

Pragmatics as an Evolving Research Ecology: A Longitudinal Bibliometric and Science-Mapping Analysis (1939-2025)

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ABSTRACT

This study maps the longitudinal development of pragmatics research as a field of inquiry from 1939 to 2025. Using bibliometric and science-mapping methods, 15,425 Scopus-indexed documents were analyzed through performance indicators, collaboration analysis, and SciMAT-based thematic evolution across four periods. The analysis examined publication growth, country productivity, citation impact, collaboration structure, core publication outlets, and thematic change over time. Results show that pragmatics developed through continuity and diversification. Enduring conceptual lines such as semantics, pragmatics, speech acts, and implicature persisted across periods but were progressively recontextualized within developmental, clinical, cognitive, and digital domains. The field evolved from an initial compact conceptual structure to empirical expansion into communication-disorder and family-centered research, to cognitive-clinical diversification, and, most recently, to an assessment-centered and digitally expanding phase marked by young adults, language test, autism, and interpersonal communication. Research production and citation impact were highly concentrated in the United States and the United Kingdom (accounting for about 38% of the total global production), while Western Europe formed a dense collaborative core. The Journal of Pragmatics emerged as the principal outlet for most leading countries, indicating a centralized publication structure. These findings suggest that pragmatics is a layered and adaptive field, conceptually anchored by classical theoretical concerns, empirically strengthened by developmental and clinical work, cognitively enriched by experimental research, and increasingly extended into digital and AI-mediated communication. The study contributes a longitudinal account of how pragmatics has persisted, specialized, and reorganized over time, while also highlighting continuing asymmetries in global knowledge production.

Keywords: Bibliometric Analysis, Cognitive Pragmatics, Global Research Networks, Pragmatics, Scientometrics, Thematic Evolution.

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INTRODUCTION

Pragmatics has grown from a largely philosophical and linguistic concern with speech acts, implicature, and context into a broad interdisciplinary field spanning cognitive science, clinical research, discourse studies, and digital communication. Yet its development has not been synthesized adequately at the level of both themes and research infrastructures. Existing reviews often focus on selected traditions or short time spans, making it difficult to see how core concepts, emerging domains, publication

structures, and collaboration patterns have developed together across time.

This study addresses that gap through a longitudinal bibliometric and science-mapping analysis of pragmatics research from 1939 to 2025. Using Scopus-indexed data and SciMAT-based thematic evolution, it examines publication growth, citation impact, international collaboration, core publication outlets, and thematic change across four historical periods. Substantively, the study reconstructs how pragmatics moved from a compact conceptual structure to a more differentiated field marked by empirical expansion, cognitive-clinical diversification, and recent assessment-centered and digitally-mediated developments. Methodologically, it demonstrates the value of longitudinal thematic mapping for tracing how themes persist, branch, merge, decline, and re-emerge over time.



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LITERATURE REVIEW

The literature review examines pragmatics as an interdisciplinary field, traces its thematic expansion, and identifies the publication and collaboration structures that frame the present study's problem, gap, and contribution.

Pragmatics as an interdisciplinary field of meaning-in-context

Pragmatics emerged at the intersection of philosophy, linguistics, and anthropology as scholars increasingly examined language as action rather than mere representation. Early work in speech act theory, conversational analysis, and implicature shifted attention to context, intention, and interpretation in communication (Ambrose, 2011). The field achieved clearer disciplinary identity with the institutionalization of pragmatics research in the 1980s, particularly through the International Pragmatics Association, which consolidated inquiry into how meaning is shaped by cognitive, social, and situational factors (Meeuwis and Östman, 2012). Since then, pragmatics has been broadly understood as the study of how speakers select expressions, manage contextual constraints, and produce effects on hearers (Vyatkina and Cunningham, 2015).

Its conceptual foundations remain anchored in a small set of enduring concerns. Austin's and Searle's speech act theory framed utterances as social actions, Grice's cooperative principle and maxims explained how interlocutors derive meanings beyond literal content, and the notion of illocutionary force foregrounded the intended act performed through language (Khan and Bughio, 2012; Leech, 2012). These traditions established pragmatics as a field centrally concerned with meaning-in-context, inference, and communicative action. Yet the field has not remained confined to its philosophical and linguistic origins. Historical pragmatics extended analysis into the diachronic development of communicative norms, while cognitive and experimental approaches brought psychology and neuroscience into the study of pragmatic competence, inferential processing, and nonliteral meaning (Cummings, 2021; Jucker and Taavitsainen, 2025).

Thematic expansion

Over time, pragmatics has undergone substantial thematic expansion. One major reorientation is the rise of interpersonal and social constructionist approaches, which treat meaning and identity as co-constructed in discourse rather than as fixed properties of individuals. This line of work, central to interpersonal pragmatics, has integrated Conversation Analysis, Ethnomethodology, and interactional sociolinguistics, thereby emphasizing how social roles, alignments, and relationships are negotiated through language use (Fina, 2010). Another major development is discourse-pragmatic variation and change, which applies quantitative methods to discourse markers, particles, and related features, extending variationist inquiry beyond

phonology to the study of communicative function and social meaning (Cheshire, 2016).

Pragmatics has also been shaped by broader epistemological movements. The pragmatic turn in cognitive science treats cognition as embodied, action-bound, and context-sensitive, thereby aligning pragmatism with enactivist perspectives on meaning-making as situated and interactive activity (Baggio, 2025). Related work in epistemic pragmatics examines how speaker's express stance, evidentiality, certainty, and belief in discourse (Demyankov, 2025). Across these developments, the field has become increasingly methodologically plural, drawing on discourse analysis, corpus methods, experiments, psychometrics, and mixed-methods designs in ways that reflect broader arguments for paradigmatic flexibility in research (Morgan, 2007).

Recent scholarship further suggests that pragmatics is increasingly organized around cognitive, clinical, and digital frontiers. Experimental pragmatics investigates how interlocutors infer intention, irony, relevance, and other forms of nonliteral meaning, often through psycholinguistic and neuroscientific methods (Gibbs and Colston, 2020; Noveck and Reboul, 2008). Clinical pragmatics has become prominent in speech-language pathology and related fields for understanding and treating pragmatic impairments in autism spectrum disorder, traumatic brain injury, and other conditions (Cummings, 2021; Pennisi, 2019). At the same time, digital communication has expanded pragmatics into multimodal, platform-based, and AI-mediated environments, including online discourse, digital literacy, human-computer interaction, and large language model contexts (Cheema *et al.*, 2023; Hauck *et al.*, 2021; Mao *et al.*, 2025; Padhi *et al.*, 2024; Sykes, 2021).

Knowledge production, publication concentration, and global asymmetries

The development of pragmatics must also be understood within the broader sociology and geography of knowledge production. Scientific fields are shaped not only by ideas, but also by unequal structures of publication, collaboration, and citation. Core-periphery models show that a relatively small set of highly connected countries disproportionately influence global research agendas, visibility, and institutional authority (Gallagher *et al.*, 2021; Zelnio, 2012).

These inequalities are reinforced by the hegemony of English as the dominant language of science and by commercial publishing systems concentrated in large Western firms. Publishing in English enhances international visibility, but it also disadvantages non-native speakers and can marginalize locally grounded or multilingual scholarship (Strauss and Manalo, 2023). Likewise, dominant publishers and high-impact journals often function as gatekeeping infrastructures that shape what becomes visible, citable, and internationally legitimate (Tavosi and Ahmadabadi,

2024; Zhao, 2005). International collaboration may also reproduce uneven collaboration patterns, with Northern partners more often positioned as agenda-setting actors and interpreters, while scholars from the Global South remain constrained to peripheral roles (Masaka, 2017; Oldac *et al.*, 2024).

Problem, gap, and contribution of the present study

Bibliometric and meta-research studies in linguistics and adjacent fields have demonstrated the value of mapping thematic development, methodological change, and intellectual structure. In discourse studies, bibliometric analyses have documented the rise of critical discourse analysis, appraisal theory, multimodality, corpus-assisted analysis, and digital discourse (Huan and Guan, 2020; Wang *et al.*, 2022). Related work in sociolinguistics and applied linguistics has likewise shown thematic diversification around identity, multilingualism, technology, and methodological plurality (Kartal and Yeşilyurt, 2024; Perez-de-Arriluzea-Madariaga, 2025).

However, three gaps remain. First, much of the existing literature is subfield-bound: reviews typically focus on discourse studies, sociolinguistics, applied linguistics, or clinical pragmatics, rather than examining pragmatics itself as a longitudinally evolving field. Second, most bibliometric studies remain largely static, offering aggregate snapshots of co-citation, co-word, or publication performance rather than tracing how themes persist, split, merge, and reorganize across historical periods. Third, existing mappings seldom integrate thematic development with publication concentration, international collaboration, and the global inequalities that shape knowledge production. As a result, the historical development of pragmatics remains insufficiently synthesized at the level of both ideas and infrastructures.

This study addresses the gap by conducting a longitudinal bibliometric and science-mapping analysis of pragmatics research from 1939 to 2025. Using SciMAT, it traces thematic evolution across multiple periods and combines this with performance indicators, outlet analysis, and co-authorship mapping. In substantive terms, the study reconstructs how pragmatics moved from a compact conceptual structure to a more differentiated ecology marked by empirical expansion, cognitive-clinical diversification, and recent assessment-centered and digital-computational developments. Methodologically, it contributes a longitudinal thematic mapping approach that goes beyond static bibliometric description by showing how themes persist, branch, merge, decline, and re-emerge across time. In doing so, it provides a data-driven historiography of pragmatics and a clearer account of how conceptual continuity, thematic specialization, and global knowledge structures co-evolve within the field.

Research Objectives

This study aims to provide a comprehensive understanding of how the field of pragmatics has evolved over the past nine decades. It seeks to trace its intellectual growth, thematic transformations, and global research dynamics through a longitudinal bibliometric and science-mapping analysis. Guided by this overarching purpose, the study pursues the following specific objectives:

Research Performance and Collaboration

- To analyze global publication and citation trends in pragmatics from 1939 to 2025.
- To explore patterns of international collaboration and authorship within the field.

Thematic Evolution and Intellectual Dynamics

- To examine the thematic evolution of pragmatics across four historical periods using SciMAT.
- To visualize conceptual linkages, continuities, and shifts among key research themes.
- To identify emerging and frontier areas shaping current pragmatics research.
- To contribute a data-informed historiography of pragmatics as a basis for understanding its longitudinal development.

Conceptual Framework

This study conceptualizes pragmatics as an evolving research ecology shaped by the continual interaction of ideas, methods, and global knowledge infrastructures. The framework integrates four interlinked lenses, historical-philosophical, thematic-paradigmatic, sociological-geographical, and frontier integration, to explain how the field's intellectual structure has evolved across time and space. The historical-philosophical lens situates pragmatics within its foundational constructs (Leech, 2012) and its philosophical roots in American pragmatism, which links meaning to practical action (Moszkowicz, 2013). The thematic-paradigmatic lens explains how these core concepts have been recontextualized through successive shifts, mainly the social-constructionist movement (Fina, 2010), the rise of discourse-pragmatic variation (Cheshire, 2016), the cognitive and enactivist turns that view meaning as embodied and situated (Baggio, 2025), and the emergence of epistemic pragmatics that examines knowledge and evidentiality in discourse (Demyankov, 2025).

The sociological and geographical lens acknowledges that pragmatics evolves within a stratified global research order characterized by core-periphery hierarchies (Wallerstein, 2013; Zelnio, 2012). English-language dominance and corporate

publishing structures (Strauss and Manalo, 2023; Tavosi and Ahmadabadi, 2024) sustain knowledge production asymmetries, even as Asian and multilingual contexts increasingly contribute to global scholarship (Chi and Van Orden, 2023; Krishna *et al.*, 2025). Finally, the frontier integration lens captures the convergence of cognitive, clinical, and digital pragmatics-domains where neurocognitive modeling (Bosco and Gabbatore, 2025), clinical interventions (Cummings, 2021; Pennisi, 2019), and multimodal or AI-mediated discourse (Cheema *et al.*, 2023; Sykes, 2021) redefine the boundaries of meaning-making.

METHODOLOGY

This study employed a bibliometric and science-mapping design to analyze the longitudinal evolution of pragmatics research from 1939 to 2025. Bibliometric analysis provides a systematic approach to mapping and quantifying the patterns of scholarly production, influence, and collaboration within a discipline (Bagheri *et al.*, 2023; Van Raan, 2003). Beyond measuring productivity, it enables the identification of intellectual structures and the thematic trajectories that define a field's development over time (Cobo *et al.*, 2018).

Data Retrieval and Screening

The dataset was sourced exclusively from the Scopus database, selected for its comprehensive coverage of peer-reviewed documents (Visser *et al.*, 2021). Scopus has been validated in prior studies as a reliable repository for bibliometric analyses due to its broad coverage, quality control, and dependable metadata (Zhu and Liu, 2020). The document retrieval was conducted on March 3, 2026 using the following search string:

TITLE-ABS-KEY ("linguistic pragmatics" OR pragmatics OR "interactional pragmatics" OR "discourse pragmatics")

The initial query returned 17,697 documents. The dataset was restricted to 1939-2025, yielding 17,532 documents. The study uses researcher-defined time slices (Period 1: 1939-2000; Period 2: 2001-2010; Period 3: 2011-2019; Period 4: 2020-2025) rather than emergent phases, and interpretations are limited to within-period thematic structure and between-period continuity based on overlap analysis. The partitions were set to balance document volume and preserve temporal resolution during the steepest growth (2020-2025), and were checked against between-period patterns in keyword frequency and network stability.

After applying a language filter to include only English-language publications, 15,425 documents remained for analysis. No filters were applied with respect to publication stage, document type, or source type to preserve the diversity of scholarly contributions. The retrieved corpus shows a clear long-term expansion of publications, increasing from relatively few documents in the early 1990s to more than 1,000 documents by the end of the study period, with especially rapid growth from the mid-2000s onward (Figure 1). In terms of disciplinary distribution, the dataset was dominated by Social Sciences (40%) and Arts and Humanities (38%).

Analytical Tool and Workflow

The mapping and longitudinal analyses were conducted using SciMAT (Science Mapping Analysis Tool) (Cobo *et al.*, 2012), following the standardized workflow (Anito, 2026) illustrated in Figure 2. The software integrates co-word analysis, strategic diagram construction, and thematic evolution mapping to identify conceptual structures and trace their development across defined periods.

Longitudinal co-word analysis in SciMAT was selected because the research questions target the evolving thematic structure of a rapidly expanding literature, not the outcomes of individual

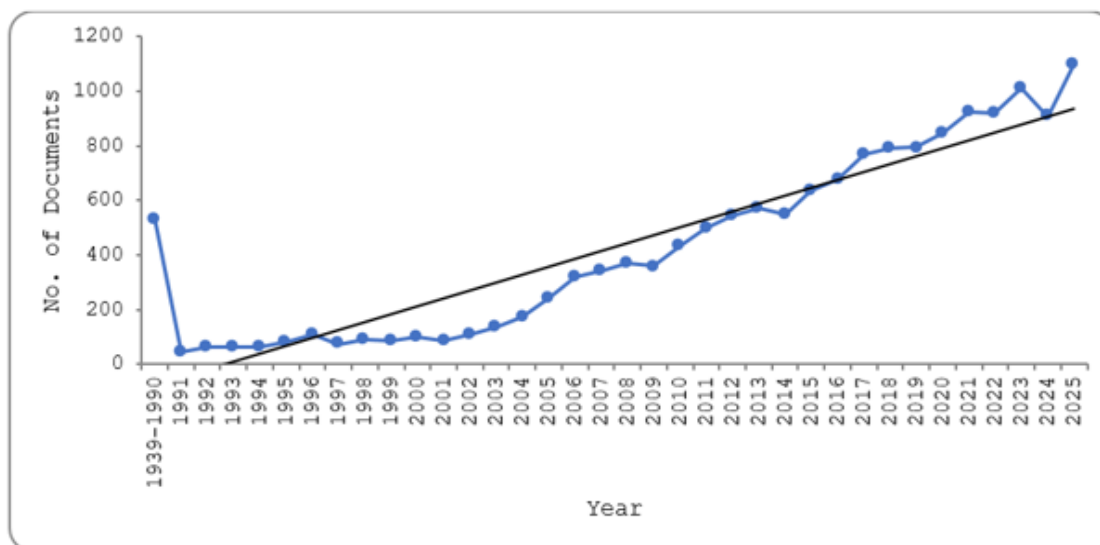


Figure 1: Annual Scientific Production in Pragmatics Research (1939-2025).



Figure 2: Analytical Workflow of the SciMAT Co-Word and Longitudinal Mapping Process.

studies. Co-word mapping treats keywords as field-level signals of conceptual focus and association, enabling identification of dominant, peripheral, and emerging thematic clusters and comparison of their positions over time via centrality-density strategic diagrams and evolution/overlap maps. Analytic credibility was supported through a transparent, replicable workflow (Figure 2). Between-period robustness was assessed using keyword frequency adequacy and network stability checks and by testing whether core thematic trajectories remained substantively stable under alternative temporal aggregations. External validity is bounded to the retrieved Scopus corpus and to thematic structure inferred from keyword co-occurrence. It does not imply prevalence estimates across all pragmatics literature or causal claims about researcher behavior. Accordingly, findings are interpreted as descriptive and analytic evidence of shifting topical emphases and associations, with implications framed as field-level tendencies rather than universal patterns.

Step 0: Word Grouping. Prior to analysis, keyword standardization was conducted using SciMAT's built-in thesaurus functions "Find Similar Words by Plurals" and "Find Similar Words by Distance." A strict Levenshtein distance of 1 was applied to merge only near-identical terms, minimizing semantic distortion.

Step 1: Period Selection. The dataset was divided into four consecutive periods- period 1 covers the years 1939 to 2000 ($n=1,308$), period 2 covers 2001-2010 ($n=2,569$), period 3 covers 2011-2019 ($n=5,833$), and period 4 covers 2020-2025 ($n=5,715$).

Step 2: Unit of Analysis. The unit of analysis was set to words, specifically combining authors' keywords and sources' index keywords to represent both conceptual intention and indexing precision.

Step 3: Data Reduction. To focus on meaningful and recurrent themes, a minimum frequency threshold of three was applied. That is, only keywords appearing in at least three documents were retained for network construction.

Step 4: Kind of Matrix. A co-occurrence matrix was generated to represent conceptual linkages between keywords. This matrix forms the basis for visualizing how terms co-appear within documents, thereby revealing the conceptual architecture of the field.

Step 5: Network Reduction. To improve interpretability, weak connections were filtered out using an edge-value threshold of 3, retaining only the most significant conceptual ties.

Step 6: Normalization. Keyword co-occurrences were normalized using the Association Strength Index (Callon *et al.*, 1983,

1991) which corrects for varying frequencies and ensures that relationships reflect meaningful conceptual proximity rather than raw frequency counts.

Step 7: Clustering Algorithm. Themes were identified using the Simple Centers Algorithm, which groups closely related keywords around core concepts to form thematic clusters.

Step 8: Document Mapper. Documents were automatically assigned to thematic clusters through SciMAT's Core Mapper function, allowing for the identification of the most representative publications for each theme.

Step 9: Quality Measures. To evaluate the significance and maturity of each theme, bibliometric indicators such as the h-index and g-index were computed.

Step 10: Longitudinal Analysis. The thematic evolution across periods was traced using the Association Strength measure for thematic continuity and the Jaccard index for the overlapping map, which visualizes the degree of thematic stability, merging, or divergence over time.

Step 11: Thematic Analysis. Finally, the resulting strategic diagrams, evolution maps, and cluster networks were interpreted to identify motor themes, basic and transversal themes, emerging or declining themes, and niche themes.

The strategic diagrams plot themes along two dimensions: centrality, which measures the degree of interaction of a theme with other themes, and density, which measures the internal development and cohesion of the theme (Callon *et al.*, 1991). Based on their positions in the diagram, themes are classified into four groups:

- **Motor Themes (Q1):** Highly developed and central, driving the field forward.
- **Basic and Transversal Themes (Q4):** Essential and central but underdeveloped.
- **Specialized/Isolated Themes (Q2):** Developed but marginal or isolated.
- **Emerging/Declining Themes (Q3):** Weakly developed and peripheral, either nascent or fading.

RESULTS

This section presents the longitudinal scientometric findings on the evolution of pragmatics research from 1939 to 2025. It outlines global productivity and citation patterns, leading publication outlets, and international collaboration networks, followed by the thematic evolution and strategic mapping of research fronts across four historical periods.

Research Performance and Collaboration

This section addresses objectives 1 and 2 on research performance and collaboration. The results reveal a highly concentrated and uneven global landscape in pragmatics research. As can be gleaned from Table 1, the top ten most productive countries account for nearly three-quarters of all publications, indicating that scholarly activity in the field is dominated by a small group of nations primarily from the Global North.

The United States leads decisively, contributing 3,990 documents or 35% of the top-10 output, and accounting for 117,216 citations, with the highest h-index (146) and the largest shares of Global

Table 1: Top 10 Most Productive Countries in Pragmatics Research (1939-2025).

Sl. No.	Country	Productivity		C	CPD	CD	%CD	h-index	%GSP	%GSC
		f	%							
1.	US	3,990	35%	117,216	29	3,398	85%	146	26%	39%
2.	UK	1,862	16%	56,639	30	1,617	87%	105	12%	19%
3.	Germany	1,207	11%	18,819	16	987	82%	59	8%	6%
4.	Italy	744	7%	9,800	13	550	74%	49	5%	3%
5.	Spain	741	7%	10,527	14	601	81%	42	5%	4%
6.	Australia	614	5%	17,952	29	531	86%	56	4%	6%
7.	China	599	5%	5,410	9	411	69%	34	4%	2%
8.	Canada	568	5%	11,934	21	463	82%	54	4%	4%
9.	France	532	5%	12,305	23	437	82%	50	3%	4%
10.	Netherlands	453	4%	10,159	22	394	87%	46	3%	3%
	P (Top 10)	11,310								
	Global P	15,425								
	Global C	298,062								

Note: f = number of documents in Scopus; % = percentage relative to the top-10 total; C = number of citations; CPD = Citations Per Document; CD = number of cited documents; %CD = percentage of cited documents relative to the country's total documents; h-index = h-index of the retrieved documents; %GSP = percentage of global scientific production; %GSC = percentage of global scientific citations.

Scientific Production (%GSP=26%) and Global Scientific Citations (%GSC=39%). Australia stands out for its strong citation performance relative to output despite contributing only 5% of the top-10 productivity share.

The publication landscape of pragmatics research is highly centralized, with the Journal of Pragmatics emerging as the principal source for 9 of the 10 leading countries and consistently published by Elsevier, with a 2024 CiteScore of 4.6 and a Q1 Scimago ranking. This pattern indicates that a single high-impact journal serves as the main outlet for pragmatics scholarship across the dominant national contributors, reinforcing Elsevier's strong position in the field's publication structure. Italy appears as the lone exception, where Perspectives in Pragmatics, Philosophy and Psychology published by Springer Nature, appears as the major source, although its much lower CiteScore (0.3) and non-Q1 status suggest a comparatively limited level of visibility and influence.

The international co-authorship network displays a pronounced core-periphery structure in pragmatics research, with the United States as the largest and most central node (Figure 3). It is strongly connected to the United Kingdom, Spain, Australia, Japan, Canada, and Italy, confirming its role as the main integrative hub of the field. The United Kingdom also serves as a major connector within the network, while Spain, Australia, Belgium, Italy, and the Netherlands function as important secondary nodes in the dense Anglophone-European core. Asian countries, including Japan, China, Taiwan, South Korea, and Indonesia, are visibly present but remain less central and more diffusely connected. More weakly linked countries such as Kenya, and Macao

occupy peripheral positions, indicating a geographically uneven collaboration structure.

Thematic Evolution and Intellectual Dynamics

This section addresses objectives 3 to 6 by examining the thematic evolution of pragmatics research across four periods and tracing how core and emerging themes persisted, shifted, and reconfigured over time. Table 2 serves as the quantitative reference for this discussion, reporting each theme's centrality, density, and document count across periods to show its relative prominence, cohesion, and position in the thematic structure.

From Theoretical Foundations to Empirical Expansion (1939-2010)

Across the first two periods, pragmatics research shifts from a relatively compact conceptual domain to a broader and more applied research ecology. In Period 1 (1939-2000), the field is organized around five clusters- FEMALE, CHILD, HUMAN, PRAGMATICS, and SEMANTICS. Although HUMAN is the largest cluster, PRAGMATICS is the most internally developed and among the most central, indicating that the early field retained a strong conceptual core centered on meaning, discourse, inference, presupposition, and style. At the same time, the prominence of HUMAN, FEMALE, and CHILD suggests that pragmatics was already extending beyond purely philosophical and linguistic concerns into human-centered and developmental inquiry (Figure 4).

By Period 2 (2001-2010), the structure becomes more differentiated and empirically oriented, expanding to nine major clusters: PARENTS, COMMUNICATION-DISORDER, MALE,

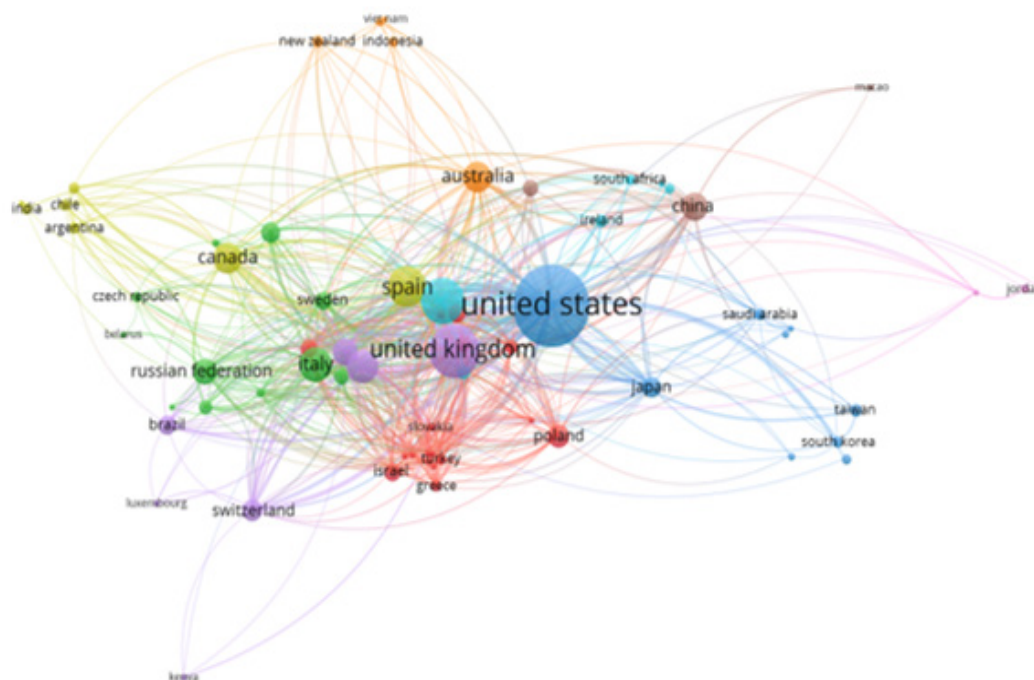


Figure 3: International Co-authorship Network in Pragmatics Research.

HUMAN, INTERPERSONAL-COMMUNICATION, ARTICLE, LANGUAGE, SEMANTICS, and PRAGMATICS. The field's center of gravity shifts away from the conceptual core of Period 1 toward clinical-developmental and social-communication concerns. This is most evident in the rise of PARENTS as the strongest motor theme, alongside MALE and COMMUNICATION-DISORDER.

This transition can be interpreted as a movement from conceptual consolidation to empirical expansion. In Period 1, pragmatics functions as a relatively coherent intellectual nucleus linked to semantics and discourse-oriented inquiry. In Period 2, however, the field is increasingly organized around assessment, disorder, family involvement, interpersonal communication, and demographic profiling, particularly in relation to autism, language impairment, communication disorder, and child development.

From Empirical Application to Cognitive Integration (2001-2019)

The transition from Period 2 to Period 3 shows that pragmatics research not only expanded in volume but also became more internally differentiated, cognitively specialized, and behaviorally grounded. The Period 2 configuration suggests that the 2000s were dominated by a clinical-developmental and family-centered research ecology, in which pragmatics was increasingly operationalized through caregiver-report instruments, language impairment studies, autism-related research, and communication-disorder assessment. Although PRAGMATICS and SEMANTICS remained visible, both were structurally peripheral, indicating that the field's momentum was driven more by adjacent applied domains than by the consolidation of pragmatics as a labeled theoretical core (Figure 5).

Table 2: Strategic Diagram Metrics of Thematic Clusters Across the Four Periods.

Period	Theme	Centrality	Centrality Range	Density	Density Range	Documents Count
Period 1 (1939-2000)	Female	5.16	1	2.54	0.8	82
	Child	4.28	0.6	1.42	0.6	39
	Human	3.65	0.4	0.74	0.2	129
	Pragmatics	4.43	0.8	2.79	1	47
	Semantics	3.52	0.2	1.06	0.4	83
Period 2 (2001-2010)	Parents	9.09	1	3.87	1	83
	Communication-Disorder	7.81	0.78	1.26	0.89	62
	Male	7.87	0.89	0.86	0.78	156
	Human	2.94	0.33	0.3	0.44	45
	Interpersonal-Communication	4.78	0.56	0.48	0.67	55
	Article	5.19	0.67	0.27	0.33	90
	Language	4.42	0.44	0.39	0.56	101
	Semantics	1.15	0.22	0.2	0.22	81
	Pragmatics	1.07	0.11	0.13	0.11	44
Period 3 (2011-2019)	Social-Communication-Disorder	4.66	0.86	1.79	1	69
	Child	3.88	0.71	0.66	0.79	96
	Young-Adult	4.51	0.79	0.59	0.71	124
	Social-Behavior	4.68	0.93	0.67	0.86	81
	Article	2.94	0.64	0.24	0.5	96
	Male	5.79	1	0.46	0.64	347
	Language	2.81	0.57	0.67	0.93	77
	Communication	1.44	0.36	0.15	0.21	48
	Speech-Acts	0.28	0.07	0.17	0.29	52
	Semantics	0.94	0.29	0.12	0.14	106
	Linguistics	2.58	0.5	0.2	0.43	83
	Pragmatics	1.54	0.43	0.05	0.07	55
	Scalar-Implicature	0.79	0.21	0.29	0.57	26
	Implicature	0.54	0.14	0.19	0.36	24

Period	Theme	Centrality	Centrality Range	Density	Density Range	Documents Count
Period 4 (2020-2025)	Language-Test	3.98	0.86	1.22	1	75
	Autism	3.25	0.79	0.71	0.86	81
	Young-Adult	5.37	1	0.88	0.93	298
	Child	2.48	0.5	0.33	0.71	56
	Article	2.59	0.64	0.24	0.36	81
	Interpersonal-Communication	3.98	0.93	0.36	0.79	152
	Human	3.03	0.71	0.22	0.29	97
	Language	2.49	0.57	0.27	0.57	55
	Theory-Of-Mind	1.62	0.43	0.24	0.43	42
	Semantics	0.34	0.14	0.26	0.5	98
	Linguistics	1.04	0.36	0.11	0.14	45
	Speech-Acts	0.57	0.21	0.14	0.21	76
	Pragmatics	0.84	0.29	0.05	0.07	76
	Implicature	0.19	0.07	0.3	0.64	37

By Period 3, this applied orientation remains, but the field becomes more pluralized and specialized. The map expands to 13 clusters, including major empirical themes such as SOCIAL-COMMUNICATION-DISORDER, CHILD, YOUNG-ADULT, SOCIAL-BEHAVIOR, MALE, LANGUAGE, and COMMUNICATION. This increase in thematic clusters reflects a shift from broad applied expansion to greater internal differentiation.

This shift suggests that pragmatics moved from a broad parent-and disorder-centered applied ecology to a more sharply defined clinical-behavioral and developmental-pragmatic configuration. The prominence of SOCIAL-COMMUNICATION-DISORDER, SOCIAL-BEHAVIOR, CHILD, and YOUNG-ADULT indicates that research in the 2010s became more explicitly organized around observable communicative functioning, social behavior, intervention outcomes, developmental profiles, and age-stratified populations.

Period 3 also marks a significant move toward cognitive and inferential specialization. In Period 2, topics such as implicature, quantification, and Gricean reasoning were present but embedded within broader clusters. In Period 3, these emerge as distinct thematic formations, particularly SCALAR-IMPLICATURE (26 core documents) and IMPLICATURE (24 core documents). Period 3 therefore overlays the applied orientation of Period 2 with a stronger cognitive-experimental layer.

Another notable feature of this transition is the reconfiguration of population-based clusters. MALE, already the largest cluster in Period 2, expands sharply in Period 3, while YOUNG-ADULT and CHILD also become substantial. This pattern points to increased use of age- and population-specific sampling frameworks, especially in clinical and psycholinguistic research. In this sense,

the transition reflects not only thematic differentiation but also a broadening of the field’s empirical base across developmental stages and research designs.

The position of PRAGMATICS itself remains revealing. In Period 2, PRAGMATICS was structurally weak, reflecting the field’s diffusion into applied domains. In Period 3, it becomes more visible but remains weakly consolidated. This suggests that even as the field diversified and incorporated more cognitive and inferential strands, development still occurred largely through specialized subdomains rather than through a re-centralization of pragmatics as a unified thematic core.

From Cognitive Integration to the Digital Expansion and Global Diversification (2011-2025)

The transition from Period 3 to Period 4 shows that pragmatics research remained strongly empirical and applied, but its center of gravity shifted from a predominantly clinical-behavioral and social-communication configuration toward a more assessment-driven, age-concentrated, and digitally expanding ecology. Period 3 reflects a phase of cognitive-clinical diversification in which pragmatics became more behaviorally grounded, developmentally structured, and inferentially specialized.

By Period 4 (2020-2025), this diversified structure remains, but the thematic configuration changes in two major ways. First, YOUNG-ADULT becomes the dominant cluster while remaining strongly developed. Second, LANGUAGE-TEST becomes the most internally developed cluster and one of the most central, alongside INTERPERSONAL-COMMUNICATION and AUTISM. Compared with Period 3, Period 4 points to a shift toward measurement, diagnostic instrumentation,

communicative assessment, and research designs centered on young adult samples.

A second major shift is the stronger concentration of research around young adult populations. Although YOUNG-ADULT was already substantial in Period 3, it becomes much more dominant in Period 4. Unlike Period 3, Period 4 is less organized around sex-based demographic indexing and more around age-based participant concentration, especially in studies of communicative performance, nonliteral meaning, interpersonal communication, and test-based assessment (Figure 6).

The clinical-developmental branch remains important but becomes more selectively structured. AUTISM remains a large and well-developed cluster, while CHILD and THEORY-OF-MIND also maintain visible positions. This indicates that developmental and clinical pragmatics remains central and is distributed across more targeted subareas involving autism, pragmatic skills, language testing, developmental language disorder, theory of mind, hearing-related contexts, and child communication assessment.

In Period 3, the appearance of SCALAR-IMPLICATURE and IMPLICATURE signaled a notable moment of cognitive-experimental specialization. In Period 4, IMPLICATURE remains visible but small while SEMANTICS, SPEECH-ACTS, LINGUISTICS, and PRAGMATICS continue to appear as diffuse themes. PRAGMATICS itself again remains weakly consolidated, suggesting that the field's increasing complexity still does not produce recentralization around the label "pragmatics" itself. Rather, growth continues through specialized empirical and conceptual niches.

A notable addition in Period 4 is the stronger visibility of a digital and computational frontier. A closer examination of the cluster network includes terms such as large language models, digital communication, digital discourse, chatbots, conversational agents, and cyberpragmatics. Although these do not yet dominate the strategic diagram as major clusters, their appearance points to a significant expansion of the field's horizon. Recent pragmatics research is increasingly engaging with AI-mediated language use, platform-based discourse, multimodal communication, and computational approaches to meaning and interaction. Compared with Period 3, where cognitive specialization was driven mainly by implicature, scalar inference, and psycholinguistic experimentation, Period 4 extends the field into digital and computational pragmatics.

Thematic Evolution and Intellectual Trajectories in Pragmatics Research (1939-2025)

The evolution map (Figure 7) shows that pragmatics developed through continuity as well as branching diversification across the four periods. SEMANTICS and PRAGMATICS remain the most enduring lines: SEMANTICS persists as a stable intellectual anchor, while PRAGMATICS continues more diffusely, feeding into later specialized themes such as LINGUISTICS, THEORY-OF-MIND, and IMPLICATURE. This pattern suggests that the field retained its conceptual core even as its substantive content became redistributed across increasingly differentiated subdomains (Figure 7).

A second broad trajectory is the movement from early human and demographic descriptors toward more specialized empirical formations in clinical, developmental, behavioral, and

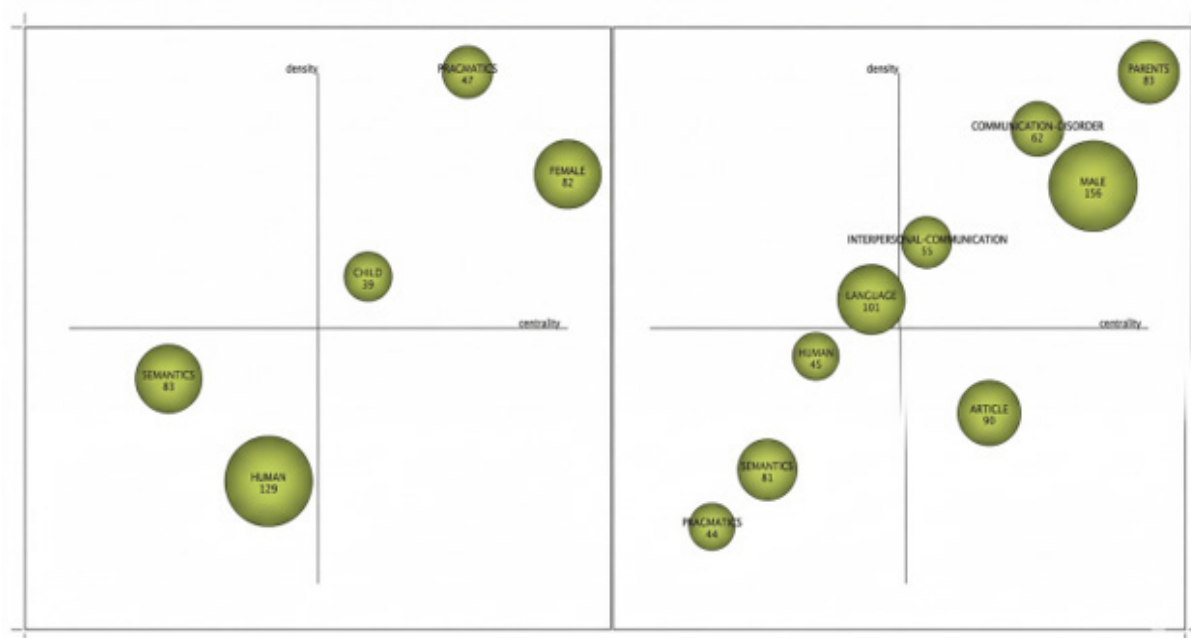


Figure 4: Strategic Diagram of Pragmatics Research Themes from P1: Formative Period (1939-2000) to P2: Empirical Expansion Phase (2001-2010).

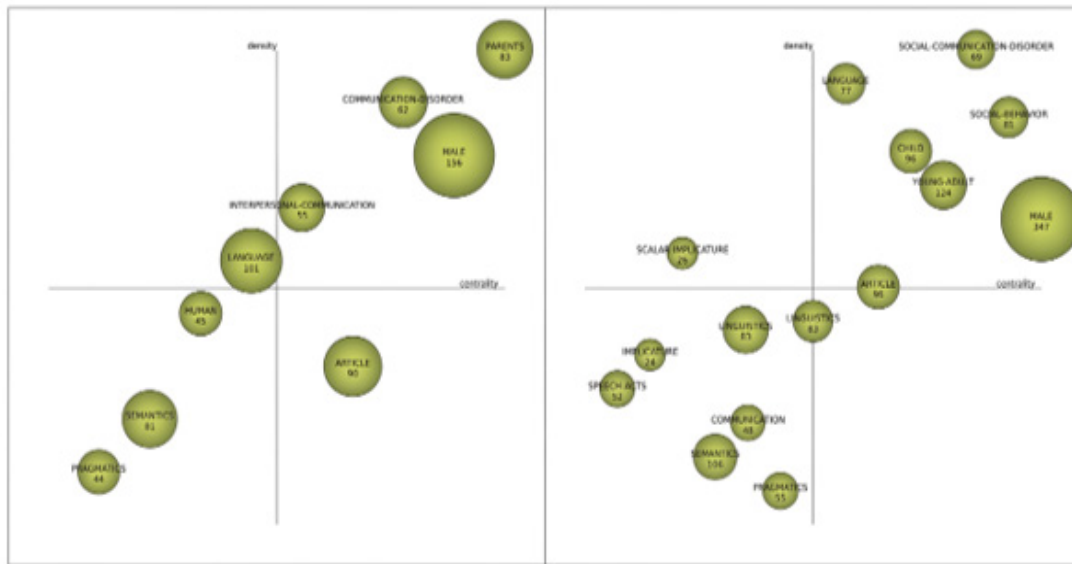


Figure 5: Strategic Diagram of Pragmatics Research Themes from P2: Empirical Expansion Phase (2001-2010) to P3: Cognitive Integration Phase (2011-2019).

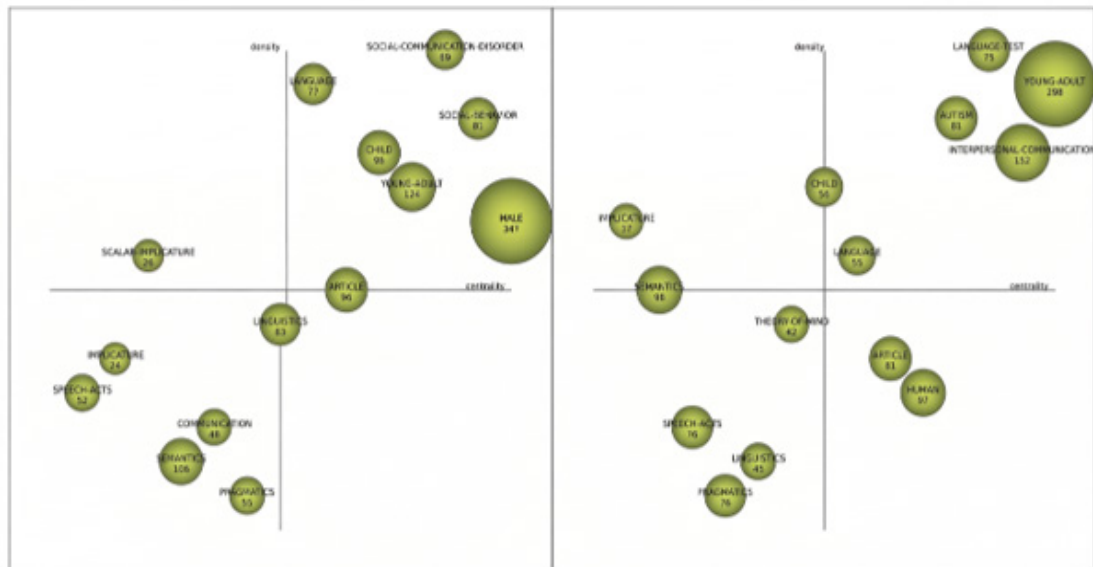


Figure 6: Strategic Diagram of Pragmatics Research Themes from P3: Cognitive Integration Phase (2011-2019) to P4: Digital and Global Turn (2020-2025).

communication-oriented research. Over time, these lines became more clearly organized around social communication, age-based populations, testing, and interactional concerns. At the same time, inferential-cognitive themes gained clearer visibility. The emergence and later consolidation of IMPLICATURE, together with the persistence of SPEECH-ACTS and the appearance of THEORY-OF-MIND, indicate that classical theoretical concerns remained active while being reworked through cognitive and socio-developmental perspectives.

The overlapping map reinforces this interpretation of expansion with partial renewal. The keyword base increased steadily from 241 in Period 1 to 423 in Period 2, 517 in Period 3, and 538 in

Period 4, showing that the field more than doubled its thematic scope across the full period. Because overlap between adjacent periods is only partial, this growth reflects both retention and replacement rather than simple accumulation. Taken together, the evolution and overlapping maps suggest that pragmatics advanced through four broad stages: a compact conceptual phase, an empirical and developmental expansion, a diversification into cognitive-clinical and social-behavioral subfields, and a more recent phase marked by assessment-centered, interactional, and digitally expanding research. Overall, the field evolved not by abandoning its conceptual foundations, but by layering them with increasingly specialized empirical and methodological domains.

DISCUSSION

The findings indicate that pragmatics has evolved through continuity as well as diversification. Across all four periods, SEMANTICS and PRAGMATICS remained the most durable thematic lines, showing that classical concerns with meaning, context, inference, and communicative action continued to anchor later developments. This is consistent with the historical formation of pragmatics as an interdisciplinary field rooted in philosophy, linguistics, and anthropology but progressively extended into broader empirical domains (Ambroise, 2011; Meeuwis and Östman, 2012). At the same time, the results reveal an asymmetry: SEMANTICS remained a stable intellectual anchor,

whereas PRAGMATICS persisted more diffusely, branching into themes such as LINGUISTICS, THEORY-OF-MIND, and IMPLICATURE. Thus, the field retained its conceptual core, but redistributed it across increasingly specialized subdomains rather than recentralizing it under a single label (Leech, 2012; Vyatkina and Cunningham, 2015).

Across the middle periods, pragmatics shifted from conceptual consolidation to empirical expansion and then to cognitive-clinical diversification. The early growth of developmental, family-centered, and disorder-oriented themes indicates a broader move toward methodological pluralism and applied inquiry, in which pragmatic competence became observable,

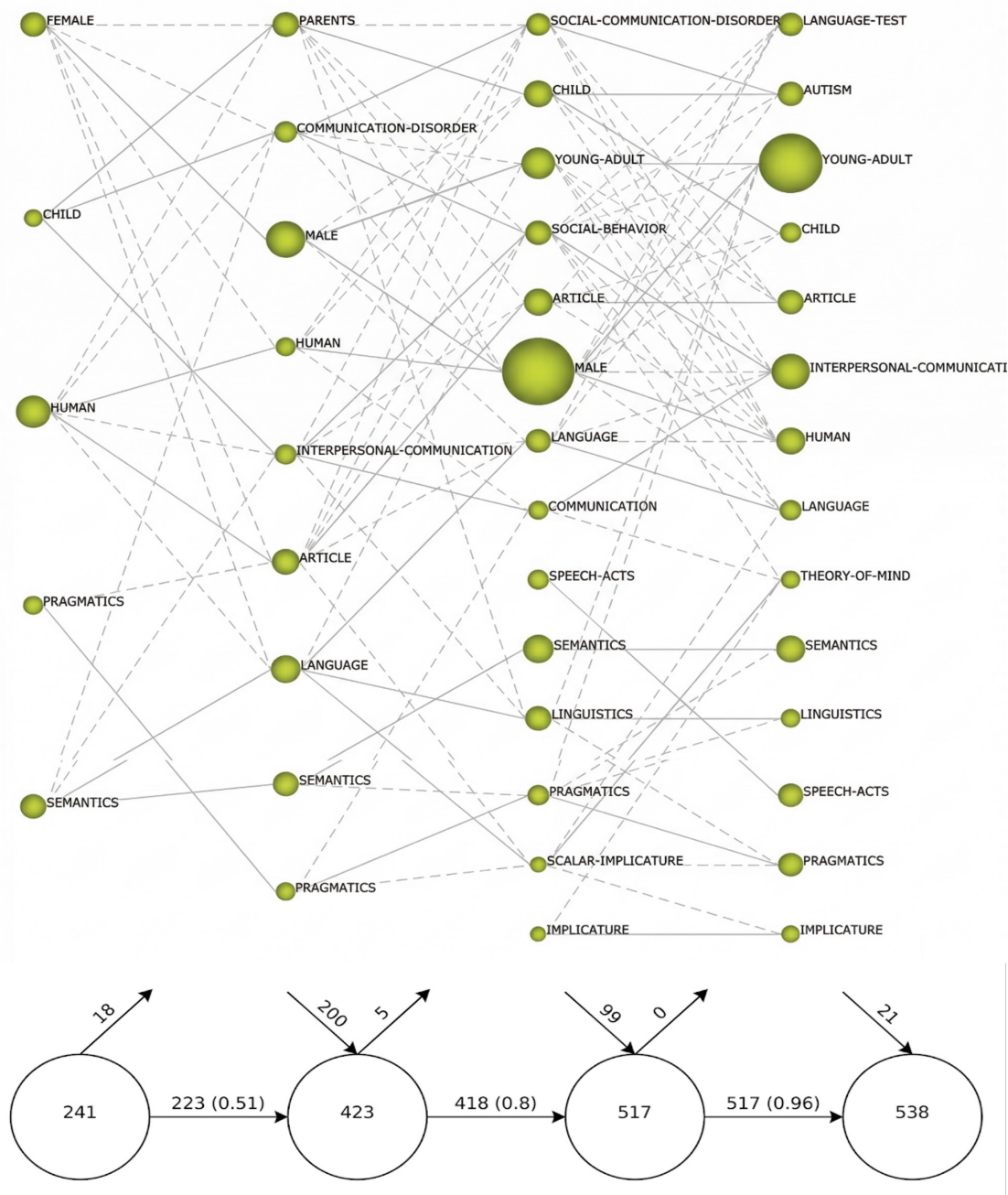


Figure 7: Thematic Evolution of Pragmatics Research (1939-2025).

testable, and clinically relevant rather than primarily conceptual (Morgan, 2007). This applied expansion later became more internally differentiated, producing stronger clinical specificity, population-based profiling, and distinct inferential-cognitive specialties such as IMPLICATURE. That pattern aligns with the consolidation of experimental pragmatics and psycholinguistic work on intention, nonliteral meaning, and inference (Gibbs and Colston, 2020; Noveck and Reboul, 2008).

In the most recent period, the field remains strongly empirical and applied, but its center of gravity shifts toward assessment, participant-specific designs, and digitally expanding communicative environments. The prominence of LANGUAGE-TEST, YOUNG-ADULT, AUTISM, THEORY-OF-MIND, and INTERPERSONAL-COMMUNICATION suggests a more granular structure organized around communicative assessment, developmental profiling, mentalizing, and interaction. This pattern is consistent with the maturation of clinical pragmatics and intervention-oriented frameworks such as Cognitive Pragmatic Treatment (Bosco and Gabbatore, 2025; Cummings, 2021; Pennisi, 2019). At the same time, the visibility of terms related to large language models, chatbots, digital discourse, multimodal interaction, and computational modeling indicates that pragmatics is increasingly extending into AI-mediated and platform-based communication (Cheema *et al.*, 2023; Hauck *et al.*, 2021; Mao *et al.*, 2025; Padhi *et al.*, 2024; Sykes, 2021).

Importantly, empirical growth did not displace the field's classical theoretical concerns. SEMANTICS remained one of the strongest continuity lines, while SPEECH-ACTS and IMPLICATURE also persisted into the most recent period. The continuity of IMPLICATURE, including its consolidation from SCALAR-IMPLICATURE, indicates that inferential pragmatics remains a coherent specialty rather than a residual classical concern. Likewise, the persistence of SPEECH-ACTS confirms the continued relevance of communicative action, illocutionary force, and intended meaning (Khan and Bughio, 2012; Leech, 2012). The emergence of THEORY-OF-MIND further illustrates theoretical renewal through interdisciplinary integration, supporting recent views of pragmatics as increasingly intertwined with cognitive science and socio-cognitive explanation (Baggio, 2025; Cummings, 2024).

Beyond thematic change, the results reveal a highly centralized knowledge infrastructure. The Journal of Pragmatics serves as the principal outlet for 9 of the 10 leading countries, while the United States and the United Kingdom dominate productivity, citation impact, and collaboration. Western Europe forms a dense collaborative core, and Australia and Canada act as bridging nodes. Although Asian countries are increasingly visible, their integration remains uneven. These patterns align with world-systems interpretations of scientific production

and the continuing hegemony of English-language publication infrastructures (Gallagher *et al.*, 2021; Strauss and Manalo, 2023; Wallerstein, 2013). Overall, pragmatics is best understood as a layered and expanding field-conceptually anchored, empirically strengthened, cognitively enriched, and increasingly extended into digital and AI-mediated communication- but still shaped by concentrated publication and collaboration structures.

Implications and Future Directions

The findings indicate that pragmatics developed through continuity and diversification rather than replacement. Across the four periods, enduring themes such as semantics, pragmatics, speech acts, and implicature remained visible, but were progressively recontextualized within developmental, clinical, cognitive, and digital domains. The field thus shifted from a compact conceptual structure to a more differentiated thematic profile marked by developmental and disorder-oriented expansion, cognitive-clinical diversification, and, more recently, assessment-centered and digitally mediated applications.

The results also show that contemporary pragmatics is organized across multiple specialized subfields, including language testing, autism, theory of mind, and interpersonal communication, while retaining continuity with its core concerns in meaning-in-context, inference, and communicative action. At the same time, research production, citation impact, and international collaboration remain highly concentrated in a small number of countries, institutions, and publication outlets, indicating a centralized global research structure.

Methodologically, the study shows the usefulness of longitudinal thematic evolution analysis for tracing persistence, transition, and reorganization across periods. The findings should nevertheless be interpreted with caution because the dataset is limited to Scopus-indexed English-language documents, which may underrepresent regional and non-indexed scholarship.

CONCLUSION

This study shows that pragmatics has developed through continuity and diversification rather than mere thematic replacement. Across the four periods, enduring conceptual lines such as semantics, pragmatics, speech acts, and implicature remained visible, but were progressively recontextualized within developmental, clinical, cognitive, assessment-centered, and digitally mediated domains. The field thus evolved from a relatively compact conceptual structure into a more differentiated research ecology marked by empirical expansion, cognitive-clinical specialization, and recent digital and AI-related developments. At the same time, the global organization of pragmatics research remains highly concentrated, with publication output, citation impact, and collaboration structured around a limited set of countries, institutions, and publication outlets. These findings demonstrate the value of longitudinal bibliometric and science-mapping

analysis for tracing how a field changes through both persistence and reconfiguration across extended historical periods.

These developments also carry practical implications beyond bibliometric patterning. For linguistic research, the expansion of cognitive, clinical, and digitally mediated pragmatics points to a field that increasingly depends on interdisciplinary and methodologically plural forms of inquiry. For teaching, the findings suggest that pragmatics instruction should move beyond classical foundations alone to include pragmatic competence, assessment, communication disorders, and digital interaction. For technology, the growing prominence of AI-related and platform-mediated themes highlights the relevance of pragmatics for human-computer communication, automated language assessment, and the analysis of context-sensitive meaning in computational environments. Taken together, the findings position pragmatics as a layered and adaptive field shaped by the interaction of conceptual continuity, applied expansion, and evolving research infrastructures.

ABBREVIATIONS

AI: Artificial Intelligence; **CD:** Cited Documents; **CPD:** Citations Per Document; **GSC:** Global Scientific Citations; **GSP:** Global Scientific Production; **h-index:** Hirsch Index; **LLMs:** Large Language Models; **P:** Productivity; **Q1:** First Quartile; **Q2:** Second Quartile; **Q3:** Third Quartile; **Q4:** Fourth Quartile; **SciMAT:** Science Mapping Analysis Tool; **TITLE-ABS-KEY:** Title, Abstract, and Keywords; **US:** United States; **UK:** United Kingdom.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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