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ORIGINAL ARTICLE

Evolving visual narratives: A decadal analysis of science-art integration in Chinese STM journals

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ABSTRACT

Objective. The cover design of scientific, technological, and medical (STM) journals served as a critical interface between science and art, playing a pivotal role in attracting readers, conveying research themes, and enhancing the visual identity of journals. This study aimed to elucidate the characteristics of cover design in Chinese STM journals.

Design. This study analyzed covers from 120 Chinese STM journals supported by Project for Enhancing International Impact of China STM Journals (PIIJ) and Excellence Action Plan for Chinese STM Journals (EAPJ) projects, spanning 17 essential science indicators subjects.

Results. The analysis indicated that 56.67% of journals have adopted dynamic cover renewal, exhibiting notable disparities across different disciplines. A substantial majority of selected journals in the domains of biology, chemistry, and associated fields adopted dynamic renewal, while less than 50% of engineering and clinical medicine journals did so. A further analysis revealed a substantial decrease in the average interval between journal launch and dynamic cover adoption, from 51.68 years prior to 1980 to 0.53 years following 2010. A comprehensive analysis of 4,059 covers from 68 journals that adopted dynamic cover renewal revealed that non-thematic designs were predominant (67.87%), primarily featuring experimental objects and flowcharts, particularly in agricultural, environmental, and materials sciences. However, a notable increase in the proportion of thematic cover designs was observed, reaching up to 32.13% during the period from 2013 to 2021, particularly in chemistry, clinical medicine, and molecular biology. Of these, artistic drawings (28.74%) surpassed simulations (3.39%) as the preferred expressive form. A higher degree of thematic design activity was exhibited by journals in multidisciplinary, molecular biology and genetics, and neuroscience, while journals in environmental, plant sciences, and other related fields demonstrated prolonged but low-percentage usage.

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Conclusions. These findings underscored the mounting integration of science and art in the covers of STM journals, reflecting both disciplinary trends and evolving design strategies in the realm of Chinese academic publishing.

Value. This study offered novel insights into the evaluation of the internationalization progress of Chinese journals.

Keywords: STM journals; cover renewal; cover design strategy; essential science indicators subjects.

INTRODUCTION

The integration of science and art in journal covers has been demonstrated to enhance the visual identity of journals and improve the effectiveness of scientific communication (Dauben *et al.,* 2023; Dayan & Wang, 2022; Goldstein, 2018; Trendstalk Special Issue: Third Anniversary, 2022; Trumbo, 2000). International leaders in the field, including *Science, Nature,* and *Cell,* have long employed dynamic and thematic cover designs to showcase breakthroughs and engage a broader audience (Shangguan & Xie, 2022; Wang *et al.,* 2013, 2014b). The interplay and examination of art and science have reinvigorated discourse (Chappell & Muglia, 2023; Conway & Livingstone, 2007; Goldstein, 2018; Houtman & Vijlbrief, 2023; Trendstalk Special Issue: Third Anniversary, 2022; Trumbo, 2000). However, in China, the development of journal cover design has lagged behind. As of 2012, the implementation level of cover design in scientific, technological, and medical (STM) journals in China was only 33.33%, while that in the top-tier scientific journals was approximately 58.94% (Wang *et al.,* 2014a, 2014c). The prevailing static and non-thematic approaches employed in journal cover design have been found to fall short in fully capturing the essence of scientific innovation. This disparity underscores the necessity to explore strategies through which Chinese STM journals can leverage cover design to enhance their global visibility and academic impact. Despite the mounting recognition of the significance of cover design, Chinese STM journals grapple with numerous challenges, including constrained resources, an absence of interdisciplinary collaboration, and an inadequate emphasis on visual communication. Wang and Yao (2014) have advocated for the establishment of specialized scientific image databases in China. Tang *et al.* (2022) have stressed the importance of collaboration among editors, authors, and designers to balance scientific rigor with artistic storytelling and cultural integration.

In order to promote the comprehensive development of Chinese STM journals, especially established top-tier journals, China launched the Project for Enhancing International Impact of China STM Journals (PIIJ) in 2013. The objective of this project is to enhance the quality and global competitiveness of China's scientific publications. This initiative marks a significant milestone in the evolution of Chinese STM journals. In 2019, the Excellence Action Plan for Chinese STM Journals (EAPJ) augmented funding and support, constituting the most substantial investment in journal development in China's history. These initiatives have catalyzed substantial advancements in the realm of journal development. Notably, the evolution of cover design exhibits disparities across different disciplines, with many journals still relying on conventional, non-thematic approaches. As of 2020, the renewal rate of cover designs in biomedical fields was less than 30% (Zhang *et al.,* 2020). However, there has been a gradual shift in journal cover designs, with text-heavy layouts giving way to full-image designs that incorporate storytelling, cultural integration, and structured visuals. This shift aims to enhance reader engagement and international competitiveness (Dayan & Wang, 2022; Gao, 2023; Wang *et al.,* 2022). However, there is a paucity of research on the development of cover design strategies across disciplines in Chinese STM journals. The objective of this study is to provide insights into the achievements and ongoing challenges of cover designs and the potential impact of recent policy interventions in funded journals. To this end, the study classified cover designs into thematic and non-thematic categories, design strategies, and analyzed their usage across disciplines. The findings indicate that 56.67% of funded journals have adopted dynamic cover renewal,

with significant variations in adoption rates and design strategies across disciplines. Thematic designs, particularly those incorporating artistic elements, have exhibited a notable increase since 2013, reflecting a growing emphasis on scientific visualization in Chinese STM journals. These results underscore the progress achieved in cover design and offer valuable recommendations for further enhancing the visual and academic impact of Chinese scientific publications.

2. MATERIAL AND METHODS

2.1. Data collection

The complete 2013-2019 PIIJ and EAPJ supporting lists were made publicly available online (https://www.cast.org.cn/). This study encompassed all journals that received support from both PIIJ and EAPJ. The years when the journal was launched, switched to dynamic cover renewal, and the front journal covers published during 2013-2021 were manually checked at each journal's website. In instances where a journal is published following the article serial publishing (ASP) model online, the status of the cover design in the offline print version was confirmed with the journal's editorial office.

2.2. Cover selection criteria

In the event that a journal undergoes a change in its cover design on an issue basis, the journal will be designated as a journal with dynamic cover renewal. Conversely, other covers would be classified as those with fixed cover design. The selection of covers was conducted from journals exhibiting dynamic cover renewal and published during the period from 2013 to 2021. In instances where the cover image is designed around the theme of specific article(s) in the current published issue, employing pluralistic art design styles such as artistic drawing and simulation, it would be classified under the thematic cover design category. Conversely, if the cover image features a photograph of the research subject, a scene, an experimentally derived image with special effects, a flowchart, or a schematic diagram, it would be classified under the non-thematic cover design category.

2.3. Statistical analysis

The utilization rate of cover designs in a journal is calculated by dividing the number of covers in each category by the total number of covers for the journal. This rate is employed as an analytical sample for the utilization rate of such cover design in the corresponding essential science indicators (ESI) subject. The data presentation format varies depending on the type of figure, with detailed information provided in the figure legend. To ascertain any statistically significant disparities among design methodologies and ESI subjects, analysis of variance (ANOVA) was conducted. One-way ANOVA was employed to compare the usage of four expression forms in non-thematic cover design. To further explore the thematic cover design, a two-tailed unpaired Student's t-test was employed to compare two forms. Tukey's honest significant difference (HSD) post hoc test was used to compare treatments with a controlled familywise error rate for multiple comparisons among ESI subjects. The data visualizations and analyses were conducted with R version 4.2.0 (R Core Team, 2014). A value of $p < .05$ was considered statistically significant.

3. RESULTS

3.1. Analysis of dynamic cover renewal in 120 Chinese STM journals supported by PIIJ and EAPJ projects

A total of 120 Chinese STM journals supported by both the PIIJ and EAPJ projects were included in this study (see Tables 1 and S1). These journals were subsequently categorized into 17 ESI subjects. The five ESI subjects with the highest number of journals were engineering, clinical medicine, geosciences, materials science, and physics. The analysis further revealed that 56.67% of the journals employed dynamic cover renewal, with variations observed across different ESI subjects (Figure 1). The utilization of dynamic cover renewal was observed in all journals within the domains of biology & biochemistry, immunology, molecular biology & genetics, neuroscience & behavior, and chemistry. Among the eight ESI subjects, including plant & animal sciences, materials science, physics, and geosciences, the adoption of dynamic cover

renewal ranged from 50% to 80%. In contrast, only 43.75% of engineering journals and 26.67% of clinical medicine journals adopted dynamic cover renewal. It is noteworthy that no journals in the field of computer science or mathematics have adopted this practice.

ESI subjects	Number of journals
ENGINEERING	16
CLINICAL MEDICINE	15
GEOSCIENCES	13
MATERIALS SCIENCE	12
PHYSICS	12
PLANT & ANIMAL SCIENCE	10
ENVIRONMENT-ECOLOGY	6
COMPUTER SCIENCE	6
CHEMISTRY	6
AGRICULTURE SCIENCES	5
MOLECULAR BIOLOGY & GENETICS	4
PHARMACOLOGY & TOXICOLOGY	4
MATHEMATICS	4
MULTIDISCIPLINARY	3
BIOLOGY & BIOCHEMISTRY	2
NEUROSCIENCE & BEHAVIOR	1
IMMUNOLOGY	1
Total	**120**

Table 1. The ESI distribution of 120 Chinese STM journals. Note. ESI: Essential science indicators; STM: scientific, technological, and medical.

3.2. Evolution of dynamic cover renewal in Chinese STM journals

In order to assess the evolution of journal cover, the initiation timelines and transition intervals between journal launch and dynamic cover renewal have been examined. The findings revealed that the journals under scrutiny were initiated between 1935 and 2017 (Figure 2A). The interval time has undergone a significant decrease from 74 to 0 years, irrespective of their ESI subject classification. A notable increase in the adoption of dynamic cover renewal was observed, with 20.29% of journals adopting this practice in the 2000s, rising to 68.12% in the 2010s. Since the 2000s, 26.32% of journals adopted dynamic cover renewal at their launch, increasing to 86.67% in the 2010s, with an average of 92.31% during 2013-2021. The implementation of dynamic cover renewal has been observed to occur in journals that were launched in more recent years. To examine trends across different decades, journals were categorized into five groups: those launched before 1980 (seven journals) and those launched in each subsequent decade (Figure 2B). The findings indicate a substantial decline in the mean renewal interval, from 51.68 years to 0.53 years. Furthermore, the average interval time

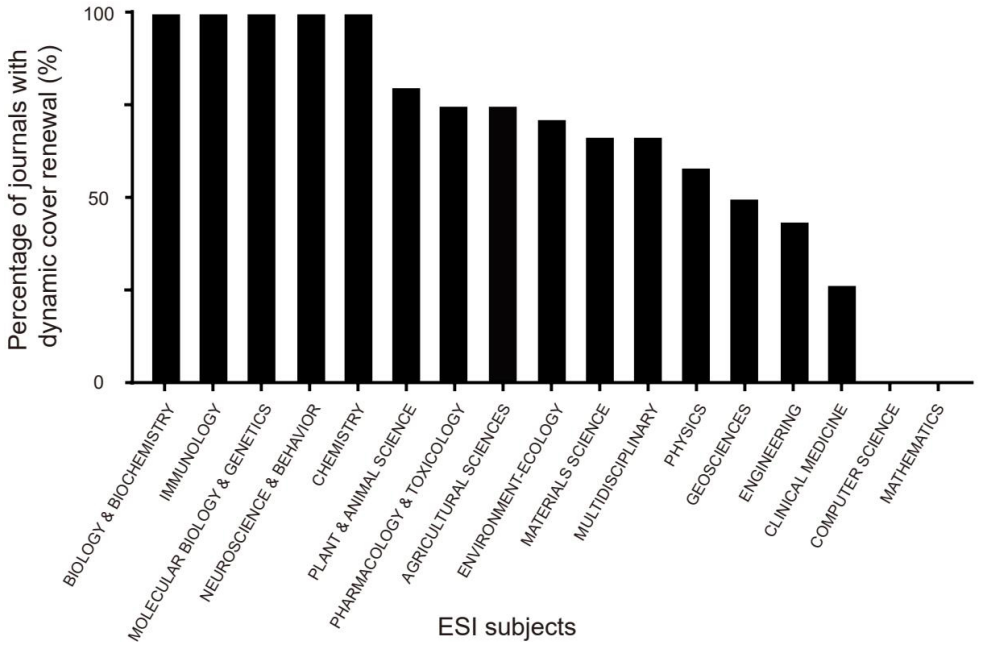

Figure 1. The average usage of dynamic cover renewal in 120 Chinese STM journals across ESI subjects. Note. ESI: Essential science indicators; STM: scientific, technological, and medical.

exhibited variation across ESI subjects (Figure 2C). For instance, in eight ESI categories, including chemistry, multidisciplinary, and geosciences, the interval ranged from 20 to 30 years. Conversely, five ESI categories, including biology & biochemistry and molecular biology & genetics, exhibited shorter intervals of 10 to 19 years. Agricultural sciences, clinical medicine, and immunology had the shortest intervals, averaging less than 10 years.

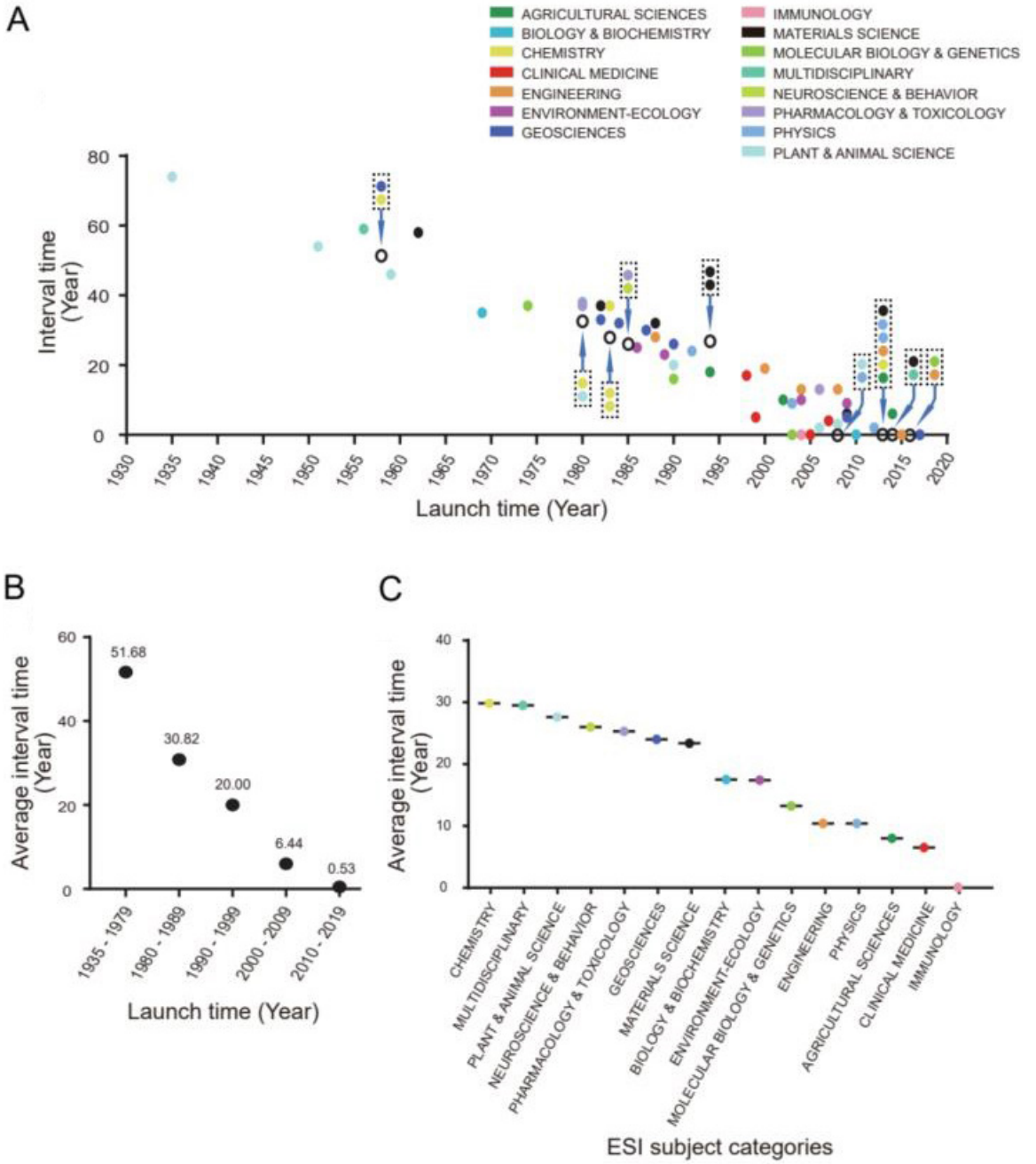

Figure 2. Analysis of the interval time between journal launch and the adoption of dynamic cover renewal. (A) Interval time for each journal with dynamic cover renewal. Each dot represents a journal. Different colors indicate different ESI subjects. The hollow black circles represent journals with identical launch years and interval times. (B) The average decadal variations among journals. (C) The average interval variations among ESI subjects. Note. ESI: Essential science indicators.

3.3. Non-thematic cover design in China's STM journals

The selection of journal covers for analysis was based on a set of predetermined criteria. The final sample included 4,059 journal covers from 68 different journals. The cover design strategies were manually classified into two categories: thematic and non-thematic designs. The analysis revealed that 67.87% of the journals employed non-thematic design strategies for their covers. The non-thematic cover designs were further categorized into four expression forms: (1) direct use of photos depicting experimental objects and scenes, (2) experimental results (including those with color and form processing), (3) schematic/flowcharts, and (4) souvenir photos (featuring representative individuals, iconic buildings, and scenes) (Figure 3A). Statistical analysis revealed that the average usage proportion of photos showing experimental objects and scenes, as well as schematic/flowcharts, was significantly higher compared to that of experimental results and souvenir photos ($F = 18.68$, $p < .001$). Furthermore, the usage proportion of the three main forms varied significantly across different ESI subjects. As illustrated in Figure 3B-D, the analysis revealed distinct patterns across various disciplines. Agricultural science, environment-ecology, geosciences, pharmacology & toxicology, and plant & animal science journals exhibited a higher average usage proportion of research object or scene photos as covers compared to other disciplines (Figure 3B). The utilization of experimental result pictures as covers exhibited relative consistency across most ESI subject categories, with materials science journals demonstrating the highest proportion, while environment-ecology, immunology, and pharmacology & toxicology journals displayed the lowest usage (Figure 3C). A comparison of the usage of flowchart pictures as journal covers reveals a higher frequency in the fields of biology & biochemistry, chemistry, pharmacology & toxicology, and physics, as compared to other subjects. Conversely, their usage was notably lower in agricultural sciences, environment-ecology, immunology, neuroscience & behavior, and plant & animal science journals (Figure 3D).

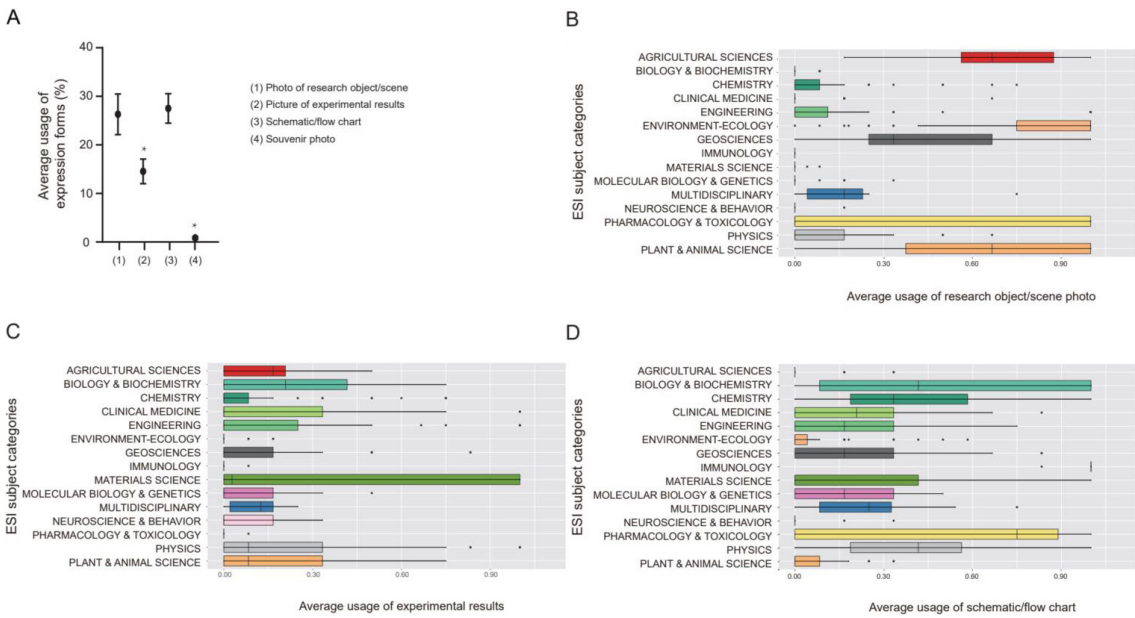

Figure 3. Analysis of utilization and disciplinary differences in four non-thematic cover design strategy. (A) Average usage of four expression forms in designed covers. (B-D) Box plots showing the differences in the average usage proportion of experimental objects/scenes photos (B), experimental results (C), and schematic/flowcharts (D) across 15 ESI subjects. The data are indicated as the mean ± SEM. Tukey's HSD post hoc test was used to compare groups with controlled familywise error rates for multiple comparisons. $p < .05$ is significance level. *indicates the significant differences among groups. Note. ESI: Essential science indicators; HSD: Honest significant difference; SEM: Standard error of the mean.

3.4. Thematic cover design in China's STM journals

The analysis revealed that a mere 32.13% of journals employed a thematic cover design strategy. As illustrated in Figure 3, both the implementation rate and duration of continuous thematic cover usage exhibited significant variation across ESI subjects. The temporal trend revealed in the scatter pie chart demonstrates a gradual increase in thematic cover adoption across all ESI disciplines from 2013 to 2021 (Figure 4A(a)), with particularly notable growth in chemistry, clinical medicine, engineering, materials science, molecular biology & genetics, multidisciplinary, and neuroscience & behavior. Consequently, these disciplines exhibited higher average thematic design implementation rates compared to other subjects (Figure 4A(b)). Subsequent statistical analysis revealed substantial variability in thematic design adoption patterns across different disciplines (Figure 4B). Journals in chemistry, clinical medicine, and molecular biology & genetics exhibited both higher implementation rates and longer continuous usage durations (frequently exceeding five years). Conversely, while some journals in the fields of environment-ecology and plant & animal science maintained thematic designs for over five years, their overall adoption rates remained comparatively low. Materials science journals demonstrated particularly transient engagement, with most implementing thematic designs for less than two years. Thematic covers exhibited greater creative flexibility, with designs categorized into two primary forms: artistic drawing and scientific simulations. Statistical analysis revealed a significant predominance of artistic drawing (28.74% average usage) over simulation (3.39%) across journals ($t = 6.90$, $df = 134$, $p < .001$; Figure 5A). A discipline-specific analysis revealed elevated usage of artistic drawing in multidisciplinary, neuroscience & behavior, molecular biology & genetics, materials science, and chemistry journals compared to other fields (Figure 5B).

4. DISCUSSION

This study systematically analyzes the evolution of cover design strategies in Chinese STM journals, revealing significant trends and disciplinary variations. Among the 120 Chinese STM journals supported by national initiatives PIIJ and EAPJ, the adoption of dynamic cover designs has surged from 34.54% in 2013 to 56.67% in 2021. Furthermore, over 90% of newly launched journals have adopted dynamic cover designs in recent years. These statistics are indicative of a growing recognition of the efficacy of scientific visualization in enhancing journal visibility. Of particular note, disciplines such as biology, chemistry, and materials science have exhibited a nearly 100% adoption rate of dynamic cover designs, while computer science and mathematics have shown comparatively lower adoption rates. The interval between journal launch and dynamic cover adoption has undergone a precipitous decline, from 51.68 years to 0.53 years over the past two decades, suggesting a pronounced shift toward visual innovation in recent years. A comprehensive analysis of 4,059 covers from 68 journals reveals an average thematic design rate of 32.13%, showcasing a diverse range of designs across different disciplines. While non-thematic designs constituted less than 67.87% of the sample, this figure represents a substantial increase from 2013 to 2021. This shift is particularly noteworthy given the preponderance of artistic expression in leading journals such as *Nature* and *Science,* which underscores a global trend in journalistic communication. Exemplary cases can be found in *Cell Research, Signal Transduction and Targeted Therapy, Genes & Diseases,* and other publications. These findings underscore the growing integration of scientific communication and artistic expression in Chinese STM journals, highlighting a shift toward more sophisticated visual storytelling, which can enhance reader engagement and journal branding. The impact of government initiatives, such as the EAPJ, which is supported by studies demonstrating the efficacy of policy interventions in enhancing journal quality and visibility, is particularly salient in this context. However, challenges related to sustainability persist.

Nevertheless, challenges persist. A preponderance of non-thematic designs characterizes Chinese STM journals. This discrepancy may be indicative of disparities in editorial priorities and the availability of resources for artistic collaboration. Even among journals that employ thematic cover designs, disparities across

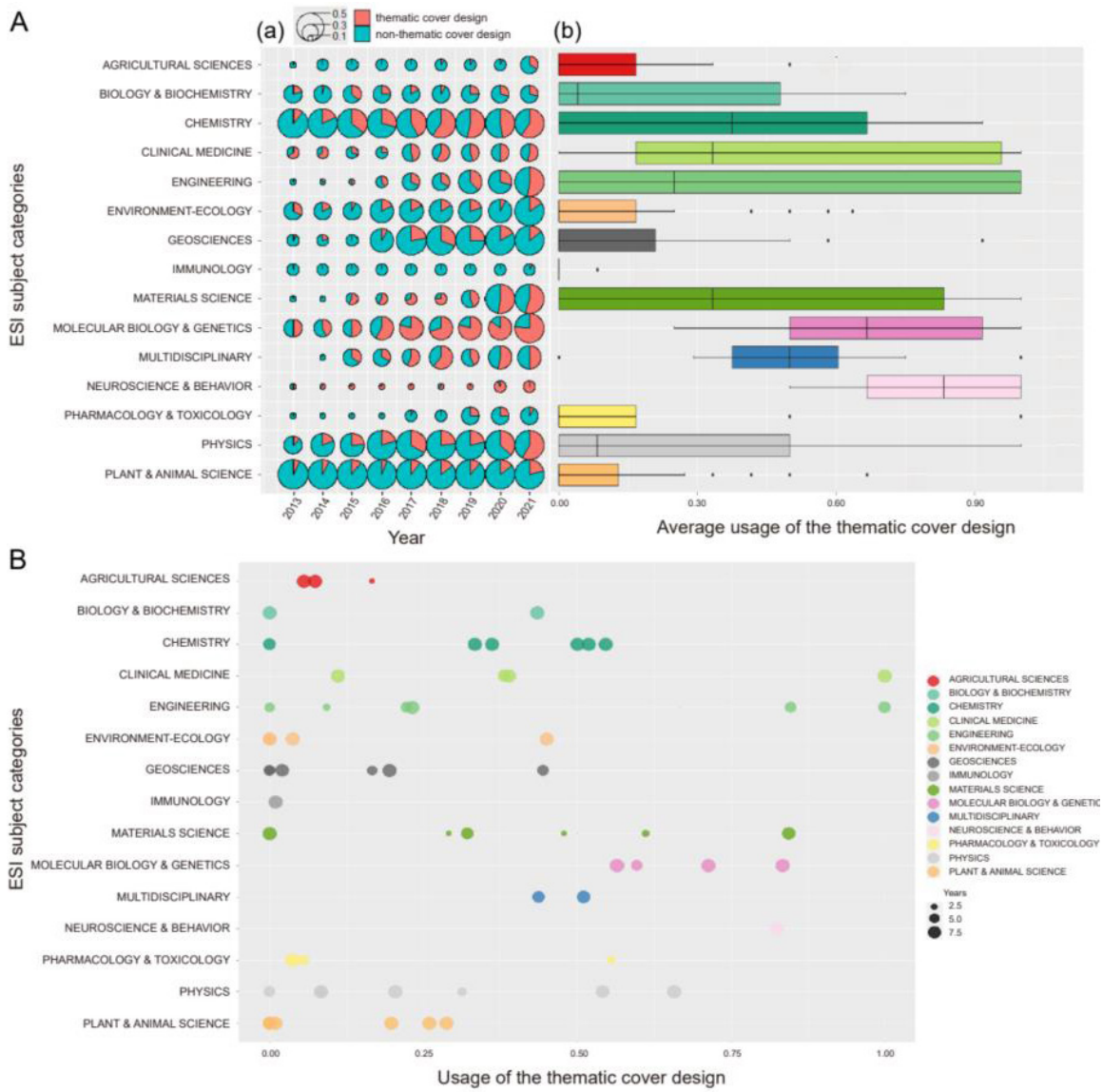

Figure 4. Thematic cover design: a cross-disciplinary comparison. (A) Different usages of non-thematic vs. thematic cover designs across 15 ESI Journals. (a) Scatter pie chart showing the annual changes in the usage of non-thematic and thematic cover designs from 2013 to 2021. Red part represents thematic cover design. Green part represents non-thematic cover design. The size of the pie chart shows the sample sizes each year. (b) Box plot showing the average usage of thematic cover design among ESI subjects. Tukey's HSD post hoc test was used to compare groups with controlled familywise error rates for multiple comparisons. $p < .05$ is significance level. (B) Usage of the thematic cover design in each journal belonging to various ESI subjects. Each color represents an ESI subject. Dot size corresponds to the duration of thematic cover design adoption by each journal. Note. ESI: Essential science indicators; HSD: Honest significant difference.

disciplines are evident. The preeminence of life sciences in thematic innovation may be attributed to the inherent visual nature of their research outputs, such as molecular structures and cellular processes. Conversely, the predilection for non-thematic designs in environmental, ecological, and agricultural science journals is likely attributable to long-standing editorial preferences that prioritize technical accuracy over aesthetic appeal. This tendency aligns with global practices, where journal covers function as "visual abstracts," distilling the

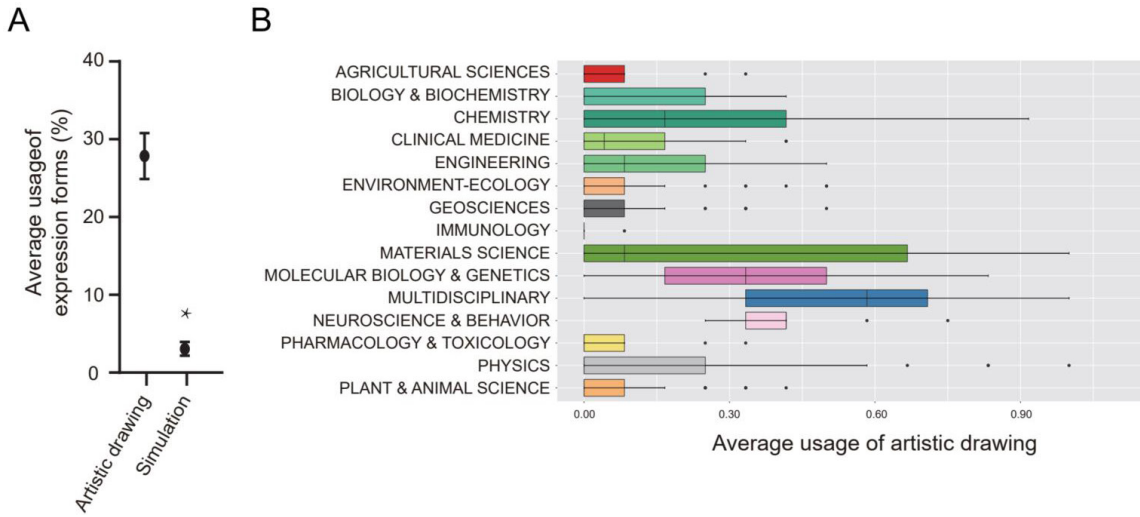

Figure 5. Analysis of utilization and disciplinary differences in two thematic cover design strategies. (A) Average usage of artistic drawing and simulation in designed covers. The data are indicated as the mean ± SEM. Two-tailed unpaired Student's t-test was used to compare two groups. *indicates the significant differences between two groups. (B) Box plots showing the differences in the average usage proportion of artistic drawing across 15 ESI subjects. The data are indicated as the mean ± SEM. Tukey's HSD post hoc test was used to compare groups with controlled familywise error rates for multiple comparisons. $p < .05$ is significance level. Note. ESI: Essential science indicators; HSD: Honest significant difference; SEM: Standard error of the mean.

essence of research into accessible imagery, through the collaboration between researchers and trained art-science collaborators (Chappell & Muglia, 2023; Dauben *et al.,* 2023; Goldstein, 2018; Houtman & Vijlbrief, 2023; Liu, 2022). For instance, *Cell* frequently utilizes artistic renditions of microscopic phenomena to engage both experts and the public. The inclination toward artistic representation in scientific illustration may be influenced by cultural biases or a deficiency in technical proficiency with computational design tools. This underscores the necessity for systematic targeted training programs, interdisciplinary design teams, trained art-science collaborators, and dedicated design budgets. The findings of this study carry significant practical implications for journal editors, policymakers, and researchers.

5. CONCLUSIONS

This study demonstrates the significant progress made in fostering art-science cover design strategies in elevating Chinese STM journals' global standing. This advancement has been propelled by government initiatives and an increasing acknowledgment of the significance of scientific visualization. The analysis reveals a marked increase in the adoption of dynamic and thematic designs, particularly in the life sciences, mirroring broader trends observed in global academic publishing. However, disparities in adoption rates across disciplines and the prevalence of non-thematic designs indicate the necessity for augmented efforts to promote innovation and collaboration in cover design. As the academic landscape evolves, dynamic cover renewal and the continued prevalence of visually compelling covers will remain pivotal in the future of scientific communication. Despite its contributions, this study has several limitations. Future studies should focus on expanding the sample, developing automated analysis tools, and measuring the impact of cover designs on reader engagement and citation rates. Meanwhile, editorial policies must prioritize sustained investment in visual communication.

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Conflict of interest

All authors declare no conflicts of interest.

Contribution statement

Huijie Zhang: Designed the project, analyzed the data, wrote the manuscript.

Huan Yin and Jing Zhao: Collected and analyzed the data.

Xiaozui Wang and Minghui Ran: Helped to design the project and collected the data.

All authors revised the manuscript.

Statement of data consent

The data generated during the development of this study has been included in the manuscript.

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Table S1. The list of 120 Chinese STM journals supported by both PIIJ and EAPJ.

Journal name	ISSN	ESI	Time	
			Launch (year)	Dynamic cover renewal (year)
Journal of Animal Science and Biotechnology	1674-9782	Agricultural Sciences	/	/
Rice Science	1672-6308	Agriculture Sciences	1994	2012
Journal of Integrative Agriculture	2095-3119	Agriculture Sciences	2002	2012
Crop Journal	2095-5421	Agriculture Sciences	2013	2013
Horticulture Research	2662-6810	Agriculture Sciences	2014	2020
Acta Biochimica et Biophysica Sinica	1672-9145	Biology & Biochemistry	1969	2004
Protein & Cell	1674-800X	Biology & Biochemistry	2010	2010
Science China-Chemistry	1674-7291	Chemistry	1958	2009
Chinese Journal of Catalysis	0253-9837	Chemistry	1980	2012
Chinese Journal of Chemistry	1001-604X	Chemistry	1983	2011
Chinese Journal of Polymer Science	0256-7679	Chemistry	1983	2011
Journal of Rare Earths	1002-0721	Chemistry	1983	2020
Journal of Energy Chemistry	2095-4956	Chemistry	2013	2013
Chinese Journal of Traumatology	1008-1275	Clinical Medicine	1998	2015
Asian Journal of Andrology	1008-682X	Clinical Medicine	1999	2004
World Journal of Pediatrics	1708-8569	Clinical Medicine	2005	2005
Frontiers of Medicine	2095-0217	Clinical Medicine	2007	2011
Asian Journal of Urology	2214-3882	Clinical Medicine	/	/
Chinese Journal of Cancer Research	1000-9604	Clinical Medicine	/	/
Chinese Medical Journal	0366-6999	Clinical Medicine	/	/
Chinese Neurosurgical Journal	2095-9370	Clinical Medicine	/	/
Hepatobiliary & Pancreatic Diseases International	1499-3872	Clinical Medicine	/	/
International Journal of Oral Science	1674-2818	Clinical Medicine	/	/
Journal of Geriatric Cardiology	1671-5411	Clinical Medicine	/	/
Journal of Integrative Medicine	2095-4964	Clinical Medicine	/	/
Journal Of Sport and Health Science	2095-2546	Clinical Medicine	/	/
World Journal of Emergency Medicine	1920-8642	Clinical Medicine	/	/
Computational Visual Media	2096-0433	Computer Science	/	/
Frontiers of Computer Science	2095-2228	Computer Science	/	/
Frontiers of Information Technology & Electronic Engineering	2095-9184	Computer Science	/	/
International Journal of Automation & Computing	1476-8186	Computer Science	/	/
Science China: Information Sciences	1674-733X	Computer Science	/	/
Tsinghua Science and Technology	1007-0214	Computer Science	/	/
Chinese Journal of Mechanical Engineering	1000-9345	Engineering	1988	2016
Journal of Zhejiang University Science A: Applied Physics & Engineering	1673-565X	Engineering	2000	2019
Journal of Bionic Engineering	1672-6529	Engineering	2004	2017
Building Simulation	1996-3599	Engineering	2008	2021
Friction	2223-7690	Engineering	2013	2013
Microsystems & Nanoengineering	2055-7434	Engineering	2015	2015
Green Energy & Environment	2096-2797	Engineering	2016	2016
Journal of Modern Power Systems and Clean Energy	2196-5625	Engineering	/	/
Chinese Journal of Aeronautics	1000-9361	Engineering	/	/
Defence Technology	2214-9147	Engineering	/	/
Earthquake Engineering and Engineering Vibration	1671-3664	Engineering	/	/

Journal name	ISSN	ESI	Time	
			Launch (year)	Dynamic cover renewal (year)
Frontiers of Structural and Civil Engineering	2095-2430	Engineering	/	/
Journal of Marine Science and Application	1671-9433	Engineering	/	/
Science China: Technological Sciences	1674-7321	Engineering	/	/
Theoretical & Applied Mechanics Letters*	2095-0349	Engineering	/	/
Transactions of Tianjin University*	1006-4982	Engineering	/	/
Frontiers of Environmental Science & Engineering	2095-2201	Environment/Ecology	/	/
International Journal of Sediment Research	1001-6279	Environment-Ecology	1986	2011
Journal of Environmental Sciences	1001-0742	Environment-Ecology	1989	2012
Journal of Mountain Science	1672-6316	Environment-Ecology	2004	2014
Journal of Arid Land	1674-6767	Environment-Ecology	2009	2018
Science China-Earth Sciences	1674-7313	Geosciences	1958	2009
Acta Geochimica	2096-0956	Geosciences	1982	2015
Advances in Atmospheric Sciences	0256-1530	Geosciences	1984	2016
Journal of Meteorological Research	2095-6037	Geosciences	1987	2017
Journal of Earth Science	1674-487X	Geosciences	1990	2016
Journal of Rock Mechanics and Geotechnical Engineering	1674-7755	Geosciences	2009	2014
Earth and Planetary Physics	2096-3955	Geosciences	2017	2017
Geoscience Frontiers	1674-9871	Geosciences	/	/
Chinese Geographical Science	1002-0063	Geosciences	/	/
Geo-spatial Information Science	1009-5020	Geosciences	/	/
International Journal of Disaster Risk Science	2095-0055	Geosciences	/	/
International Journal of Mining Science and Technology	2095-2686	Geosciences	/	/
Journal of Geographical Sciences	1009-637X	Geosciences	/	/
Petroleum Science	1672-5107	Geosciences	/	/
Cellular & Molecular Immunology	1672-7681	Immunology	2004	2004
Journal of Materials Science & Technology	1005-0302	Materials Science	1962	2020
Rare Metals	1001-0521	Materials Science	1982	2019
Acta Metallurgica Sinica	0412-1961	Materials Science	1988	2020
International Journal of Minerals, Metallurgy and Materials	1674-4799	Materials Science	1994	2021
Journal of Central South University	2095-2899	Materials Science	1994	2021
Nano-Micro Letters	2311-6706	Materials Science	2009	2015
Journal of Magnesium and Alloys	2213-9567	Materials Science	2013	2013
Science China-Materials	2095-8226	Materials Science	2014	2014
Journal of Advanced Ceramics	2226-4108	Materials Science	/	/
npj Computational Materials	2057-3960	Materials Science	/	/
Progress in Natural Science: Materials International	1002-0071	Materials Science	/	/
Transactions of Nonferrous Metals Society of China	1003-6326	Materials Science	/	/
Acta Mathematica Scientia	0252-9602	Mathematics	/	/
Applied Mathematics and Mechanics	0253-4827	Mathematics	/	/
Journal of Computational Mathematics	0254-9409	Mathematics	/	/
Journal of Systems Science and Complexity	1009-6124	Mathematics	/	/
Numerical Mathematics Theory Methods and Applications	1004-8979	Mathematics	/	/
Science China: Mathematics	1674-7283	Mathematics	/	/
Journal of Genetics and Genomics	1673-8527	Molecular Biology & Genetics	1974	2011

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			Launch (year)	Dynamic cover renewal (year)
Cell Research	1001-0602	Molecular Biology & Genetics	1990	2006
Genomics Proteomics & Bioinformatics	1672-0229	Molecular Biology & Genetics	2003	2003
Signal Transduction and Targeted Therapy	2095-9907	Molecular Biology & Genetics	2016	2016
Science Bulletin	2095-9273	Multidisciplinary	1956	2015
National Science Review	2095-5138	Multidisciplinary	2014	2014
Neuroscience Bulletin	1673-7067	Neuroscience & Behavior	1985	2011
Acta Pharmacologica Sinica	1671-4083	Pharmacology & Toxicology	1980	2017
Journal of Pharmaceutical Analysis	2095-1779	Pharmacology & Toxicology	1985	2011
Asian Journal of Pharmaceutical Sciences	1818-0876	Pharmacology & Toxicology	2006	2019
Chinese Journal of Natural Medicines	2095-6975	Pharmacology & Toxicology	/	/
Journal of Traditional Chinese Medicine	0255-2922	Pharmacology & Toxicology	/	/
Journal of Semiconductors	1674-4926	Physics	1980	2018
Chinese Physics B	1674-1056	Physics	1992	2016
Chinese Optics Letters	1671-7694	Physics	2003	2012
Nano Research	1998-0124	Physics	2008	2008
Light: Science & Applications	2047-7538	Physics	2012	2014
High Power Laser Science and Engineering	2095-4719	Physics	2013	2013
Photonics Research	2327-9125	Physics	2013	2013
Chinese Physics C	1674-1137	Physics	/	/
Chinese Physics Letters	0256-307X	Physics	/	/
Communications in Theoretical Physics	0253-6102	Physics	/	/
Frontiers of Physics	2095-0462	Physics	/	/
Current Zoology	1674-5507	Plant & Animal Science	1935	2009
Journal of Systematics and Evolution	1674-4918	Plant & Animal Science	1951	2005
Journal of Integrative Plant Biology	1672-9072	Plant & Animal Science	1959	2005
Zoological Research	2095-8137	Plant & Animal Science	1980	2012
Insect Science	1672-9609	Plant & Animal Science	1990	2010
Integrative Zoology	1749-4877	Plant & Animal Science	2006	2008
Journal of Plant Ecology	1752-9921	Plant & Animal Science	2008	2011
Molecular Plant	1674-2052	Plant & Animal Science	2008	2008
Animal Nutrition	2405-6383	Plant & Animal Science	/	/
Journal of forestry research	1007-662X	Plant & Animal Science	/	/

Note. *It is not indexed by SCIE and classified into ESI according to the scope of publication. If the journal implements dynamic cover renewal, the initiation timelines for launch and switch were checked further. EAPJ: Excellence Action Plan for Chinese STM Journals; ESI: Essential science indicators; PIIJ: Project for Enhancing International Impact of China STM Journals.