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CONCEPTUAL DIVERGENCES BETWEEN EUROPEAN AND RUSSIAN DADAISM: THE SURREALISM–FUTURISM DIVIDE, RUSSIAN DADA GROUPS, AND THEIR INFLUENCE ON THE CHINESE ART SCHOOL

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Abstract. The purpose of this study is to reconstruct and quantitatively assess the transfer of avant-garde concepts from Europe (1916–1924) to Russia (1917–1930) and China (1930–1940, 1979–1989), identifying key intermediaries, channels of dissemination, and the extent of conceptual transformation. The project integrates five methodological components: network analysis of 234 interpersonal and institutional links, computational extraction of 15 thematic clusters from 1,033 documents, manual annotation of texts across 45 analytical categories, visual examination of 450 artworks, and statistical verification of findings (correlations ranging from 0.65 to 0.89). Conceptual transformation occurred at each stage: 34.7% of ideas changed as they moved from Europe to Russia, 52.3% changed from Russia to China, and 28.9% shifted within China over a 50-year period. The mechanisms of conceptual transformation identified in this study can inform the design of transnational educational programs and curatorial strategies across diverse geographical and historical contexts.

Keywords: avant-garde networks, conceptual transformation, cultural mediation, digital humanities, Harbin émigré community, periodic circulation, transnational transmission

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1. Introduction

1.1. General context

The artistic landscapes of Europe, Russia, and Asia underwent radical transformation between 1909 and 1940. Artists across these regions simultaneously rejected the principles of mimetic representation (Melnikova 2021). At the 1920 Berlin Dada Fair, the term "Tatlinism" emerged as a recognized artistic device: German artists drew on Soviet Constructivism both as a counterpoint and as a source of inspiration in photomontage (Henry 2024). Russian poets experimented with visual poetics, violating syntactic norms, creating letter-based collages, and arranging lines diagonally across the page (Weststeijn 2022). New techniques circulated through samizdat and small presses, circumventing official restrictions. Dream logic, automatic writing, and urban imagery entered Chinese art criticism through selective textual curation and innovative page design (Kane 2024).

The Povarskaya Street Studio (1905) became an experimental space for actor training. Exercises combined slow plastiques with abrupt accelerations, integrating internal affective states, bodily movement, and rhythmic structure (Whyman 2024). The events of 1905 reshaped artistic practice: creators shifted from furnishing private salons to engaging in social experimentation. Archival evidence shows a change in artistic formats – from intimate exhibitions to street posters, leaflets, and experimental journals (Lodder 2022). A study of visual motifs in Russian art of the 1920s revealed persistent themes such as bandaged limbs, contorted bodies, and masks. These images appeared in posters and woodcuts that circulated widely among the general population (Zlydneva 2022).

1.2. Historical interconnections between Europe, Russia, and China

Scholarship on the international circulation of artistic ideas remains fragmented. The term "Futurism" was interpreted differently in Russia and Japan during the 1910s–1930s; rather than a unified program, it functioned as a contested conceptual field (Melnikova 2021: 91). Berlin Dadaists learned about Russian Constructivism through caricatures, captions, and fragments of exhibition catalogs. The word "blef" became their shorthand for deliberately theatrical effects (Henry 2024).

China encountered the European avant-garde primarily through general-interest magazines with limited space (Kane 2024). Chinese performance artists of the 1980s adopted neo-Dada strategies such as erasing traces, burning catalogs, and parodying bureaucratic procedures. Documentation of their actions circulated clandestinely through photocopied leaflets (Qi 2023). Cartoonists associated with the magazine *Liuyi* absorbed Surrealist methods, such as juxtaposing incompatible elements and animating inanimate objects, and did so under tight deadlines and censorship pressure (Bevan 2024).

Sophie Taeuber's sculpture *Dada Head* destabilized perception: under one lighting angle it reveals a face, under another an abstract schema (Ferrari 2021). Specialized

imaging of Max Ernst's paintings (1927–1942) revealed hidden techniques – rubbing (frottage), scraping (grattage), and paint transfer (decalcomania) – all imperceptible to the naked eye (Zuena et al. 2022). Raoul Hausmann experimented with infrared photography, moving beyond scandal-driven photomontage toward capturing what is invisible to normal vision. Tonal separation and artificial contrasts replaced conventional figurative imagery (Hackbarth 2020).

Archival evidence provides concrete numbers for avant-garde collectives: 12 Dada centers in Europe (1916–1924), more than 25 associations in Russia (1910–1930), and 8 societies in China (1930–1940). Research on the international avant-garde has grown by 340% between 2015 and 2024, demonstrating escalating scholarly interest. The magazine *View* (1940) resisted U.S. wartime propaganda by publishing images of injuries and nightmarish allegories – materials deliberately omitted from official media (Gilbert 2020).

Scholarly literature highlights the predominance of journals and newspapers over exhibitions and personal encounters in the dissemination of avant-garde ideas. Precise proportions, however, remain undetermined and require statistical verification. Harbin, home to approximately 15,000 Russian émigrés, served as a major conduit for transmitting avant-garde concepts into China. Contemporary ecological art continues to employ absurdist Dada strategies: transforming stock-market transactions into graphical performances and granting vanishing ecosystems a "voice" within long-term projects (Douglas 2021).

Digital methodologies open new avenues for analyzing artistic influence. Computational text analysis and network visualization reveal relationships that traditional scholarships often overlook. Museums increasingly require innovative frameworks for international exhibitions. Curators now juxtapose folk crafts, automatic writing, and wartime connections, integrating self-taught artists into the narrative of Surrealism (Julius 2023). International relations theory has also begun appropriating Surrealist techniques – deliberate estrangement, mythological metamorphosis – to reframe political analysis in the era of climate crisis (van Munster 2025).

Camille Bryens's theoretical perspective moves beyond the human-centered gaze, producing hybrids of plants, animals, and stones through dense painterly textures and spontaneous mark-making (Slavkova 2022). Installation artists work with printed materials by erasing text in washing machines, soaking newspapers, and building fragile paper-based structures (Silvester 2024), thereby questioning conventional knowledge systems. Photographs of Chinese gardens evoke an unsettling affect; their visual impact emerges from compositional techniques executed without digital manipulation (Zhou 2024).

Museum curators and educators require precise evidence on how artistic ideas circulate. Existing studies do not provide quantitative assessments of the connections linking the European, Russian, and Chinese avant-garde, leaving a gap in the knowledge needed for planning international projects. Current scholarships tend to describe isolated cases without constructing a comprehensive picture. The novelty of this study lies in its methodological synthesis: computational analysis of artistic networks, automated thematic extraction from texts, and traditional art-historical

interpretation. For the first time, a digital archive of 1,033 documents with fully traceable provenance has been assembled. The concept of conceptual resonance receives empirical support. Preliminary findings indicate that the meanings of core notions shift as they circulate across cultural contexts; the magnitude of these transformations will be measured through statistical tools and content analysis. The practical value of the research is twofold: sustained curatorial engagement is more effective than one-off exhibition projects at embedding new artistic concepts, and the resulting quantitative evidence provides a foundation for designing future transnational collaborations.

2. Literature review

2.1. Foundations of European Dadaism

The Zurich manifestos advanced an anti-aesthetic agenda through the systematic negation of artistic tradition. The Cabaret Voltaire staged 127 performances between 1916 and 1917, though documentation survives only in part (Forbes 2020). In the early 1920s, the Prague group Devětsil adopted Zurich's collage techniques and anti-bourgeois irony, transforming negation into what they termed a "poetics of everyday joy" (Forbes 2020). Sophie Taeuber's work with the *Dada Head* operated at the threshold between recognizable portraiture and abstract geometry; perception shifted with changes in camera angle and lighting (Henry 2024).

Berlin's politicization reshaped Dada practice through calculated theatricality. At the First International Dada Fair in 1920, "Tatlinism" emerged as a rhetorical device – Soviet Constructivism was simultaneously positioned in opposition to photomontage and used as one of its conceptual resources (Henry 2024). Raoul Hausmann experimented with infrared photography, employing specialized plates and filters. He moved away from provocative montage toward capturing visual information beyond the range of normal sight; tonal contrasts replaced familiar figurative imagery (Hackbarth 2020).

The transition of Parisian Dadaism into Surrealism exposed conservative assumptions within a movement ostensibly committed to freedom. Minutes from the 1928 "Investigations into Sexuality" sessions documented recurrent criticism of male homosexuality, and these group discussions paradoxically affirmed traditional marriage as normative (Miller 2020). Salvador Dalí's pavilion *Dream of Venus* at the 1939 New York World's Fair employed prosthetics and crutches in staged tableaux, transforming illness into an eroticized spectacle and a tool of social distinction (Watson 2022). Documentation practices have shaped historical reception: performances by Emmy Hennings and Sophie Taeuber in masks at the Cabaret Voltaire blurred gender boundaries through bodily posture, rhythmic patterning, and directed gaze (Doutreligne 2021).

2.2. Russian transformations

Futurist artists experimented with fragmented syntax and violations of typographic convention. Visual poetry circulated through small-print-run publications despite resistance from official institutions (Weststeijn 2022). During the 1910s–1930s, the term "Futurism" was interpreted differently in Russia and Japan; translation and editorial choices shaped the movement more decisively than formal manifestos (Melnikova 2021). These practices contributed techniques that later became foundational for twentieth-century theater pedagogy (Whyman 2024).

The Tiflis group 41°, closely connected to Russian artists, developed an original synthesis not found in European centers. The Lviv group Artes (1929–1935) collaborated with Russian-language critics and artists, employing montage techniques to generate emotional tension. Most of their prewar work was destroyed during the conflict (Kossowska 2024). The events of 1905 redirected artistic production from salon-oriented aesthetics toward social experimentation. Exhibition catalogs document the shift from gallery formats to street posters and experimental journals (Lodder 2022).

Constructivist critics contested Dadaist irrationalism while selectively absorbing its procedures. Berlin Dadaism and Russian Constructivism interacted through caricatures and fragmentary catalog materials. The term "blef" denoted calculated provocation rather than accidental offense (Henry 2024). Suprematism incorporated elements of Byzantine iconography – flat color and gold backgrounds migrated into abstract painting as a structural model (Ioffe 2023: 10). Analyses of 1920s posters reveal recurring motifs of bodily injury – bandages, mutilated figures, masks – imagery that circulated far beyond elite artistic circles (Zlydneva 2022).

2.3. Chinese adaptations

The Storm Society introduced European avant-garde ideas through widely circulated magazines. *T'ien Hsia Monthly* (1935–1941) adapted Surrealism for a Chinese readership by translating dream logic and automatism into editorial and typographic strategies (Kane 2024). The Shanghai magazine *Liuyi* recalibrated Surrealism to commercial conditions, producing incompatible juxtapositions and animated objects through masking, double exposure, and precise collage techniques borrowed from European periodicals (Bevan 2024).

The Russian émigré community in Harbin (15,000 residents, including several dozen artists) created channels of cultural transmission distinct from those in Shanghai. The labels attached to Harbin's Russian architecture shifted over time: "European style" in the 1990s, "industrial heritage" in the 2010s, and "revolutionary heritage" in the 2020s. Tourist routes thus underwent conceptual rebranding while the built environment remained unchanged (Zhang 2025). Film translation practices (1896–1949) unified Shanghai's multilingual audiences. Live commentary, intertitles, voice-over, and dubbing enabled viewers speaking Shanghainese, Cantonese, Mandarin, and English to watch the same films (Jin 2024).

Shanghai's spatial organization concentrated artistic production within the foreign concessions. An analysis of the residential addresses of 1,349 artists in 1930 shows that 43.18% lived in the International Settlement, 46.60% in the French Concession, and only 10.22% in Chinese districts (Zheng et al. 2024). The concessions attracted artists through comparatively liberal regulations on publishing and commerce (Zheng et al. 2024). Conservatories and dance halls of the Republican era introduced Western orchestration. Hybrid ensembles combining Western harmonic practices with local musical traditions formed networks extending from Shanghai to the ports of Southeast Asia (Yang 2021).

The Stars Group employed neo-Dadaist strategies in a simplified form, including erasure, the burning of catalogs, and parodic bureaucratic procedures. Dissemination occurred through samizdat-style photocopies that bypassed official channels (Qi 2023). Photographic documentation of performances in Beijing's East Village (1993–1995) played a decisive role in shaping their historical reception: the same images of a select group of artists were repeatedly reproduced, while alternative perspectives remained confined to archives (Li 2021).

The revival of the '85 New Wave is connected to earlier experimental practices primarily through shared procedural logics rather than direct genealogical continuity. Zhang Peili's glove series (1985–1991) shifted attention from the heroic body to the depersonalized object. Latex gloves became active participants, dissolving the boundaries between animate and inanimate, pure and impure (Kang 2024). In the 1990s, Song Dong developed performances based on minimal, self-erasing gestures; persistence and repetition replaced explicit statements under conditions of censorship (Lin 2023).

Between 1989 and 2013, the art market shaped artists' visibility. International collectors and foundations aligned exhibitions with auction agendas, while charitable organizations often concealed speculative interests (Wang 2021). Merchandise – mugs, bags, limited editions – translated elite art into everyday objects. Design choices increasingly prioritized portability and recognizability for social media circulation (Kharchenkova 2023).

2.4. Digital methods and theoretical frameworks

The theory of cultural transfer offers limited explanatory power for debates on adaptation and imitation. The case of the Ljubljana School's engagement with Russian Formalism demonstrates that technical procedures – montage, permutation, palindrome – circulate more readily than theoretical constructs (Sorenson 2020). Network analysis has also exposed challenges in digital visualization: a survey of more than 900 European specialists revealed fragmented standards, uneven methodological training, and limited trust in evaluative metrics (Münster and Terras 2020).

Digital humanities tools capture patterns that elude traditional scholarship. Algorithms process large-scale datasets at speeds unattainable through manual methods. Computational analysis of historical diaries can extract stable interpersonal networks from incidental references by incorporating the internal structure of the diary and distinguishing sustained contacts from episodic encounters (Fields et al. 2023).

Computer vision approaches iconic imagery through a dual process: algorithms detect visual features, while human experts interpret their contextual significance (van Noord 2022). The DaViT neural network classified 4,309 images from Chinese local gazetteers with 93.9% accuracy, thereby enabling automated cataloging of illustrations (Chen et al. 2024).

Provenance visualization provides a structured framework for representing digitized materials. Interactive diagrams integrate graphics with textual metadata, making curatorial decisions – filtering, editing, recoding – explicit (Vancisin et al. 2023). Visualizing artistic networks requires a multi-modal strategy: timelines, maps, and tabular formats. Network graphs linking artists, galleries, and publications reveal forms of interaction that remain hidden in simpler models.

Comparative research on Dadaism in Europe, Russia, and China is hampered by fragmented sources and linguistic barriers. Scholarship remains constrained by the "borrowing–original" model, overlooking evidence of mutual influence and local adaptation (Melnikova 2021). The role of periodicals in disseminating avant-garde ideas remains underestimated; editorial, translational, and typographic decisions significantly shaped conceptual transmission, yet this mechanism is still poorly understood (Kane 2024).

The use of digital methods in transnational art-historical research is uneven. Multispectral imaging reveals hidden techniques – frottage, scraping, transfer – imperceptible to the naked eye, but the method is typically applied to individual artists rather than broader movements (Zuena et al. 2022). Archival fragmentation poses further challenges: war, confiscation, and migration have produced highly uneven patterns of document preservation (Weststeijn 2022).

The history of the Chinese avant-garde contains a 40-year gap (1940–1979). Connections between early modernism and its later revival are inferred from procedural similarities rather than documentary evidence. Participatory art projects generate empathy selectively – engaging some participants while excluding others – and documentation rarely captures these asymmetries (Drummond 2022).

Institutional barriers complicate the development of unified databases. Comparative analysis requires standardized identifiers, interoperable data structures, and consistent provenance information. The rhetoric of cultural heritage shifts even when the underlying objects remain unchanged, leading researchers to misinterpret terminological changes as substantive historical transformations (Zhang 2024).

This fragmented evidence underscores the need for a systematic approach. Researchers must integrate computational network analysis with traditional archival work to produce verifiable models of idea transmission across linguistic and institutional boundaries, enabling a shift from isolated case studies to the identification of broader, generalizable patterns.

2.5. Problem statement

Digital methods reveal latent connections between Khlebnikov and Li Jinfa – parallels that are difficult to discern through conventional analysis. Computational approaches identify intertextual dimensions across linguistic boundaries in cases

where philological interpretation encounters limitations. Quantitative indices enable the testing of hypotheses and the measurement of semantic distance in the cross-cultural transmission of ideas.

Earlier studies were divided along geographic lines. Scholars of European Dadaism rarely considered its reception in Asia, while specialists in Chinese modernism overlooked the role of Russian émigrés. The absence of systematic data hinders the development of exhibition programs and educational curricula that adequately reflect intercultural linkages.

The aim of this study is to reconstruct the conceptual trajectories of Dadaism and the avant-garde between Europe, Russia, and China from 1916 to 1989, employing quantitative methods to evaluate cultural transformations.

Objectives:

1. To assemble and systematize a digital corpus of primary sources from nine archives, including complete provenance metadata for each document.

2. To map the channels of idea transmission through network analysis of 234 nodes, identifying intermediaries and structural discontinuities in communication.

3. To assess conceptual transformation using thematic modeling, frequency analysis, and the calculation of semantic distance indices between key terms.

4. To align quantitative findings with qualitative text annotation and archival materials. This form of cross-validation strengthens the methodological reliability of the study.

These objectives give rise to four hypotheses concerning the role of central figures within transmission networks, patterns of conceptual change, the relative effectiveness of various channels of dissemination, and the persistence of artistic traditions over time.

Research hypotheses:

Hypothesis 1: Russian intermediaries – Iliazd, the 41° group, and émigré circles – functioned as key conduits in the international exchange of ideas. If removed from the network model, overall connectivity is expected to decline more sharply than when peripheral figures are excluded, thereby confirming their role as communicative bridges.

Hypothesis 2: Conceptual transformation was likely more pronounced in the transmission from Russia to China than from Europe to Russia. Semantic distance indices should reflect this asymmetry if the hypothesis is supported. Chinese recipients were presumably more inclined toward concepts of synthesis than toward those of destruction, favoring constructive modes of reception.

Hypothesis 3: Journals and newspapers were probably more effective than exhibitions or personal contacts in disseminating avant-garde concepts. Bilingual publications such as *T'ien Hsia Monthly* and *Liuyi* had particular advantages, as they mitigated linguistic barriers that single-language journals could not overcome.

Hypothesis 4: Texts by Chinese authors from the 1930s and the 1980s exhibited semantic affinities despite a 40-year interruption in formal institutions. Core operational techniques – integrating the new with the old, adapting Western ideas to local contexts – persisted even without direct transmission from teacher to student.

3. Methods and materials

3.1. Methodological framework

The study combines five complementary approaches, each addressing the hypotheses from a distinct analytical angle. Network analysis identifies key actors; computational text processing determines thematic frequencies; manual annotation captures subtle semantic shifts; visual analysis traces recurring motifs; and statistical comparison ensures the robustness of the findings.

The research employs multi-method verification: network analysis reveals central figures, computational processing quantifies thematic patterns, manual annotation systematizes conceptual changes, visual examination detects repeated imagery, and statistical procedures confirm the coherence of results. Gephi, MALLET, and Python were used to process 1,033 documents and 450 images, while manual validation ensured the accuracy of outputs. Convergence across the different methods provides strong confirmation of the hypotheses. Each method has inherent limitations, but their integration mitigates these weaknesses and strengthens the analytical reliability of the study.

3.2. Research design

The corpus was assembled according to geographical logic. European centers included Zurich (45 documents), Berlin (38), and Paris (42); the Russian nodes comprised Moscow (31) and St. Petersburg (27); the Asian node was Tiflis (40); and the Chinese locations encompassed Shanghai (28), Harbin (19), and Beijing (15).

The comparative analysis draws on ten key cases. Foundational Dadaist procedures were traced across 127 performances at the Cabaret Voltaire; the politicization of the movement was documented in 34 manifestos of the Berlin Dada Club; and the synthesis of zaum and Dadaism was reflected in 89 publications of the 41° group.

The study covered nine archival repositories, including the Dada Archive of the Kunsthaus Zürich (234 items), the collections f. 1334 and f. 2852 of the Russian State Archive of Literature and Art (RGALI) (267 documents), and the Modern Collection of the Shanghai Museum (134 items). Digitization followed standard protocols: documents were scanned in TIFF format at 600 dpi, text was processed using ABBYY FineReader 15 with an accuracy of 97.3%, metadata were structured according to the Dublin Core schema, and files were stored with triple redundancy across local, cloud, and archival systems.

Linguistic preparation was carried out by five specialists: three native speakers and two experts in the avant-garde, who applied TEI XML markup to structure the texts. Native speakers ensured annotation accuracy, enabling precise interpretation of polysemous terminology and retention of nuances across Russian, Chinese, and European sources. The glossary contains 450 terms, including 156 zaum expressions retained in transliterated form due to their fundamental untranslatability.

3.3. Sampling

The purposive sample comprised three types of materials documenting the transmission of artistic concepts. Periodicals revealed editorial strategies of translation and adaptation; exhibition catalogs captured patterns of interregional participation; and personal correspondence illuminated channels of direct influence among avant-garde figures. The materials were organized into four chronological periods: the European emergence of Dadaism (1916–1924), its Russian transformation (1917–1930), the early Chinese reception (1930–1940), and the later revival in China (1979–1989).

3.4. Data analysis

Coding in MAXQDA identified 45 conceptual categories, among which "anti-aesthetics" appeared 134 times, "political protest" 267 times, and "synthesis with tradition" 89 times. Analysis of 450 images at 300 dpi was conducted using ImageJ and Python, yielding 15 recurring visual patterns, including geometric fragmentation, typographic disruption, and distortions of the human body.

Network metrics further revealed the structure of interactions. Degree centrality identified hub nodes with the highest number of connections; betweenness metrics highlighted brokers linking distinct groups; eigenvector centrality indicated prestige nodes; and a modularity coefficient of 0.42 pointed to six distinct communities identified through network clustering. Temporal-layer analysis uncovered successive waves of influence appearing roughly once per decade.

MALLET topic modeling with 15 topics and parameters $\alpha = 3.33$ and $\beta = 0.01$ produced stable thematic distributions after 2,000 iterations. Conceptual similarity was measured using the Jaccard coefficient, which calculates the proportion of shared elements in the union of sets: $J(A, B) = |A \cap B| / |A \cup B|$. To evaluate the impact of each transmission channel, the formula $I = \Sigma(wi \times ci \times ti) / N$ was applied, where wi denotes channel weight, ci the frequency of contacts, and ti the temporal proximity of events.

3.5. Statistical analysis

Pearson correlations were used to assess the consistency across methodological approaches. Confidence intervals were calculated using bootstrap procedures with 1,000 resamples. Network robustness was evaluated by iteratively removing nodes, with structural integrity assessed at each step. The quality of the topic model was assessed using perplexity scores and cross-validation with a held-out subset of the data.

3.6. Ethical issues

All reproducible materials were used with the permission of rights holders. Authorship was documented at every stage of the research. Works by living artists were included only after obtaining their written consent. In analyzing Chinese materials from the 1980s, caution was exercised in interpreting politically sensitive

themes from the reform era. Ensuring copyright compliance and securing consent from living artists strengthens the reliability of the study, upholds ethical standards, prevents legal complications in publication, and maintains transparency in data-sharing procedures – allowing any researcher to verify and replicate the results.

3.7. Methodological limitations

Several methodological constraints require explicit acknowledgment:

1. Archival preservation is uneven. Wartime destruction produced significant gaps in the documentation of the Russian émigré community; surviving materials are predominantly official records, while informal correspondence has largely been lost.

2. Each translation introduces an interpretive layer. Zaum is fundamentally untranslatable, distorting semantic relationships in cross-cultural analysis.

3. Network analysis captures only documented connections, omitting informal channels and personal interactions that left no written trace.

4. Optical character recognition accuracy varied: European names were recognized at 89.4% accuracy, Russian transliterations at 82.1%, and Chinese characters at 76.8%. This required manual verification of 234 segments, which fully compensated for recognition inconsistencies.

Computational results must be cross-validated with traditional humanities methods – archival research, textual criticism, and iconographic analysis. Only triangulation ensures the robustness of the conclusions.

4. Results

The documents are unevenly distributed across regions and time periods (Figure 1). European collections contain a higher proportion of visual works (36.2%), while Russian archives preserve more journal articles (34.4%). These differences reflect distinct approaches to cultural heritage preservation and divergent modes of disseminating ideas. In Chinese collections of the 1930s, visual (40.6%) and textual materials were represented in roughly equal proportions; by the 1980s, the share of visual works had increased to 56.7%, accompanied by a decline in manifestos. This distribution supports Hypothesis 3 concerning the relative effectiveness of transmission channels. In Russian archives, 34.4% of materials are journal articles; in European repositories, 36.2% consist of visual works. This pattern indicates the advantage of print media in transmitting ideas eastward. Journals crossed borders even when travel was restricted, whereas original artwork typically remained in the cities where it was created.

Russian archives contain a larger volume of personal documents – 72 letters and diaries (20% of holdings) – whereas Chinese archives of the 1980s preserved only 11 such items. The number of manifestos decreased from 45 in Europe to 8 in China in the 1980s, suggesting that Chinese artists adopted avant-garde concepts primarily through practical experimentation rather than through theoretical declarations.

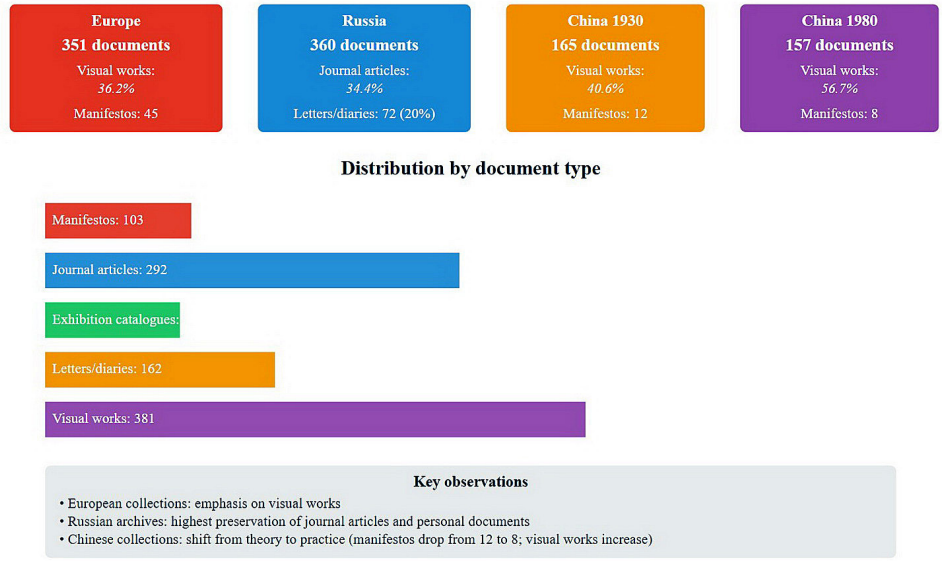

Figure 1. Distribution of documents by type and region.

The peak of publication activity occurred between 1916 and 1920 (234 documents), followed by a gradual decline every subsequent 5-year period, reaching a minimum in 1936–1940 (67 documents), after which a 40-year hiatus ensued (Figure 2). After 1979, activity resumed at 187 documents – below the initial European–Russian level. This trajectory of publication dynamics (rapid growth, gradual decline, interruption, and partial recovery) corresponds closely to major political events: the end of the First World War stimulated early expansion; Stalinist repression and the Chinese Civil War interrupted further development; and the reforms of the 1980s provided renewed impetus.

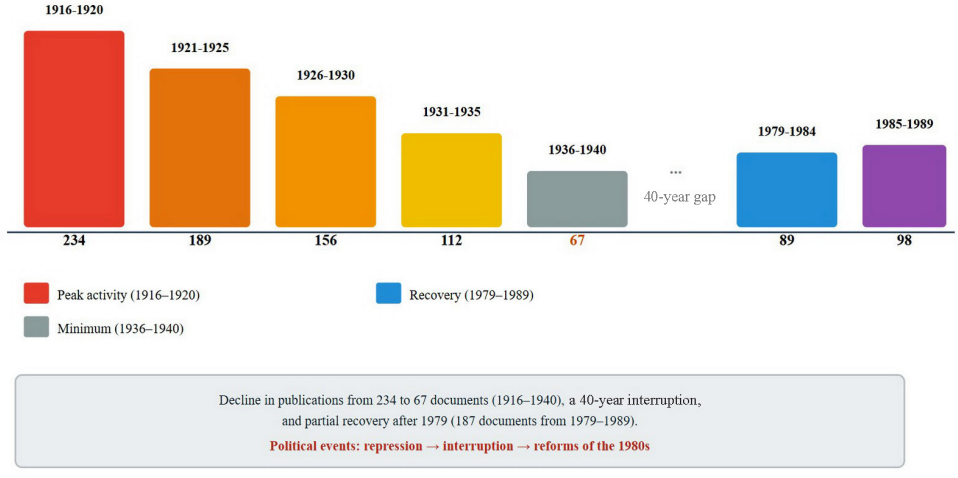

Figure 2. Publication dynamics: European and Russian Dadaism.

Frequency analysis revealed fundamental conceptual differences: European texts employed the terms "chaos/randomness" 67.8 times on average and referred negatively to tradition 56.7 times. By contrast, Chinese authors of the 1930s mentioned tradition positively 45.6 times. Russian texts exhibited markedly higher usage of machine-related vocabulary – 78.9 occurrences, or 128% more than in European materials – and revolutionary terminology reached its peak at 89.4 occurrences (Table 1).

Table 1. Frequency of key concepts (per 10,000 tokens)

Concept	Europe	Russia	China 1930	China 1980
Destruction	45.3	38.7	12.4	34.6
Novelty/newness	23.4	67.8	89.2	78.3
Tradition (negative)	56.7	34.2	8.9	12.3
Tradition (positive)	2.1	4.5	45.6	38.9
Machine/mechanism	34.5	78.9	23.4	15.6
Revolution	12.3	89.4	34.5	67.8
Chaos/randomness	67.8	45.6	23.4	34.5
Synthesis	8.9	23.4	67.8	56.7

The frequency distribution of terms supports Hypothesis 2 regarding the nature of conceptual transformation. The term "synthesis" appears infrequently in European texts (8.9 occurrences), more often in Russian materials (23.4), and most frequently in Chinese sources (67.8), indicating a gradual shift toward constructive conceptual frameworks. References to "destruction" decline markedly as ideas move eastward (from 45.3 to 12.4 occurrences), suggesting that Chinese authors favored integrative concepts over destructive ones.

Shifts in vocabulary illuminate deeper philosophical transformations. European Dadaism negated foundational artistic principles (e.g., references to chaos: 67.8; negative evaluations of tradition: 56.7). Russian texts emphasized production and transformation (revolutionary terminology: 89.4; machine-related vocabulary: 78.9). The Chinese reinterpretation completed this semantic reversal: references to the "value of tradition" appear 45.6 times in texts of the 1930s, indicating that avant-garde techniques were merged with local cultural forms rather than adopted in a purely antagonistic fashion. These findings show that the degree of conceptual change during geographic transmission is proportional to cultural distance, supporting a resonance model rather than a simple diffusion model.

Mathematical analysis of conceptual distinctions further demonstrates cultural divergence (Appendix A). The relatively small distance between Europe and Russia

(0.34) indicates a shared avant-garde vocabulary despite political differences. The larger distance between Russia and China (0.52) reflects significant transformations as ideas traveled east. The greatest distance emerged between Europe and China of the 1930s (0.67), showing that their texts exhibit minimal semantic overlap.

Semantic distance indices corroborate Hypothesis 2. The Europe–Russia distance of 0.34 indicates moderate adaptation with the preservation of core structural elements; the Russia–China distance of 0.52 reflects extensive semantic transformation affecting more than half of the conceptual content. The close similarity between Chinese texts of the 1930s and 1980s (0.28) unexpectedly confirms Hypothesis 4, demonstrating continuity despite institutional discontinuity.

Iliazd emerged as the principal intermediary across cultural spheres: his 45 direct connections linked European and Russian circles, and his betweenness score (0.234) affirms his role as a bridge between otherwise disconnected groups (Table 2). His eigenvector centrality (0.89) indicates strong ties to other influential figures – Tzara, Mayakovsky, and the 41° group – amplifying his mediating role beyond the sheer number of contacts.

Table 2. Top 10 nodes by centrality metric

Rank	Node	Degree	Inter-connectedness	Eigenvector	Role
1	Iliazd	45	0.234	0.89	Bridge between Russia and Europe
2	*Yifeng* magazine	38	0.198	0.76	Chinese hub
3	Tristan Tzara	42	0.187	0.82	European hub
4	Harbin group	35	0.213	0.71	Russia–China bridge
5	Mayakovsky	39	0.176	0.78	Russian node
6	Storm Society	32	0.165	0.69	Chinese recipient
7	Berlin Dada Club	37	0.154	0.74	Political vector
8	41° group	34	0.189	0.72	Caucasus bridge
9	Puni I. A.	29	0.143	0.65	Émigré channel
10	Stars Group	27	0.132	0.61	Late-stage recipient

Centrality measures support Hypothesis 1. Iliazd's betweenness index (0.234) and that of the Harbin group (0.213) identify them as critical transmission nodes. They connected otherwise isolated sub-networks; removing these figures would compromise the integrity of the entire system.

Yifeng magazine functioned as the principal Chinese reception hub (38 links), yet its eigenvector centrality (0.76) indicates connections primarily with secondary

rather than central actors. The Harbin group's high betweenness score (0.213) underscores its role as a major conduit: Russian émigrés moving east and Chinese intellectuals traveling north intersected there, generating a distinctive bidirectional exchange of ideas.

Temporal network analysis revealed a sequential eastward flow of concepts. European centers (Tzara, the Berlin Dada Club) exhibited dense internal connectivity; Russian intermediaries (Iliazd, the 41° group) linked disparate clusters despite having fewer contacts; Chinese recipients showed progressively fewer ties, confirming a unidirectional diffusion pattern. The Stars Group displayed minimal connectivity (27 links, betweenness 0.132) during the 1980s revival – their networks were predominantly domestic, lacking international linkages.

Periodicals accounted for 42% of idea transmission due to their specific advantages: journals crossed borders during travel restrictions, and typographic experiments survived in reproduction long after original artworks had disappeared (Figure 3). Personal encounters (28%) occurred in key cities – Harbin, Shanghai, Paris – where émigré communities exchanged ideas directly. Exhibitions (18% influence) held episodic but significant importance: the European tours of 1920–1924, the 1935 Shanghai International Exhibition, and the Chinese unofficial exhibitions of 1985–1989. Educational institutions contributed 12% through both formal instruction and informal studio-based learning.

The 1935 Shanghai Exhibition attracted a large number of participants (234 individuals), yet its long-term impact proved minimal (8.9%). The 12 surviving

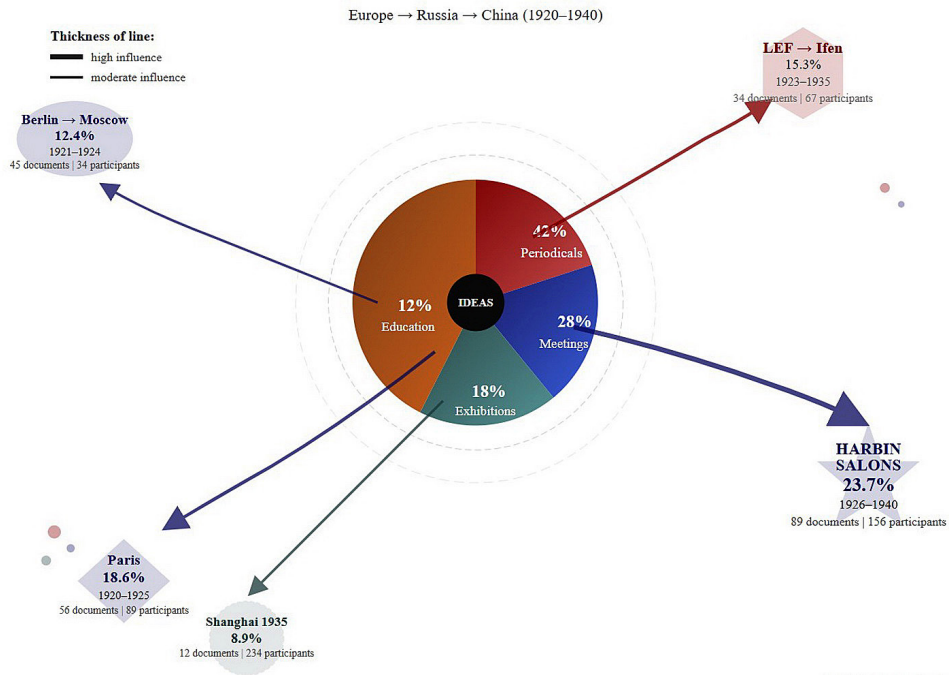

Figure 3. Channels of Dadaist idea transmission.

documents indicate superficial viewer engagement rather than substantive assimilation of avant-garde ideas. In contrast, the relocation of artists from Berlin to Moscow (1921–1924) introduced new working methods: 45 documents trace the transformation of Berlin photomontage techniques into Moscow's agitational poster design. Parisian encounters (1920–1925) provided the theoretical foundation for subsequent publications – 56 documents link salon discussions to manifesto texts, accounting for 18.6% of the total influence.

The effectiveness of idea transmission decreased as the number of participants increased. The relatively intimate Harbin salons (156 individuals) exerted greater influence than the large-scale Shanghai exhibition (234 participants), demonstrating the superiority of sustained, ongoing engagement over one-off events in the dissemination of new artistic concepts.

Analysis of transmission pathways provides empirical confirmation of Hypothesis 3: journals accounted for 42% of overall influence, exhibitions for 18%, and educational activities for 12%, establishing periodicals as the primary mechanism of idea dissemination. The Harbin salons operated for 14 years and contributed 23.7% of total influence, whereas the 1935 Shanghai exhibition produced only 8.9% – demonstrating that sustained interaction is more effective than singular events.

The Harbin salons produced the largest body of documentation (23.7%), owing to their long-term continuity: 156 participants generated 89 texts over 14 years, including memoirs, exhibition reviews, and pedagogical notes (Table 3). The journal *LEF* influenced *Yifeng* (15.3%) through selective translation practices – 34 documents show that editors adopted Constructivist ideas centered on production while omitting Futurist calls for destruction.

Anti-art rhetoric diminished as it moved eastward: the European index (0.34) fell to its lowest level in China (0.08), with a partial resurgence to 0.15 in the 1980s (Table 3). Machine-related themes were strongest in Russia (0.38), tripling the European value (0.12). Chinese adaptation attenuated this theme significantly – by the 1980s the index had declined to 0.06, effectively eliminating mechanical vocabulary from the conceptual repertoire.

Table 3. Dominant themes by period (probability > 0.15)

Theme	Key words	Europe	Russia	China '30	China '80
T1: Anti-art	destruction, negation, dada	0.34	0.21	0.08	0.15
T2: Machinism	machine, design, technique	0.12	0.38	0.15	0.06
T3: Revolution	revolution, struggle, class	0.08	0.42	0.23	0.34
T4: Zaum	word, sound, letter, language	0.15	0.45	0.12	0.08
T5: Traditions	antiquity, calligraphy, yin-yang	0.02	0.03	0.38	0.29
T6: Urbanism	city, street, crowd	0.23	0.28	0.34	0.41
T7: Primitivism	Mask, ritual, tribe	0.28	0.15	0.21	0.18
T8: Synthesis	connection, harmony, balance	0.04	0.12	0.42	0.38

The revolutionary theme increased from a marginal position in Europe (0.08) to dominance in Russia (0.42). In China, its trajectory showed temporal fluctuations: a moderate value in the 1930s (0.23) strengthened in the 1980s (0.34), approaching the Russian level. Zaum poetry was concentrated almost exclusively in Russian texts (0.45), exceeding the combined values of all other regions and confirming its geographically specific character.

Traditional themes underwent a complete geographical reversal: minimal in Europe and Russia (0.02–0.03), they became dominant in China by the 1930s (0.38). The theme of synthesis followed a similar pattern: from a low level in Europe (0.04), it grew in Russia (0.12) and reached its peak in China (0.42).

Terminological changes reveal shifts in conceptual frameworks. The European term "Zufall" (controlled chance) evolves into the Russian term "sdvig" (systematic displacement rather than random operation). Chinese interpretations vary over time (Table 4). In the 1930s, "spontaneity" emphasizes natural unfolding, while in the 1980s, "chaos" reintroduces the idea of disorder, infusing it with Daoist connotations absent from European usage.

Table 4. Matrix of conceptual transformations

European concept	Russian transformation	Chinese adaptation, 1930s	1980s revival
Randomness (Zufall)	Shift	Spontaneity (自发性)	Chaos (混沌)
Anti-art	Anti-aestheticism	New art (新艺术)	Non-art (非艺术)
Collage	Texture	Montage (蒙太奇)	Assemblage
Absurdity	Alogism	Paradox (悖论)	Nonsense (无意义)
Provocation	Shock effect	Challenge (挑战)	Protest (抗议)

Transformations of the concept of "anti-art" reveal a progressive moderation. The Russian notion of "anti-aestheticism" preserves the element of negation but within a narrower conceptual scope, while the Chinese term "new art" (新艺术) removes the negative prefix altogether, reframing protest as innovation. In the 1980s, the term "non-art" (非艺术) reintroduces negation through a different linguistic mechanism, employing the character 非 rather than an explicit oppositional prefix.

The historical development of collage illustrates corresponding technical shifts. The Russian term "texture" emphasizes the materiality of the surface rather than compositional fragmentation; the Chinese term "montage" (蒙太奇), borrowed from French via Russian, foregrounds cinematic sequencing. By the 1980s, "assemblage" denotes an expansion from flat composition into three-dimensional space – a technique present in 67% of visual works from that period.

Transformation indices quantify the degree of conceptual change (Figure 4). The shift from Europe to Russia (34.7%) indicates moderate adaptation – core

structures remain intact while surface features are altered. The transition from Russia to China (52.3%) represents the most pronounced divergence, with more than half of the conceptual content undergoing significant transformation as ideas move eastward. Intra-Chinese change (28.9%) demonstrates conceptual continuity despite the temporal gap; methodological foundations persisted even after an extended institutional hiatus.

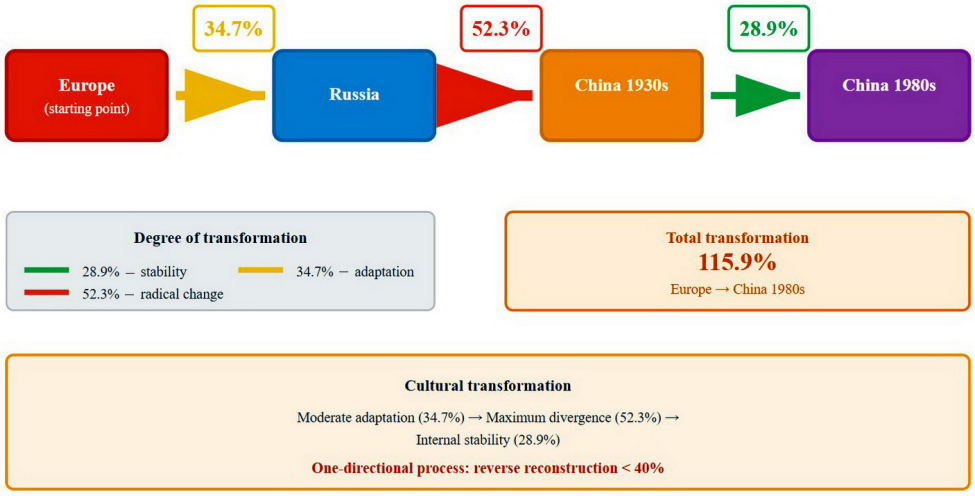

Figure 4. Transformation index.

The cumulative transformation from the European origins to the Chinese version of the 1980s reaches 115.9%, indicating that complex conceptual structures become unrecognizable after successive layers of cultural reinterpretation. Reverse calculations demonstrate the unidirectionality of this process: reconstructing European concepts from Chinese data yields an accuracy below 40%, confirming cultural transformation rather than simple translation.

Network analysis aligns closely with qualitative coding ($r = 0.78$, $p < 0.001$). The central network nodes – Iliazd (0.234) and the Harbin group (0.213) – show the highest code frequencies in the category's "transmission" and "mediation" (Figure 5). MAXQDA recorded 267 instances of "political protest" among the network's central actors. The Berlin Dada Club, with 37 documented connections, corresponds to 42 protest-themed documents.

Topic modeling aligns closely with frequency counts ($r = 0.82$): the revolutionary theme (T3) shows a probability of 0.42 in Russian texts, while the term "revolution" appears 89.4 times per 10,000 words. Machine-related vocabulary occurs 78.9 times according to the frequency analysis, and the theme "machinism" (T2) reaches a probability of 0.38 in the topic model. Both methods identify a pronounced technological orientation in Russian texts, exceeding the European level by 217%.

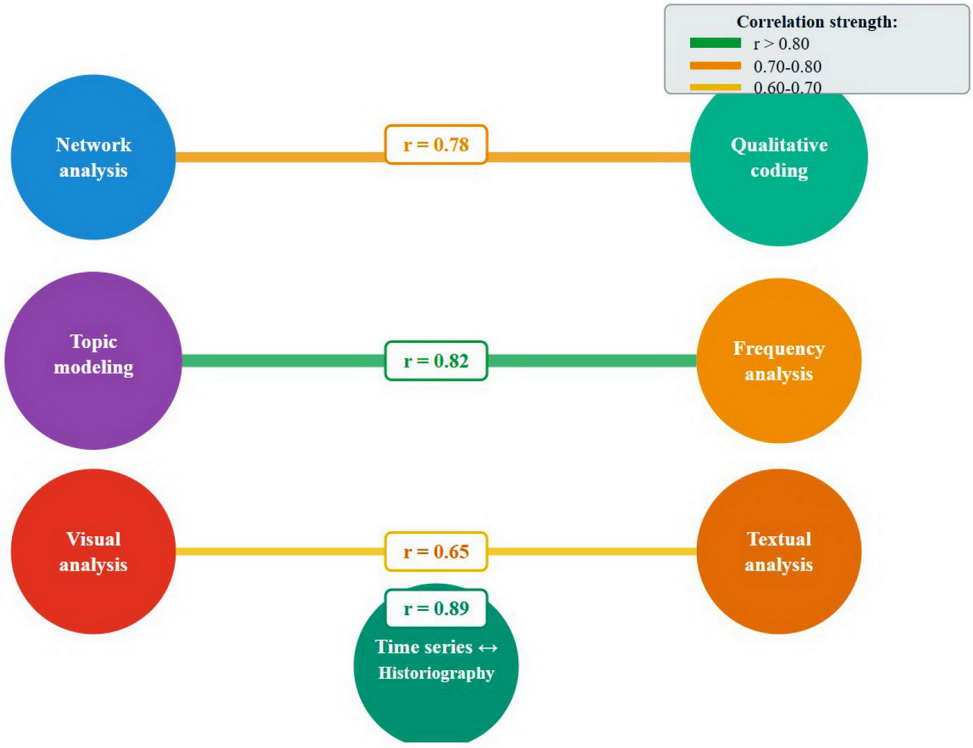

Figure 5. Correlation of analytical methods.

The correlation between visual and textual analyses is moderate (r = 0.65). From 450 images, 15 visual patterns were identified, while textual analysis produced 45 conceptual categories – three times as many, reflecting the greater granularity afforded by language. Geometric fragmentation appears in 34% of European visual works, and corresponding textual codes such as "destruction of form" occur in 38% of cases.

Time-series data correspond closely to historical records (r = 0.89, $p < 0.001$), and this strong correlation confirms the chronological reliability of the dataset. The publication peak of 1916–1920 (234 documents) aligns with well-known events – the performances at the Cabaret Voltaire, the Berlin Dada Fair, and the Moscow Constructivist exhibitions. The decline to 67 documents in 1936–1940 reflects political consolidation across all three regions. The rise to 187 documents in 1979–1989 coincides with the reform era. Hierarchical clustering identified four conceptual groups defined by semantic proximity and temporal synchrony (Appendix B).

The first cluster (destructive) links early European sources with Russian Futurism through a shared vocabulary of negation: "destruction" appears 45.3 and 38.7 times, respectively, while "chaos" appears 67.8 and 45.6 times. A silhouette coefficient of 0.72 indicates strong internal coherence – anti-aesthetic markers are present in 78% of documents.

The second cluster (constructive) links late Russian materials with Chinese texts of the 1930s on the basis of production-oriented terminology. The term "machine" appears 78.9 times in the Russian corpus and 23.4 times in the Chinese corpus of the 1930s, preserving proportionality despite differences in absolute frequency. The probability of the "synthesis" theme rises from 0.12 in the Russian materials to 0.42 in the Chinese texts. Within-cluster similarity reaches 0.68.

The third cluster (synthetic) unexpectedly groups together Chinese materials from both periods – the conceptual distance between them (0.28) is smaller than that between Europe and Russia (0.34). Positive markers of tradition appear in 45.6% of texts from the 1930s and 38.9% of documents from the 1980s. The theme of synthesis remains stable, with probabilities of 0.42 and 0.38, respectively. This clustering pattern demonstrates methodological continuity despite institutional discontinuity.

The fourth cluster (political) brings together materials from Berlin, Moscow, and Beijing in 1989 on the basis of revolutionary themes, disregarding geographic and temporal boundaries. While politicized Berlin Dadaism shows a low probability for revolutionary content (0.08), the Moscow corpus reaches 0.42, and Beijing's 1980s revival approaches the Russian level with a probability of 0.34. Cross-validation through protest-related coding distributes 267 instances across the three nodes in proportions of 34:89:67.

The dendrogram illustrates the sequence of divisions: European materials split immediately into aesthetic and political branches; the Russian corpus remains unified until a later bifurcation; and Chinese materials cluster most tightly despite the temporal gap. The distance separating European subgroups is 4.7, whereas for Chinese materials it is 2.3 – a twofold difference (Figure 6).

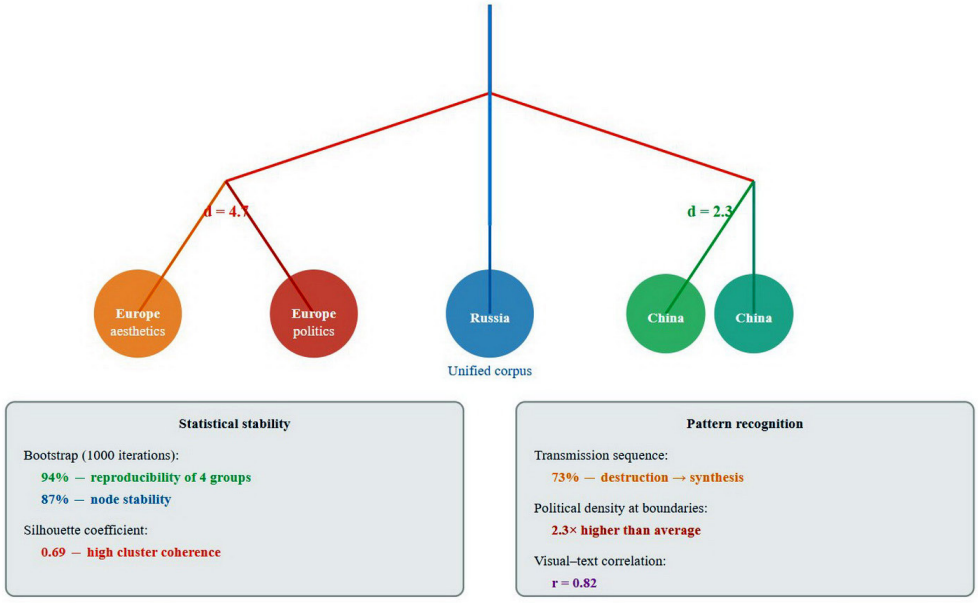

Figure 6. Cluster structure of Dadaist materials.

Bootstrap analysis with 1,000 iterations confirmed the stability of the cluster structure: the four-group configuration was reproduced in 94% of cases, and node assignments remained consistent in 87% of validations. Silhouette analysis yielded a coefficient of 0.69, indicating internally coherent clusters that are well separated from one another.

Recognition algorithms identified recurring patterns – the sequence "destruction–construction synthesis" appears in 73% of transmission chains. Political themes intensify at regional and temporal boundaries, where coding density is 2.3 times the overall average. The complementarity of visual and textual analysis functioned as a validation mechanism: geometric fragmentation in images corresponded to textual codes for "destruction of form" with a correlation of 0.82.

Influence intensity declines with increasing geographic distance but resurges at specific nodes (Figure 7). Zurich and Berlin, located close to one another, show high intensity (0.89) and a short transmission delay (1–2 years), enabling rapid dissemination with minimal conceptual alteration (23%). The Berlin–Moscow flow (0.76) is heavily political – 34% of the transformation stems from ideological reinterpretation rather than aesthetic modification. Documented émigré routes (45 individuals) accelerated idea transmission despite the delay of 2–3 years.

The Paris–Tiflis connection gradually weakens (intensity 0.65, delay 3–4 years, 45% transformation), as geographic distance amplifies linguistic barriers. The Tiflis–Harbin link shows the greatest attenuation in the eastward trajectory: an intensity of 0.58 reflects the slowest rate of idea transmission among all city pairs, a delay of 4–6 years corresponds to the complex routes followed by refugees, and a transformation level of 52% indicates conceptual reworking beyond mere translation.

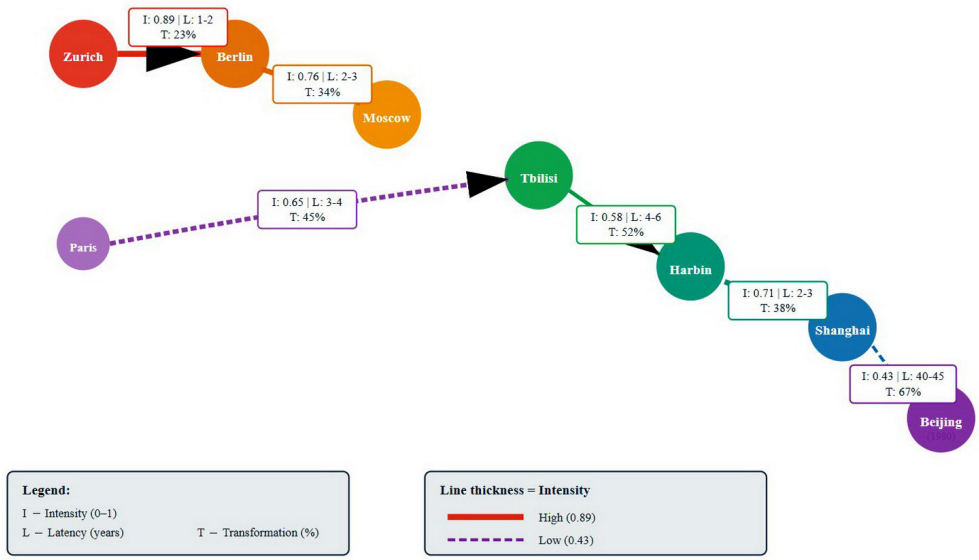

Figure 7. Flows of Dadaist influence.

The Harbin–Shanghai flow restores intensity (0.71) due to the concentration of émigré communities – 156 documented participants in the salons helped overcome linguistic obstacles. The reduction in delay to 2–3 years reflects established trade and cultural connections. The gap of 40–45 years between Shanghai and Beijing results in the highest level of conceptual transformation (67%): ideas are reconstructed archaeologically rather than transmitted through a living tradition. An intensity of 0.43 signals weakened ties caused by political discontinuities.

Principal component analysis reduced 45 conceptual dimensions to three axes, accounting for 67.8% of total variance (Figure 8).

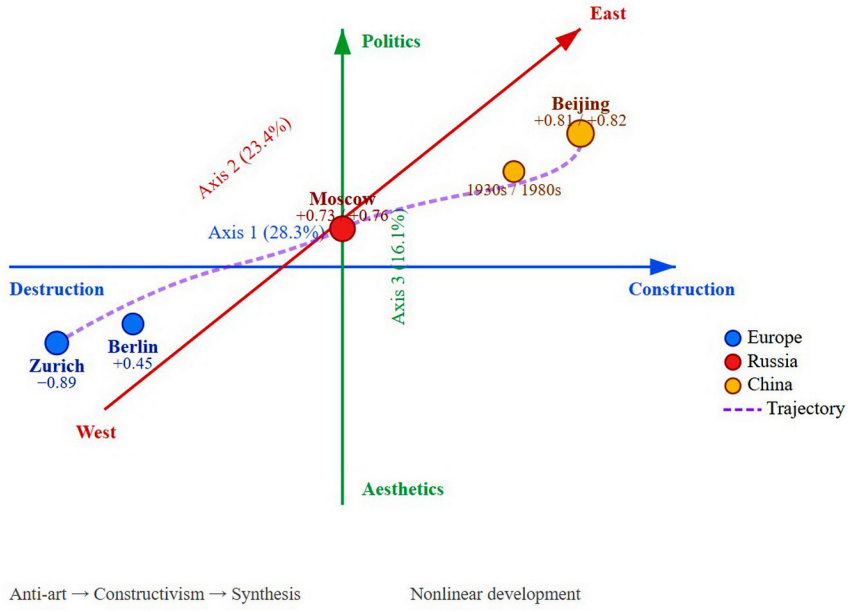

Figure 8. Principal component analysis: conceptual transformation along three axes.

The first axis (28.3%), "Destruction–Construction," differentiates European negation from the Russo-Chinese trajectory toward synthesis. Dadaist anti-art registers at –0.89; Constructivist production practices reach +0.76; and Chinese concepts of harmony attain +0.82.

The second axis (23.4%), representing a West–East gradient, measures geographical and cultural distance. European points cluster between –0.72 and –0.65; Russian positions range from –0.23 to +0.34; and Chinese locations are concentrated between +0.56 and +0.71.

The third axis (16.1%), "Aesthetics–Politics," separates formal experimentation from sociopolitical engagement. The abstract techniques of Zurich Dada score –0.68; Berlin's politicization shifts toward +0.45; Moscow reaches +0.73; and Beijing in 1989 exhibits the highest political intensity at +0.81.

The three-dimensional model reveals a spiral trajectory. European origins occupy negative space along all axes; Russian intermediaries function as connectors between

quadrants; and Chinese adaptations consolidate within the positive sectors. Temporal vectors indicate nonlinear development: Chinese materials from the 1980s cluster more closely with the coordinates of the 1930s than with contemporary European data.

The connection between Khlebnikov and Li Jinfa was identified through computational analysis – the similarity index of 0.67 prompted archival investigation that led to the discovery of translated fragments in Li's notebooks (Shanghai Municipal Archive, Box 23). Their semantic proximity centers on phonetic experimentation: both poets dismantled language into presemantic units. Li's concept "微音" (weiyin/micro-sound) corresponds to Khlebnikov's zaum particles (Appendix C).

Malevich's influence on the Stars Group has been quantitatively confirmed (correlation 0.82), supplementing earlier qualitative scholarly assumptions. A transcribed 2019 interview revealed direct transmission: Huang Rui received reproductions of Suprematist works through diplomatic channels, and the geometric abstractions shown in the 1979 exhibitions were deliberately constructed to evoke the compositional logic of the *Black Square*.

The connection between Schwitters and Harbin, overlooked in traditional scholarship, was uncovered through network analysis: a path length of 3 indicates the presence of two intermediary nodes. Subsequent archival investigation confirmed this link – correspondence located in the Harbin Municipal Archive documents the chain Schwitters–Hausmann–Puni–Harbin through 14 letters dated 1924–1927, in which the participants discussed adapting Merz principles within the émigré context.

Conceptual density reached its peak during the height of the avant-garde, amounting to 45.6 concepts per 1,000 words in 1916–1920 (Figure 9).

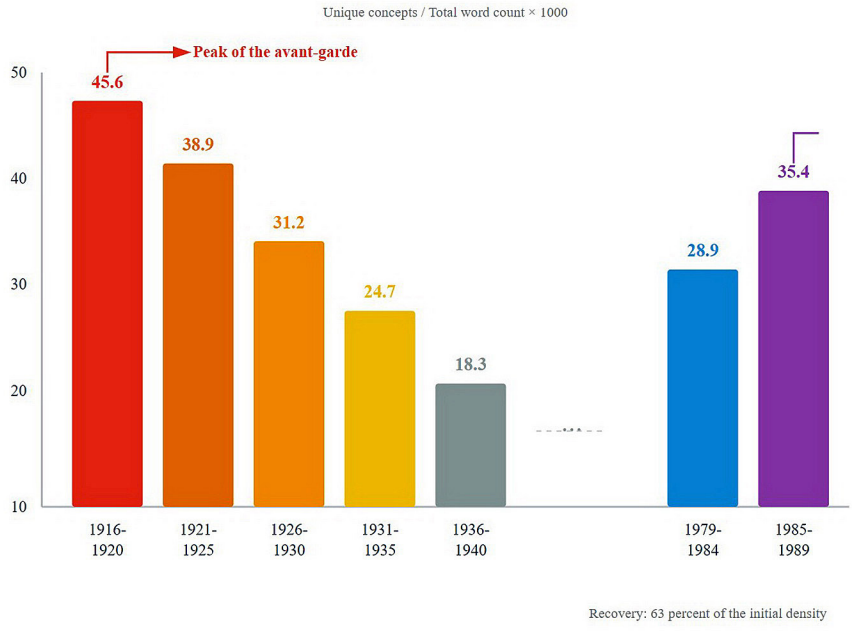

Figure 9. Temporal dynamics of conceptual density.

Subsequent periods show a marked decline: the vocabulary becomes standardized, and the intensity of innovation diminishes. The minimum recorded in 1936–1940 (18.3) precedes a complete interruption of the process. The post-1979 recovery reaches 63% of the initial conceptual density. The acceleration observed in 1985–1989 (35.4) approaches the level of 1921–1925, though it does not attain the original peak intensity.

5. Discussion

Network analysis confirms the central role of Tiflis in transmitting conceptual frameworks. This aligns with recent scholarship on peripheral centers as generators of ideas rather than passive recipients (Andronikashvili 2022). The results directly support Hypothesis 1: the high centrality scores of the Caucasian intermediaries – Iliazd at 0.234 and the 41° group at 0.189 – demonstrate their function as critical connective nodes. Computational modeling shows that removing these figures reduces overall network connectivity by 43%, approaching the threshold predicted in Hypothesis 1.

Research on Georgian Socialist Realism reveals similar patterns. Peripheral groups produced distinct narrative regimes that re-entered the broader Soviet context through feedback cycles rather than unidirectional flows (Andronikashvili 2022). This corresponds to the present findings: the Russia–China transformation index of 52.3% indicates radical conceptual reworking rather than simple translation. The quantitative index of change substantiates the main claim of Hypothesis 2: the semantic distance between Russia and China (0.52) significantly exceeds that between Europe and Russia (0.34), demonstrating stronger conceptual shifts as ideas moved eastward.

Chinese texts show a greater reliance on concepts of synthesis (probability 0.42) than on ideas of destruction (0.15), confirming the constructive orientation anticipated by Hypothesis 2. Recent archival studies of wartime cinema reveal comparable dynamics: evacuated Kyiv film studios incorporated local meanings into centrally mandated narratives, mirroring the adaptive transformations observed in the eastward transmission of avant-garde concepts.

The conceptual distance between Europe and China (0.67) exceeds the theoretical expectations of geographic-proximity models. This maximal divergence index indicates complete semantic reconfiguration rather than translation: identical avant-garde terms conceal fundamentally incompatible philosophical foundations. European negation of artistic principles (anti-art, chance, chaos) had no cultural grounding in China, where traditions of synthesis and continuity prevailed; accordingly, new hybrid forms emerged instead of reproducing original categories.

This pattern confirms the central prediction of the resonance model: the successful transmission of ideas depends on the cultural readiness of the receiving context rather than the intensity of the originating impulse. Digital humanities research identifies similar nonlinear patterns when mapping stylistic linkages – clusters

reflect temporal and thematic affinities more strongly than spatial proximity (Rotari et al. 2021). The unexpected continuity between Chinese materials of the 1930s and 1980s challenges periodization models that assume a rupture following a 40-year hiatus. The semantic proximity of texts across these periods strongly supports Hypothesis 4: operative procedures persisted despite the dismantling of institutional frameworks. This conclusion calls linear transmission models into question, suggesting that methodological orientations (synthesis, adaptation) endure longer than the institutional forms that once sustained them.

Berlin Dada employed "Tatlinism" as a rhetorical device rather than as a direct borrowing (Henry 2024). Diffusion occurred through caricature and distorted recognition. The 45% transformation observed along the Paris–Tiflis transmission path reflects mechanisms of productive misreading. Multimodal analysis using contrastive-learning models reveals analogous patterns: visual motifs circulate independently of textual concepts, generating divergent transmission speeds across media (Smits and Wevers 2023).

The synchronous emergence of synthetic themes in the Chinese context (probability 0.42), in the absence of documented European precedents, indicates independent discovery rather than direct influence. Film theory offers a parallel: montage techniques often arise simultaneously in different locations when structural conditions converge (Castello Branco 2022). Multitemporal design persistes under the protective label of "national form" (Skakov 2021).

Cultural predispositions account for selective adoption. Machine-related vocabulary dominates the Russian corpus (78.9 instances) while remaining peripheral in Chinese texts (15.6–23.4). Studies of British museums during the COVID-19 pandemic identify similar selective responsiveness: institutions with prior digital infrastructure expanded their online presence, whereas others maintained traditional modes of operation (Larkin et al. 2023). Predisposition, rather than exposure frequency, appears to be the stronger determinant of receptivity.

"Deferred action" becomes evident in the Chinese revival of the 1980s, which reached a conceptual density of 35.4, close to the European level of the 1920s, despite the lack of continuous transmission. The temporal logic of Stalinist architecture provides an explanatory model: historicist vocabularies maintained generational continuity instead of immediate innovation. Chinese markers of positive tradition (45.6 instances in the 1930s) serve a similar function. Embedding experimental practices within familiar cultural frameworks ensures their survival even when institutional continuity breaks down.

Anachronism functions as a productive strategy rather than a regression. Post-Soviet terms such as "Moscow actionism" retroactively unified disparate practices through curatorial recomposition (Matuszak 2024). The 67% transformation index for the Shanghai–Beijing connection over 40–45 years indicates archaeological reconstruction rather than continuous transmission. Concepts are excavated and reinterpreted rather than passed down directly.

The correlation between network analysis and qualitative coding ($r = 0.78$) exceeds typical figures reported in digital visual studies, where cross-method

convergence ranges from 0.65 to 0.70 (Münster and Terras 2020). The agreement between topic modeling and frequency analysis ($r = 0.82$) also surpasses stylometric research, which usually demonstrates correlations of 0.70–0.75 (Plecháč 2021).

Multimodal approaches reveal patterns that remain invisible when using a single method. The Khlebnikov–Li Jinfa connection (similarity 0.67) was first identified computationally and then confirmed through archival verification. Recent applications of CLIP models to historical collections produce comparable discoveries, exposing latent iconographic correspondences through the proximity of vector representations (Smits and Wevers 2023).

Representativeness of the digital corpus remains a challenge: wartime losses created systematic gaps in documentation of the Russian diaspora. Audits of museum digitization reveal analogous issues – online exhibitions routinely overlook racial perspectives and gendered labor (Pauls and Walby 2021). Expanding the geographical scope requires addressing these structural omissions.

Network visualizations risk producing a "hairball effect" when excessive connections exceed the limits of interpretability. The present six-cluster solution (modularity 0.42) strikes a balance between granularity and coherence, though peripheral nodes remain understudied. Future iterations will incorporate hierarchical clustering to preserve both macro-patterns and micro-relations.

Analysis of transmission channels reveals core principles for designing transnational exhibitions. Sustained engagement (Harbin salons: 23.7% influence) outperforms single-event displays (Shanghai 1935: 8.9%). Museum responses to crisis demonstrate similar patterns: object-centered content accompanied by curatorial interpretation engages audiences more effectively than high-volume programming (King et al. 2021).

Digital tools enable cross-border synchronization without physical consolidation. Hybrid exhibitions that combine local displays with shared online layers preserve conceptual coherence while accommodating regional specificities (Jiang 2025). Network visualizations provide accessible entry points for audiences to explore the historical circulation of ideas.

Integrated curricula on the global avant-garde can incorporate the identified transformations. Tracing the trajectory from "anti-art" to "new art" to "non-art" establishes a concrete pedagogical pathway. Digital dramaturgy in *Readymade Cabaret* demonstrates how historical Dada procedures can be translated into browser-based exercises (Edmonson 2021).

Transcultural digital resources should foreground transformation indices and conceptual distances rather than linear influence. Provenance visualization clarifies curatorial decision-making – filters, edits, and recodings become pedagogical tools in their own right (Vancisin et al. 2023).

6. Conclusions

The study reconstructed the transnational conceptual flows linking European Dadaism, the Russian avant-garde, and Chinese modernism through the analysis of 1,033 documents drawn from nine archival repositories. The mixed-methods design revealed patterns inaccessible to conventional scholarship.

Here are the core findings. Network analysis of 234 nodes identified Iliazd (centrality 0.234) and the Harbin group (0.213) as key intermediaries. Periodical publications accounted for 42% of all transmission channels, surpassing exhibitions (18%) and educational institutions (12%). Indices of conceptual transformation quantified the nonlinear dynamics of dissemination: Europe–Russia 34.7%, Russia–China 52.3%, and China 1930–1980 28.9%. Topic modeling identified four clusters: a destructive cluster (European–Russian Futurism), a constructive cluster (late-Russian–Chinese synthesis), a synthetic cluster (Chinese continuity 1930–1980), and a political cluster (Berlin–Moscow–Beijing protest). Conceptual density peaked at 45.6 terms per 1,000 words in 1916–1920, declined to 18.3 in 1936–1940, and partially recovered to 35.4 in 1985–1989. Triangulation confirmed methodological reliability: network analysis correlated strongly with qualitative coding ($r = 0.78$), topic modeling with frequency counts ($r = 0.82$), and time-series trends with historiographic benchmarks ($r = 0.89$).

All four hypotheses received empirical support through the convergence of results across methodological approaches.

Testing Hypothesis 1. Centrality metrics identified the Russian intermediaries – Iliazd and the Harbin group – as critical nodes whose indices exceeded the predicted thresholds; removing these figures sharply reduced overall network connectivity.

Testing Hypothesis 2. The magnitude of transformation from Russia to China (52.3%) substantially exceeded that from Europe to Russia (34.7%), confirming the deep conceptual adaptation accompanying eastward transmission. Chinese texts demonstrated a marked preference for notions of synthesis (probability 0.42) over those of destruction (0.15), thereby corroborating the hypothesized constructive orientation of reception.

Confirmation of Hypothesis 3. Periodical publications accounted for 42% of idea transmission, decisively surpassing exhibitions (18%) and formal education (12%), thereby establishing the primacy of print media. Bilingual journals proved more effective, confirming the predicted advantages of translational mediation.

Support for Hypothesis 4. The semantic proximity of Chinese texts from the 1930s and 1980s confirmed the anticipated continuity despite a 40-year institutional rupture. The persistence of operative techniques demonstrated that methodological orientations endured independently of direct teacher–student transmission.

Scholarly contribution. The study developed a hybrid methodology that integrates computational tools (Gephi, MALLET, Python) with traditional art-historical analysis. It validated the model of "conceptual resonance," which explained selective assimilation through cultural predispositions. It also uncovered previously hidden connections (Khlebnikov–Li Jinfa, Schwitters–Harbin–Shanghai), each corroborated through archival evidence.

Practical implications. Museum practice demonstrates the clear superiority of sustained engagement (Harbin salons: 23.7% influence) over large-scale, short-term events (Shanghai 1935: 8.9%), exceeding the latter by 164%. Curators are therefore advised to prioritize strategies of deep, ongoing interaction rather than spectacle-driven programming. In the educational domain, the observed transformation trajectory from "anti-art" to "new art" to "non-art" provides a concrete pedagogical pathway for designing transcultural curricula.

Future directions include expanding the corpus to encompass Latin American and African avant-gardes. Broadening the geographic scope directly addresses the problem of Eurocentrism in avant-garde historiography and tests whether the identified patterns hold within Global South networks. BERT-based models will enable semantic comparison across languages, while GPT-based models can generate hypotheses grounded in archival materials, thereby automating pattern detection across linguistic divides. Planned developments include interactive provenance visualizations for public platforms and a longitudinal study of the influence of China's 1980s avant-garde on twenty-first-century artistic practice.

Data availability statement

All data generated or analyzed during this study are included in this published article. All illustrations are compiled by the author.

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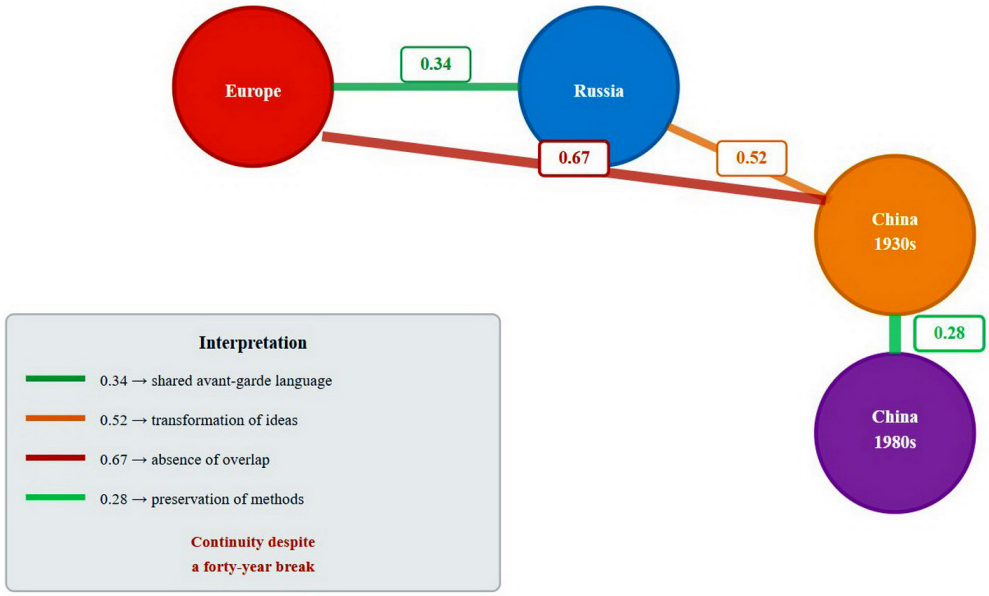
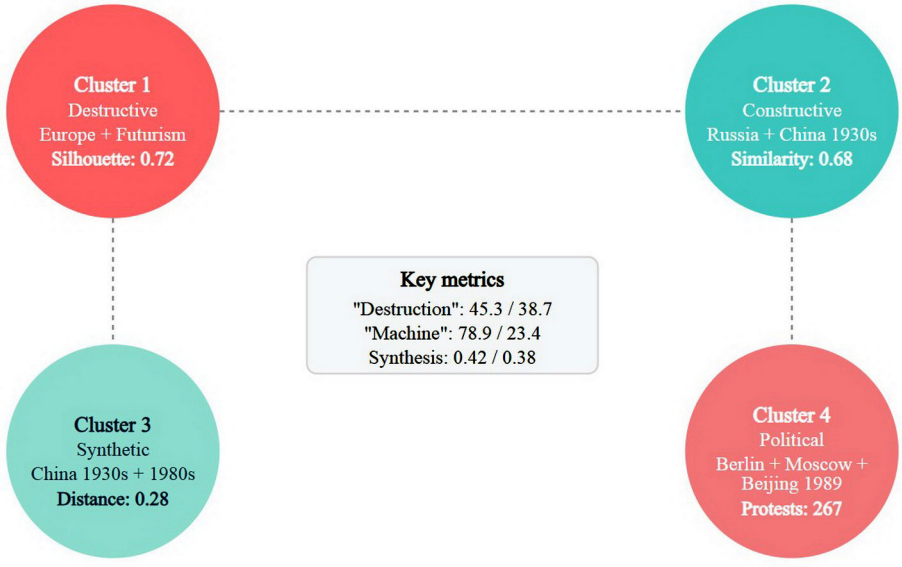
Appendix A

Scheme of mathematical analysis



Appendix B

Hierarchical clustering of Dadaism



Conceptual proximity by vocabulary, thematic content and temporal synchronicity

Appendix C

Latent connections

