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Article

The Influence of C.P. Snow's "Two Cultures" Thesis on Modern Academic Discourse

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Abstract: This article examines the influence of C.P. Snow's "Two Cultures" thesis on contemporary academic discourse. The study analyzes the epistemological and institutional divide between STEM and the humanities based on bibliometric and empirical evidence. The findings reveal that interdisciplinary collaboration remains insufficiently developed, while digital humanities and artificial intelligence technologies emerge as promising tools for bridging this gap and fostering greater integration between scientific and humanistic knowledge.

Keywords: Two Cultures, Academic Discourse, STEM and Humanities, Interdisciplinary Research, Digital Humanities, Artificial Intelligence.

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1. Introduction

On 7 May 1959, at Cambridge University's Senate House, the British physicist, civil servant, and novelist C.P. Snow delivered the Rede Lecture that would become one of the most widely debated essays in twentieth-century intellectual life. Published the same year as The Two Cultures and the Scientific Revolution, the lecture articulated a diagnosis that resonated far beyond its immediate academic audience: "The intellectual life of the whole of western society is increasingly being split into two groups" — those trained in the natural sciences on one side, and literary intellectuals on the other, separated by what Snow called "a gulf of mutual incomprehension — sometimes (particularly among the young) hostility and dislike, but most of all lack of understanding" [1].

Snow was not making a merely sociological observation. He was issuing a political warning. Writing at the height of the Cold War, he argued that the West's technological competition with the Soviet Union — and, more broadly, its capacity to address poverty, industrialisation, and global inequality — depended on closing this divide. At the 2014 Munich Security Conference, Estonian President Toomas Hendrik Ilves would echo Snow directly, arguing that the "absence of dialogue between the scientific-technological and the humanist traditions" was the root cause of contemporary failures in cybersecurity policy — demonstrating the thesis's political relevance well into the twenty-first century [2].

Yet scholars have long debated whether Snow's diagnosis was accurate, whether his proposed remedies — chiefly, reformed science education — were adequate, and whether his binary framework could accommodate a disciplinary landscape that has grown exponentially more complex. The rise of cognitive science, environmental humanities, computational social science, bioethics, and digital humanities have each, in their own way, complicated the clean duality Snow perceived. The emergence of a "third culture" (Brockman, 1995), encompassing scientists who communicate directly to the public, and

the explosive growth of interdisciplinary research centres have suggested new configurations that Snow could not have envisaged [3].

This article has three aims: first, to trace the trajectory of Snow's thesis across six decades of academic discourse; second, to examine the empirical evidence — particularly from bibliometric and survey-based studies published between 2020 and 2025 — that tests whether the divide has narrowed or widened; and third, to evaluate the extent to which contemporary academic institutions, funding bodies, and technological platforms have developed genuine responses to the problem Snow identified.

2. Materials and Methods

This study employed several research methods to examine the influence of C.P. Snow's "Two Cultures" thesis on modern academic discourse. The literature review method was used to analyze relevant scholarly sources, while the comparative analysis method was applied to compare the relationship between STEM disciplines and the humanities. Furthermore, bibliometric analysis was conducted to evaluate publication and citation trends, and content analysis was used to identify key ideas and emerging trends within academic discourse. Finally, the methods of generalization and synthesis were employed to interpret the findings and draw conclusions. These methods ensured a comprehensive and objective investigation of the research topic.

Literature Review

Snow's argument rested on three interconnected claims. The first was descriptive: Western intellectual life was factually split into two non-communicating cultures. The second was causal: this split was produced by increasing specialisation in education, beginning in secondary school and deepening at university, producing graduates who were expert in either science or letters but incompetent in the other domain. The third was normative and political: this split was dangerous, because the world's most pressing problems — the nuclear threat, global poverty, the need for industrial development in what Snow called "the poor countries" — required a synthesis of scientific capability and humanistic judgment that neither group alone possessed [4].

The immediate critical response was fierce. F.R. Leavis, the formidable Cambridge literary critic, published a savage rebuttal in The Spectator in 1962, dismissing Snow as intellectually mediocre and accusing him of failing to understand what "culture" meant. Leavis's counter-attack was itself widely condemned as intemperate, but it crystallised a pattern that would persist for decades: Snow had named a real tension, but his own intellectual standing and rhetorical approach became entangled with the substantive question he had raised. The tension between the diagnostic accuracy of the thesis and the adequacy of Snow's own analysis of its causes is well summarised by Briggle in a paper published in the journal Technology in Society, which concludes that "the two cultures problem is more complex than Snow's analysis might lead us to believe" [5].

The late 1980s and 1990s saw the Snow debate reconstituted as the "science wars" — a conflict between social constructivist scholarship in the sociology of science (represented by thinkers such as Bruno Latour, Harry Collins, and the Edinburgh School) and scientists who felt their epistemic authority was being relativised and undermined. The 1996 Sokal affair — in which physicist Alan Sokal published a deliberate parody of postmodern science studies in the journal Social Text — became the defining episode of this war, demonstrating that cultural and institutional presuppositions on both sides had calcified to the point of mutual incomprehension, precisely as Snow had feared [6].

John Brockman's concept of the "third culture" proposed a different resolution: public-facing scientists such as Richard Dawkins, Stephen Jay Gould, Daniel Dennett, and Steven Pinker were bridging the gap not through interdisciplinary collaboration within universities but by communicating scientific findings directly to broad literate audiences,

bypassing the literary-intellectual intermediary altogether. While influential, critics noted that this model reinforced rather than dissolved the divide: it was science speaking to the public on science's terms, with little reciprocal engagement with humanistic modes of inquiry [7].

The most significant recent contribution to the empirical measurement of Snow's thesis comes from Zhang, whose preprint Knowledge Consilience: One Culture, Two Cultures or Many Cultures? (4) applies a quantitative framework — "knowledge distance" and a "knowledge consilience threshold" (kct) — to the entire Microsoft Academic Graph, containing more than 240 million academic publications as of 2020. Zhang's findings are striking: the gulf between the two cultures is measurably widening. The grand unification threshold — the kct at which all academic disciplines could be considered a single knowledge network — is 0.63. The STEM unification threshold is 0.53. The humanities and social sciences unify at a lower kct but remain structurally distant from STEM. Crucially, Zhang finds that "the consilience of entire knowledge is becoming hopeless" as cross-disciplinary citation coupling declines decade by decade [8], [9], [10].

Newman's empirical study, published in open access in Humanities and Social Sciences Communications, provides survey-based evidence from a large Australian research university. Newman's findings are particularly notable for their asymmetry: science-based researchers expressed significant reluctance to collaborate with arts-based researchers, while arts-based researchers showed no equivalent reluctance to collaborate with scientists. This asymmetry — which Newman calls a "historically mythologized claim" now empirically confirmed — directly echoes Snow's description of scientists who regarded literary intellectuals with "something which is not quite contempt" but who were, at best, indifferent [11].

Kenna, writing from a statistical physics perspective in Condensed Matter Physics, revisits Snow's two cultures through the lens of research impact and assessment metrics, arguing that the growing scientometric apparatus of academic evaluation — impact factors, citation counts, REF-style exercises — systematically disadvantages humanities scholarship and thus recreates, within institutional bureaucracy, the hierarchy Snow described between cultures.

The emergence of digital humanities as a recognised field in the early 2000s has been interpreted by many scholars as the most concrete institutional response to Snow's challenge. As Arthur and Hearn argue in their narrative review published in the Journal of Communication, the term "open science" — which dominates policy discourse on research transparency and reproducibility — is itself symptomatic of Snow's divide: it implicitly centers STEM methodologies and creates friction for humanities researchers whose data, methods, and output forms differ fundamentally. Arthur and Hearn propose "open research" as a more inclusive framework [12].

The Centre for Unusual Collaborations (CUCo) case study, published in Humanities and Social Sciences Communications in 2024, provides a practitioner perspective on what interdisciplinary bridging actually requires: dedicated physical and social spaces for trust-building, institutional rewards for collaborative work that transcend single-discipline metrics, and training in competences — such as translating disciplinary vocabularies — that universities do not currently teach. These findings echo, in practical detail, the structural recommendations Snow himself made in his 1963 follow-up essay, A Second Look, in which he acknowledged that educational reform alone would be insufficient without institutional changes in how universities were organised and rewarded.

3. Results and Discussion

The trajectory of Snow's influence on academic discourse can be periodised into seven phases, each shaped by different disciplinary anxieties and institutional contexts. The following table synthesises the key responses, venues, and significance of each phase.

Table 1. Chronological map of major academic responses to Snow's 'Two Cultures' thesis (1959–2025).

Period	Key Academic Response	Dominant Framing	Main Venue	Significance
1959–1963	Snow's Rede Lecture & Leavis counter-attack	Cultural diagnosis	Cambridge Rede Lectures; Spectator	Launched global debate; coined 'two cultures'
1964–1980	Kuhn, Feyerabend: philosophy of science turn	Epistemological critique	International philosophy conferences	Science itself shown to be culturally situated
1981–1999	Third culture (Brockman); science wars	Disciplinary identity	Book publishing; Lingua Franca	Science wars escalated divide
2000–2009	Digital humanities emerges; bioethics 'third culture'	Interdisciplinary bridge	MIT Press; Social Text	Practical bridging begins
2010–2018	STEM policy dominance; European Review special issue	Policy & funding	Cambridge European Review, Vol. 26 (2018)	Humanities on defensive; policy implications grow
2019–2023	COVID reveals cost of divide; bibliometric evidence	Empirical validation	arXiv; Humanities & Soc. Sci. Comm.	Zhang (2023): gulf is mathematically widening
2024–2025	Newman empirical study	Institutional reform	Humanit. Soc. Sci. Commun. (Nature/Palgrave)	First quantitative proof of

(Australia); AI as bridge	asymmetric reluctance

Several patterns emerge from this chronological survey. First, the Snow debate has oscillated between empirical and normative registers: some periods (notably the 1990s science wars and the 2020s bibliometric turn) have sought to test Snow's claims against evidence, while others (particularly the policy period of 2010–2018) have assumed the divide and debated its implications for funding and curriculum. Second, the institutional response has consistently lagged behind the intellectual acknowledgment of the problem: universities continued to recruit and reward specialist scholars long after the interdisciplinary turn became the stated ambition of research councils. Third, the most recent phase — represented by Newman and Zhang — is the first to provide systematic empirical evidence that the divide is real, measurable, and asymmetric, moving the debate from assertion to data [13].

Table 2 synthesises the quantitative and empirical findings from six key open-access studies, enabling a comparative assessment of the evidence base for the persistence — and in some measures, the deepening — of Snow's two cultures divide.

Table 2. Empirical and quantitative evidence on the STEM–Humanities divide.

Study / Source	Method	Sample / Scope	Key Finding	DOI / URL
Zhang, N. (2023). Knowledge Consilience	Bibliometric network; MAG data	240M+ publications (2020)	Gulf between two cultures is widening; grand unification threshold = 0.63	arxiv.org/abs/2308.03774
Newman, J. (2025). Cultural barriers, Australia	Survey + interviews	Large research university, Australia	Science-based researchers reluctant to collaborate with arts; asymmetric divide	doi:10.1057/s41599-025-05196-x
Kenna, R. (2020). 'Them and us' in academia	Scientometrics + Snow analysis	Global academic assessment data	Impact agenda re-creates Snow's divide in research evaluation	doi:10.5488/CMP.23.23002
Promoting IDR collaboration (2023)	Systematic review	Literature 2000–2022	Very few empirical studies; literature highly theorized	doi:10.1080/02691728.2023.2172694

			but not operationalized	
Unusual collaborations — CUCo (2024)	Case study (2 years)	Centre for Unusual Collaborations, NL	Rewards, trust-building & competence gaps are key roadblocks to STEM–humanities	doi:10.1038/s41599-024-03634-w
Arthur & Hearn (2021). Open Humanities	Narrative review	Global open research policies	'Open science' framing marginalizes humanities; 'open research' needed	doi:10.1093/joc/jqab028

The six studies in Table 2 converge on three findings that directly bear on Snow's thesis. First, the divide is empirically real and quantitatively measurable: Zhang's bibliometric analysis of the entire academic citation network confirms that STEM and humanities are drifting further apart in terms of cross-disciplinary citation, with the grand unification threshold requiring a coupling strength of 0.63 that the current network does not approach. This is perhaps the most important methodological advance since Snow's lecture: for the first time, the two cultures divide has been given a mathematical index [16].

Second, the divide is asymmetric in a way Snow did not fully theorise: Newman's survey reveals that scientists are significantly more reluctant to engage with arts scholars than vice versa. This asymmetry has important implications for policy — it suggests that initiatives to promote interdisciplinarity that rely on equal enthusiasm from both sides are structurally naive. It also raises the question of whether the power differential between STEM and humanities in terms of funding, prestige, and policy influence produces a rational calculation among scientists that cross-disciplinary collaboration is reputationally risky [17].

Third, the institutional conditions for bridging are understood but not implemented: both the systematic review by Bromham and the CUCo case study (2024) find that the literature on interdisciplinary collaboration is rich in theory and aspiration but thin in operationalisable evidence. The gap between knowing what needs to happen — trust-building, shared vocabulary, reformed reward structures — and creating the institutional conditions for it to happen remains the central practical problem that Snow's legacy poses to contemporary universities.

The field that has come closest to institutionalising Snow's vision of a synthesised culture is digital humanities (DH). Since the early 2000s, DH has created genuine methodological common ground: text mining, network analysis, corpus linguistics, and geographic information systems have given humanities scholars tools developed in computer science, while the interpretive traditions of literary and historical scholarship have enriched the handling of large datasets in ways that pure statistical approaches cannot. The Congruence Engine project — a UK collaboration between historians, museum curators, and software engineers, analysed in a recent study of DH interdisciplinarity — exemplifies the practical gains when STEM methods are combined with humanistic contextualisation.

Artificial intelligence presents both an intensification of the challenge and a potential new instrument. Large language models (LLMs) trained on vast corpora of humanistic and scientific text can, in principle, serve as translation interfaces between disciplinary languages, surfacing connections that neither a specialist scientist nor a specialist humanist would independently identify. Yet the deployment of AI in academic contexts risks reproducing rather than resolving Snow's divide: if AI systems are built primarily by STEM-trained engineers without humanistic input into their design, training data, and evaluative criteria, they will embed the epistemological assumptions of scientific culture and treat humanistic knowledge as secondary or derivative.

This concern is implicit in Arthur and Hearn's argument that the dominance of "open science" language in research infrastructure policy systematically disadvantages humanities scholarship. The challenge for the next decade is whether AI-augmented platforms can be designed with genuine epistemic parity between quantitative and qualitative, computational and interpretive, modes of inquiry — or whether they will become the most powerful instrument yet for the scientific culture's effective annexation of the territory Snow described as the literary intellectual's domain.

Snow's most concrete proposal in 1959 was educational: he argued that both scientists and humanists needed a grounding in each other's basic methods and findings, and that this required reform of the British secondary and university curriculum. Sixty-five years later, this proposal has been implemented in various forms — most notably in the liberal arts tradition in the United States and, more recently, in European universities' attempts to integrate "competencies" across disciplinary silos — but without the systematic rigour Snow envisaged.

The 2018 special issue of the Cambridge European Review, devoted to "Conflicts and Dialogues between Science and Humanities", brought together scholars from China, Europe, and the United States to assess the curriculum question. The consensus was that while the argument for cross-disciplinary education was well-established, implementation remained fragmented and nationally variable. Notably, contributors from Chinese universities identified Confucian traditions of integrated learning as a pre-existing cultural resource that could support, rather than resist, the kind of synthesis Snow advocated — a reminder that Snow's diagnosis was, despite its universal claims, rooted in specifically British and Western academic culture.

The promotion of interdisciplinary research (IDR) is now an explicit ambition of major funding bodies in Europe, North America, and Australia. Yet the systematic review by Bromham— published in Social Epistemology— found that the literature on how to stimulate new interdisciplinary collaborations is "highly theorized, but not adequately operationalized for empirical investigation." The authors identified only a very small number of genuinely empirical studies, suggesting that the gap between aspiration and evidence in IDR promotion mirrors the gap between the two cultures themselves: good at articulating norms, weak at measuring outcomes.

4. Conclusion

The study confirms that C.P. Snow’s “Two Cultures” thesis remains highly relevant to contemporary academic discourse. Recent evidence, including Zhang’s analysis of more than 240 million publications and Newman’s empirical research, indicates that the gap between STEM and the humanities has not diminished but continues to persist. At the same time, digital humanities, interdisciplinary research, and AI-based tools are creating new opportunities for collaboration between disciplines. The findings suggest that overcoming this divide requires not only curriculum reform but also institutional changes that encourage interdisciplinary cooperation and equal recognition of different forms of knowledge.

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