With new speed, scientific knowledge crosses borders, affecting the climate policy, population health communication, economic planning, and online cultural practices [3].

Meanwhile, belief in scientific authority has turned into a contentious landscape, which is conditioned by the political lines, cultural discourses, and the distribution of information across digital ecosystems. These trends have brought about the necessity to reanalyze sociological theories in order to gain a more enhanced insight into how science is evolving, how it is legitimizing itself, and how it is negotiating its authority in an age of technological acceleration and international interdependence [4].

Further, the current discourse has highlighted that science is not independent of culture, but it constantly interacts with it. The digital era has created new forms of scientific communication, collaborative forms of research, and data-driven forms, which transform the way scientific institutions operate.

The changes provoke the consideration of the ethical standards of the technological innovation, the role of science in relation to society, and the inclusiveness of the scientific networks around the world [5].

With scientific practices extended to other domains, like the preservation of cultural heritage, archaeology, and digital education, their social and cultural consequences are even more acute, which once again proves the interdisciplinary applicability of the sociological investigation [6].

Considering these changes on the global and digital plane, this review seeks to combine the classics and modern sociological understandings to describe the changing position of science as a social institution. It contextualizes the practice of science into the contexts of larger forces of modernity, globalization, ethics, and digital culture and deals with the ways scientific power is produced, reproduced, and played out in the world today.

The review adds a solid perception of the institutional identity and cultural value of science in the contemporary world by positioning theoretical innovations and arising social trends [7].

2. FOUNDATIONS: CONCEPTUALIZING SCIENCE AS A SOCIAL INSTITUTION

2.1. Understanding Social Institutions in Sociological Theory

Social institutions refer to the stable forms of social order that regulate the behavior, stabilize expectations, and arrange the life of a group. Classical sociology considers institutions to be one of how societies reproduce norms, values, and authority structures in the course of time.

The major pillars of social organization are institutions of law, religion, family, education, and economy, which provide normative frameworks of human action and social solidarity [8]. The same thing happens to science: it contains formal and informal regulations, establishes knowledge hierarchies, and authenticates specific knowledge.

Institutions do not just control behavior, but make meaning.

They develop mutual cognitive constructs that assist societies in making sense of reality. This interpretive aspect is critical as we think of the role of science in creating its own truth, which is what is real, what is being considered as valid knowledge, and how the collective beliefs are formed in the societies of the modern world [9].

Science is thereby more than a technical business- it is an institution of culture itself, at the center of social imagination, political choice, and moral reasoning.

2.2. Historical Emergence of Science as a Modern Institution

The early modern period marked the emergence of science as scientific societies, academies, and universities emerged as a source of institutionalization of science. The Scientific Revolution in the seventeenth century presented science as a procedurally structured enterprise that is based on the empirical enquiring process, repeatability, and logical exposition [10]. Science, over time, had become an institution that was professionalized in terms of laboratories, peer review, funding, and standardized methods.

The nineteenth and twentieth centuries have been marked by the rapid growth of scientific institutions in the society of industrialization. The emergence of new professional fields, government funding of research, and institutionalization of science into economic and military systems established the authority and social legitimacy of science.

At the end of the twentieth century, science had become a globalized organization, linked via transnational and multinational research initiatives and global policies [11]. These shifts highlight the way science shifted from individual interest inquiry to become institutionalized to regulate knowledge creation, verification, distribution, and social use.

2.3. Normative Structures and Cultural Foundations of Science

The normative structures of scientific practice determine the internal culture and epistemic norms of scientific practice.

Objectivity, skepticism, communal share of knowledge, and verification are highly ingrained values in scientific institutions. These standards provide not only the rigor of methods but also social confidence in the results of science [12]. Besides epistemic norms, cultural values in scientific circles, including meritocracy, peer recognition, and collaborative ethos, are essential to ensuring the stability of institutions.

Science is symbolic as well. It offers the cultural power of determining what is actually real, evidenced, or rational, which shapes the discourse in society and the direction of state policies. In this regard, science is both a system of knowledge and an institution of culture, which defines how society views the truth and progress [13]. This dual role is a key aspect of science that needs to be understood to analyze science as a fundamental pillar of contemporary social order.

2.4. Structural Components of Science as an Institution

The scientific institution is made up of interrelated factors that control activities, impose standardization, and confer legitimacy. These include:

- Institutional actors: universities, research labs, academies, funding agencies, journals.
- Normative systems: peer review, ethical guidelines, methodological standards.
- Authority structures: expertise hierarchies, disciplinary boundaries, credentialing systems.
- Material infrastructures: laboratories, instruments, digital data platforms.
- Cultural-symbolic systems: scientific credibility, public trust, epistemic prestige.

These are the elements that unite to make science a self-regulating and stable institution that is integrated into the societal and world systems [14]. The nature of science, as outlined in Table 1, accentuates the main characteristics of the great social institutions, which support the centrality of science in organizing contemporary social life.

Table 1: Key Characteristics of Social Institutions and Their Application to Science.

Characteristic of Social Institutions	Application to Science
Normative Frameworks	Scientific norms (objectivity, skepticism, verification) guide practice.
Shared Cultural Values	Scientific culture emphasizes collaboration, meritocracy, and evidence.
Structured Authority	Expertise and credentialing establish hierarchical roles.
Organizational Stability	Universities, academies, and labs provide institutional continuity.
Rule-Governed Behavior	Peer review, methodological rules, and ethical protocols.
Social Legitimacy	Science holds cultural authority and public trust in modern societies.

2.5. Classical and Contemporary Sociological Theories Of Science

The concept of science as a social institution necessitates an analysis of the key sociological theories that have influenced the academic explanations of scientific practice.

Classical theorists paid attention to the role of science in the larger processes of modernization, rationalization, and social order, whereas contemporary strategies have shifted to the study of knowledge production, networks, power relations, and sociomaterial practices.

This part of the paper examines the classical and contemporary traditions in an attempt to demonstrate how the idea of science has changed in the formulation of social theory.

2.6. Classical Sociological Perspectives on Science

2.6.1. Max Weber: Rationalization and the Ethic of Scientific Inquiry

Science is a factor that was established by Max Weber as being important in the rationalization of Western society.

He held that scientific thinking, which is calculable, predictable, and pursues knowledge in a systematic manner, was an example of the modern transformation to systematic rational order [15]. Weber considered scientific activity as determined by a vocational ethic, discipline, and a sense of disenchantment, in which empirical explanation substitutes myth and metaphysics.

The analysis by Weber identifies the importance of science as a source of authority in the culture by the rigor of its methodology and the bureaucracy that determines legitimacy in contemporary societies.

2.6.2. Émile Durkheim: Collective Representations and Moral Authority

Durkheim viewed science as a system of collective representations, which is a reflection of the moral and cognitive basis of social life. He claimed that scientific notions are a result of common social categories and, therefore, have a collective nature [16].

Science thus helps in creating social cohesion, enabling societies to have standard frameworks according to which they define reality. The importance of moral order, as brought forth by Durkheim, highlights the importance of science in forming the beliefs and normative expectations of the masses.

2.6.3. Karl Marx: Science, Capitalism, and Material Relations

Marx related scientific advancement to the logic of capitalistic production as he stressed technological knowledge leading to the productivity of labor and the economy. In this perspective, science is hidden in material relations of power and struggle of classes [17]. The view attracts interest to the political-economic contexts that influence the priorities of science, financial resources, and use.

2.6.4. Robert K. Merton: The Normative Structure of Science (CUDOS)

The powerful theory by Merton was able to identify a group of institutional norms-Communalism, Universalism, Disinterestedness, Organized Skepticism, which govern scientific behavior and uphold the credibility of scientific knowledge [18].

His functionalist theory placed science in a self-correcting norm-regulated institution focused on the general promotion of knowledge.

Despite the fact that it is a controversial topic nowadays, the CUDOS framework is still the basis for comprehending the norms of science and institutional ethics.

2.7. Contemporary Sociological Approaches

2.7.1. Science and Technology Studies (STS) and Actor–Network Theory (ANT)

The STS scholars oppose the concept of science as objective and situate the social, cultural, and political aspects of knowledge production. It is the argument of Bruno Latour and Michel Callon, of Actor-Network Theory, that scientific facts are a result of networks comprised of human and non-human actors (instruments, technologies, data) [19].

The view redefines science as a moving sociotechnical system in which power is acquired via practices, alliances, and material arrangements.

2.7.2. Sociology of Scientific Knowledge (SSK)

Strong Programme in SSK was formulated by David Bloor, among others, and hypothesizes that the sociological explanations ought to apply to true and false scientific beliefs equally [20].

This method preempts cultural contingency and reflexivity that depict how scientific knowledge is influenced by social interests, values, and historical circumstances.

The main point of SSK is that they have insisted that scientific truths are not airtight boxes but that they have to be produced in social settings.

2.7.3. Institutional and Organizational Sociology of Science

Modern theorists analyze the process of career and partnership structuring, as well as the dissemination of knowledge, in scientific institutions, such as universities, laboratories, and research centres. Peer review, funding systems, publication behaviors, and world networks are organizational processes that affect the production and power of science [21].

From this point of view, the complexity of modern science as an institution, focusing on the governance, competition, and structural inequalities in the production of world knowledge, is emphasized.

Figure 1 shows how structural and normative understandings of science have given way to the modern ones, which focus on networks, practices, and sociomaterial relations.

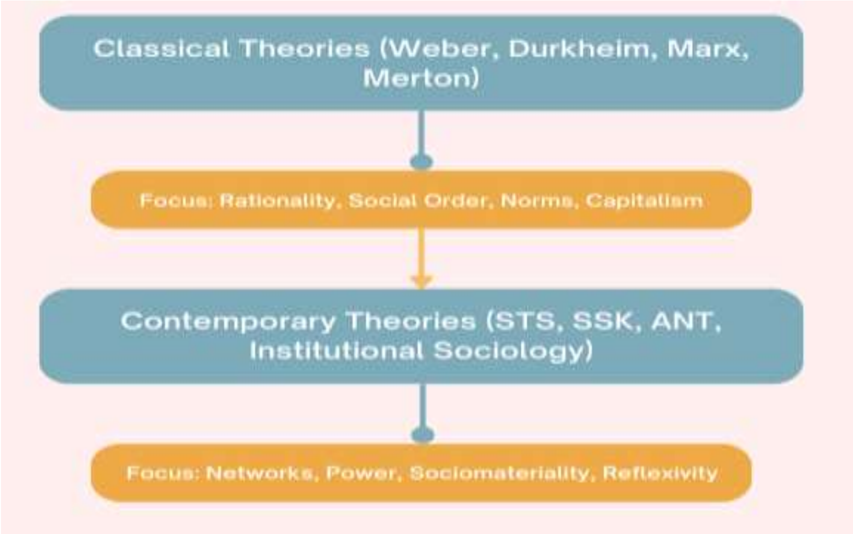

Figure 1: Evolution of Sociological Perspectives on Science

3. SCIENCE, MODERNITY, AND GLOBALIZATION

Science has evolved to be among the most dominant institutions that have been at the forefront in modern societies that are highly interwoven with modernization, technological advancement, and globalization. Its ability to produce new kinds of knowledge, rationalize society, and transform economic systems places science at the centre of global social change. In this section, the author will look at the role of the scientific institutions in modernity, the dissemination of scientific knowledge in the world, and the ways of global inequalities, creating a geography of scientific production.

3.1. Science as a Foundation of Modernity

The introduction of science as an institutionalized knowledge went hand in hand with the development of modernity. Contemporary cultures are characterized by the focus on rationalization, secularization, and systematic structure, which are features that are widely coupled with scientific concepts. Researchers like Anthony Giddens believe that the contemporary social order is based on scientific knowledge, as it allows making predictive control over both natural and social activity. On the same note, Ulrich Beck emphasizes the issue of science in the rise of the so-called risk society in which scientific knowledge is not only the source of defining the new risk but also controlling the new risk, including climate change, pandemics, and technological risks [22].

Science is therefore a source of modernity anchor through the provision of guidelines in the decision-making process, technological innovation, and political governance. It has the power to extend its authority to daily life, to the fields of medicine, education, communication, and industrial production.

3.2. Global Circulation of Knowledge and Transnational Networks

The circulation of scientific knowledge takes place in the world of interconnected networks of scholars, organizations, and technological systems. Global partnerships, online communities of communication, and open science projects have enhanced the transnational flow of information, technologies, and knowledge [23].

Examples of scientific networks that cross national boundaries include transnational networks like CERN, the Human Genome Project, and international climate research collaborations. These networks support common standards, joint publications, and huge data infrastructures, and strengthen the globalization of science. Nevertheless, there is unequal access to scientific resources in the world. The production of knowledge is dominated by countries that have strong research infrastructures, and the developing countries mostly experience obstacles in terms of funding, technology, and training. The differences form scientific peripheries, where few people are involved in science, and asymmetrical knowledge flows are observed [24].

3.3. Science, State Power, and Development in the Global Era

The states use scientific knowledge to aid economic development, national innovation systems, and national policy. Based on investments in biotechnology, artificial intelligence, and military research, science becomes a tool of national competitiveness in the international marketplace [25].

Science, in developing countries, has a dual role: it facilitates modernization and, at the same time, entrenches the reliance on the international bodies of knowledge. Globalization places demands on standardization, alignment of policy, and international benchmarking, usually instigated by scientific institutions and multinational research bodies. In this way, science is adopted as an instrument of integration and differentiation in the international system, defining the way states place themselves in the knowledge economy.

3.4. Global Inequalities and the Politics of Knowledge Production

Although science both advocates universalistic ideals, the scientific landscapes in the world are not equal. Researchers stress the Euro-American hegemony of knowledge, the preeminence of language in publication, and the research monopoly in limited centers around the world [26]. The operations of these dynamics create structural inequalities that restrain equal participation in scientific communities.

The critical discussions point out the necessity of inclusive forms of global science that encompass a variety of cultural epistemologies, the imbalance of power in joint research, and to encourage fair exchange of learning. With the growing globalization of science, the institutional forms of science have to adapt to the cultural diversity and social specifics of the various regions of the world. As shown in Figure 2, science has a role to play as a force of modernity as well as to give coherence to global interconnected systems.

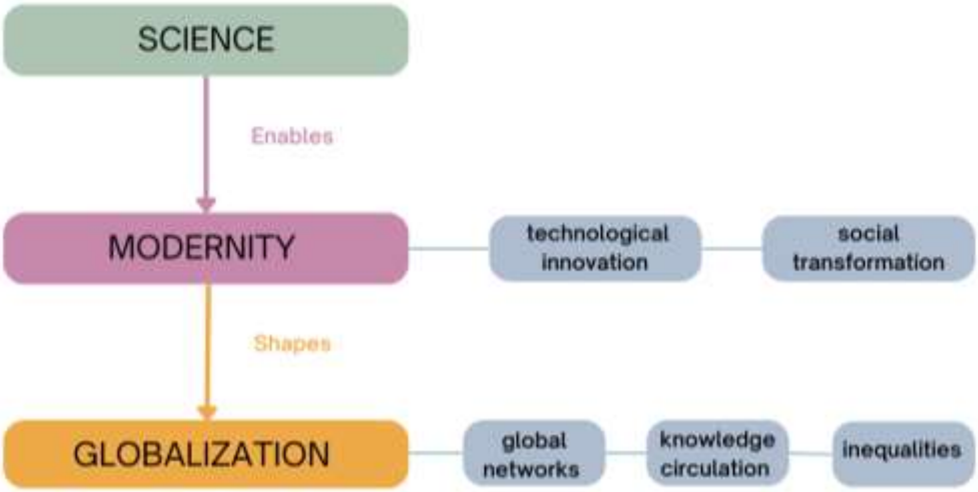

Figure 2: Relationship Between Science, Modernity, and Globalization

4. DIGITAL TRANSFORMATION, AI, AND THE CHANGING CULTURE OF SCIENCE

Digital technologies, specifically, artificial intelligence (AI), big data analytics, and other sophisticated tools of computation, are transforming the structure, culture, and epistemic basis of scientific practice. The move to data-driven research, automated discovery, worldwide online space, and digital communication has changed the ways of scientific work, forms of collaboration, and interaction with the public. In this section, I will discuss how digital transformation reconstructs the structure of scientific institutions, the culture of epistemology, and the interaction between science and society.

4.1. Digitalization and Data-Intensive Scientific Practices

Scientific inquiry has increased significantly in scale, velocity, and complexity as a result of the digital revolution. Huge datasets, energy-saving computers, and computer-aided design technologies allow investigations of new features that cannot be conducted in the conventional laboratory. This change is known as the rise of the so-called data-intensive science or the fourth paradigm, in which finding a solution to a scientific problem has become more reliant on computational analysis and less on a theoretical or experimental approach [27].

The digital infrastructures aid the accessibility to information in the form of online repositories, open-data platforms, and cloud-based laboratories that allow global reach, work, and research practice transparency. Such changes facilitate novel forms of scientific citizenship, in which various actors play a role in research by use of digital technologies, citizen science websites, and crowd-sourced data [28].

4.2. Artificial Intelligence and the Automation of Discovery

The use of AI and machine learning models is growing role in all fields of science. AI systems extend human thought and speed up the process of scientific discovery, even in areas of climate science where predictive modeling is used to supplement human judgment and in genomics, where pattern recognition can be automated to generate hypotheses [29]. This shift provokes the conventional epistemic standards by incorporating algorithmic inference as a valid part of knowledge generation.

Nevertheless, transparency, replicability, and interpretability are also issues with AI. Scholars caution that the use of opaque algorithmic systems may result in the erosion of the scientific values of openness and skepticism, which may end up introducing biases in scientific inferences [30]. The introduction of AI into scientific activity must therefore be ethically governed carefully and reflexively monitored by institutions.

4.3. Digital Culture and the Public Communication of Science

The digital world has transformed the connection between science and society. The social media platforms, online journals, open-access publishing, and digital news ecosystems influence the way of communicating, interpreting, and disseminating scientific information. Online communication increases the knowledge accessibility of scientific communities, engages with the audience more actively, and spreads the results of research faster [31].

Concurrently, it is also possible to note that digital platforms facilitate misinformation, politicized stories, and algorithmically enhanced distrust in scientific authority. The mediation of science by the norms of digital culture is growing, and affects the way various publics make judgments of expertise and risk and scientific consensus [32].

4.4. Digital Tools in Cultural Heritage, Archaeology, and the Arts

The incorporation of digital technologies in culture and arts is a vivid example of the growing cultural importance of science. Archaeological sites, the preservation of existing artifacts, and historical environment visualization are frequently performed with the help of technologies of 3D scanning, virtual reality (VR), GIS mapping, and photogrammetry [33]. These applications affirm the purpose of science in helping to preserve culture, educate, and entertain people. Figure 3 is the summary of the key dimensions, according to which the digital technologies transform the culture of science.

Figure 3: Key Dimensions of Digital Transformation in Science.

4.5. Ethics, Human Values, And Future Directions

Science is not an empty environment; it is highly integrated into moral standards, cultural principles, and social demands. The growth in the size of scientific institutions as they influence the development of the policy of the state, technological advances, and prospects into new technological solutions, the environmental future, and digital infrastructure puts upon them new ethical and moral burdens never experienced before. This sub-part also looks at the ethical aspects of the scientific practice, its connection to the world's human values, and the prospects and issues that await in the future. It is also a reflection on how science should change to become legitimate, inclusive, and socially pertinent in the era of the fast pace of technological change and universal connectedness.

4.6. Ethical Norms and Responsible Scientific Practice

The basis of the legitimacy of scientific institutions is ethical behavior. The standard norms of traditional science put importance on integrity, transparency, accountability, and responsible utilization of knowledge. Modern discussions point to a wider range of ethical issues, such as:

- data privacy,
- responsible innovation,
- fairness in algorithmic systems,
- environmental responsibility,
- equitable research practices.

Researchers state that ethical supervision should be extended not only to the personal wrongdoing but also to the research organization, research design, and institutional prejudices [34]. Ethical framework systems like Responsible Research and Innovation (RRI) make science responsible to the broader community of society.

4.7. Global Human Values and the Cultural Dimensions of Science

The global human values such as dignity, justice, equity, and sustainability are formed by science and are influenced by science. With the dissemination of scientific practices into a variety of cultures, one wonders whose values are directing research priorities, funding priorities, and technological progress. Researchers stress the importance of scientific institutions to interact with different cultural orientations in order not to promote global inequalities and epistemological supremacy [35].

International conventions like the UNESCO guidelines on science and technology ethics are among the laws that emphasize the importance of culture-responsive science that acknowledges human rights, social differences, and community involvement [36]. These frameworks require a broad science culture that incorporates international ethics and the local culture.

4.8. Science, Society, and the Challenge of Public Trust

The digital era has made science even weaker in the eyes of the populace. The relationship between the population and scientific authority is complicated by such problems as misinformation, polarization of political life, and opposition of one expert to another. Trust is not a question of accuracy or communication; it is based on beliefs about being just, transparent, and consistent with the social values [37].

Research indicates that participatory practices, the open practices of science, and co-creation of knowledge can be effective in enhancing the public trust in engaging citizens, policymakers, and marginalized populations [38]. These measures address the disconnect that exists between the scientific institutions and the masses to create more robust types of interaction.

4.9. Emerging Ethical Challenges: AI, Biotechnology, and Planetary Futures

Ethical dilemmas brought by new technologies are those where AI, genomics, neurotechnology, and climate engineering are involved and cannot be easily explained within established paradigms. These challenges include:

- algorithmic bias and surveillance,
- AI decision-making in healthcare and policy,
- genetic editing and reproductive autonomy,
- geoengineering and ecological risks.

These technologies demand progressive ethical leadership that looks ahead and addresses the effects of the technology in the long term and engages various stakeholders. A good ethical model should not only have a way of handling technical risk but also the wider social ramifications, making sure that the scientific advancement does not undermine human rights, social fairness, and environmental sustainability.

4.10. Directions for the Future: Toward Inclusive, Reflexive, and Value-Oriented Science

In the future, scientific organizations will need to change with the changing societal demands and world issues. Future directions include:

- Reflexive science, where researchers critically examine their assumptions, values, and social impacts.
- Inclusive science, integrating diverse cultural perspectives, global epistemologies, and community-based methods.
- Sustainable science, prioritizing planetary well-being and long-term societal resilience.
- Digitally responsible science, balancing innovation with ethical oversight in AI and

data governance.

To find a way out of the uncertainty and build a scientific future that is human-focused, scientists and institutions need to be humble, culturally sensitive, and ethically visionary.

5. CONCLUSION

Science is currently one of the most powerful and vibrant organizations that defines the direction of modern societies. As evidenced in this review, sociological study of science offers crucial information about the way scientific authority, practices, and norms are created, changed, and influenced by more significant cultural and global shifts. Classical sociological theorists like Weber, Durkheim, Marx, and Merton came up with background directives that give the sense of the embeddedness of science in rationalization, moral regulation, economic structures, and institutional norms. These views help to understand the profound historical foundations of the legitimacy of science and its long-term ability to shape the order, coherence, and credibility of contemporary social life. Modern practices, such as STS, SSK, ANT, and organizational sociology, to mention but a few, extend this knowledge by giving emphasis to the relational, networked, and sociomaterial aspects of scientific practice. The relevant theories highlight the growing sophistication of the creation of knowledge in a world that has been characterized by digital infrastructures, international cooperation, and fast-growing technological advances. This review has presented the role of science as both an initiator of social change and an outcome of various cultural, political, and economic pressures in discussing the issues of modernity and globalization. The digital technologies (AI, big data, open science platforms, etc.) keep transforming the culture of science, its interactions with people, and epistemological standards, creating both opportunities and challenges. Such developments call into question the new focus on the topic of ethics, global values, and institutional responsibility, in particular, the problem of trust, equity, and sustainability. Finally, it is up to science as a social institution to be made reflexive, inclusive, and responsive to the changing requirements of global societies to shape the future of science. Through the combination of moral vision and scientific development, science can still play a significant role in cultural enrichment, social enhancement, and the development of knowledge by the collective of people in the world that is becoming more interconnected.

REFERENCES

[1] BERNAL, J. D. The Social Function of Science. London: Routledge, 2010.

[2] DURANT, J., EVANS, G., & THOMAS, G. The Public Understanding of Science. Nature, 1992, 356(6365), 491–495.

[3] BRACHT, F., CONCEIÇÃO, G. C., & POLÓNIA, A. Connecting Worlds: Production and Circulation of Knowledge in the First Global Age. Cambridge Scholars Publishing, 2019.

[4] JASANOFF, S. Science and Public Reason. New York: Routledge, 2012.

[5] KITCHIN, R. The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences. London: Sage, 2014.

[6] LATOUR, B. Science in Action: How to Follow Scientists and Engineers Through Society. Harvard University Press, 1987.

[7] SAREWITZ, D. The Rightful Place of Science: Science on a Mission. Issues in science and technology, 2009, 25(4), 89-94.

[8] BERGER, P. L., & LUCKMANN, T. The Social Construction of Reality. In Social theory re-wired (pp. 110-122). Routledge, 2016

[9] GEERTZ, C. The Interpretation of Cultures. New York: Basic Books, 1973.

[10] HENRY, J. The Scientific Revolution and the Origins of Modern Science. Bloomsbury Publishing, 2008.

[11] FRANK, D. J., & MEYER, J. W. The University and the Global Knowledge Society. Stanford University Press, 2020.

[12] LONGINO, H. Science as Social Knowledge: Values and Objectivity in Scientific Inquiry. Princeton University Press, 1990.

[13] SHAPIN, S. A Social History of Truth. Chicago: University of Chicago Press, 1994.

[14] WHITLEY, R. The Intellectual and Social Organization of the Sciences. Oxford University Press, 2000.

[15] BENDIX, R. Max Weber: An Intellectual Portrait. Vol. 2. Psychology Press, 1998.

[16] DURKHEIM, E. The Elementary Forms of Religious Life. Social theory re-wired. Routledge, 2016, 52-67.

[17] ROYLE, C. Dialectics, Nature and the Dialectics of Nature. International Socialism, 2014, 141, 97–118.
[18] MERTON, R. K. The Sociology of Science: Theoretical and Empirical Investigations. Chicago: University of Chicago Press, 1973.
[19] LATOUR, B., & CALLON, M. Mapping the Dynamics of Science and Technology. London: Palgrave Macmillan, 1986.
[20] BLOOR, D. Knowledge and Social Imagery. University of Chicago Press, 1991.
[21] POWELL, W. W., & SNELLMAN, K. The Knowledge Economy. Annual Review of Sociology, 2004, 30, 199–220.
[22] BECK, U. Risk Society: Towards a New Modernity. London: Sage, 1992.
[23] CASTELLS, M. The Rise of the Network Society. John wiley & sons, 2011.
[24] CONNELL, R. Southern Theory: The Global Dynamics of Knowledge in Social Science. Routledge, 2020.
[25] LUNDVALL, B.-Å. National Innovation Systems: Toward a Theory of Innovation and Interactive Learning. London: Pinter, 1992.
[26] HOLDEN, G. Worlding Beyond the West. International Socialism, 2014, 141, 133–140.
[27] HEY, T., TANSLEY, S., & TOLLE, K. The Fourth Paradigm: Data-Intensive Scientific Discovery. Microsoft Research, 2009.
[28] FRANZONI, C., & SAUERMANN, H. Crowd Science: The Organization of Scientific Research in Open Networks. Research Policy, 2014, 43(1), 1–20.
[29] JORDAN, M., & MITCHELL, T. Machine Learning: Trends, Perspectives, and Prospects. Science, 2015, 349(6245), 255–260.
[30] O'NEIL, C. Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. New York: Crown, 2016.
[31] BROSSARD, D., & SCHEUFELE, D. A. Science, New Media, and the Public. Science, 2013, 339(6115), 40–41.
[32] LEWANDOWSKY, S., ECKER, U., & COOK, J. Beyond Misinformation: Understanding and Coping with the "Post-Truth" Era. Journal of Applied Research in Memory and Cognition, 2017, 6, 353–369.
[33] WATRALL, E., & GOLDSTEIN, L. (Eds.). Digital Heritage and Archaeology in Practice: Presentation, Teaching, and Engagement. University Press of Florida, 2022.
[34] DOUGLAS, H. Science, Policy, and the Value-Free Ideal. Pittsburgh: University of Pittsburgh Press, 2009.
[35] HARDING, S. Sciences From Below: Feminisms, Postcolonialities, and Modernities. Duke University Press, 2008.
[36] UNESCO. Recommendation on the Ethics of Artificial Intelligence. Paris: UNESCO Publishing, 2021.
[37] ORESKES, N. Why Trust Science? Princeton University Press, 2019.
[38] IRWIN, A. Citizen Science: A Study of People, Expertise and Sustainable Development. London: Routledge, 1995.