

Framework Analysis of Scientists and Technicians Reporting from China's Mainstream Media's WeChat Official Accounts based on Six Central News Agencies

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Abstract. Nowadays, the world is undergoing profound changes unseen in a century, and public communication of science & technology has been becoming more and more vital. It is one of China's media's responsibilities to create "Star Scientists" and to tell unique stories of scientists and technicians well with Chinese characteristics. The rapid development and deep integration of new media have put forward higher requirements on mainstream media for the typical reports and public opinion guidance of scientists and technicians. In this quantitative research, 272 reports on Chinese scientists and technicians from six central news agencies' WeChat official account within six months, including Xinhua News Agency and Guangming Daily, were taken as study objects by using content analysis. Based on Zang Guoren's Three Levels of Frame Theory, original texts were coded for statistical analysis of each report's theme, genre, schematic structure, characters, rhetorical context, form, page views, likes and wows. In the end, the study explored characteristics of different media, reflected on existing problems of science & technology communication, and made five suggestions for advancing integrated media reports on typical scientific figures in the new era, in order to accelerate to build China into an innovative country, as well as a science & technology giant.

Keywords: Scientists and Technicians; Typical Figures' Reports; Frame Theory; Central News Agencies.

1. Introduction

Currently, domestic and international environment has undergone profound and complex changes, and the development in the 14th Five-Year Plan (2021-2025) and even a longer period has put forward more urgent requirements for China to accelerate scientific and technological innovation. General Secretary Xi Jinping emphasized, "The spirit of scientists based on patriotism is a highlight to take forward in the new era."

However, the society's attention to scientific figures is still far from enough. According to a survey on idols adored by college students, 50% of students are starstruck, while merely 21.4% worship scientists [1]. Another survey results show that, compared with previous generations, the status of scientists in the minds of contemporary youth has declined a lot, and only 18.5% of secondary school students regard scientists as their idols [2].

In the journey of great rejuvenation of the Chinese nation, most of countless scientists and technicians have silently made significant contributions to scientific progress, lives improvement and nation development. In the age of star chasing, they are the worthiest "stars" whom the society and media should respect.

After previous literature review, there are few studies on the coverage of scientists and technicians in China, and even fewer related quantitative analysis applied *Three Levels of Frame Theory*, which is a widely used analytical method from macro to micro. It focuses not only on the overall framework construction, but also on the micro analysis of news text, which avoids the logical separation of the content. Therefore, based on *Three Levels of Frame Theory* proposed by Zang Guoren and other scholars, the study explored the rules and problems of frame construction for scientists and technicians reporting from China's mainstream media's WeChat official accounts. Furthermore, reasonable proposals, including how to enhance media's influence, quest new paths of integrated media and create "Star Scientists", will be suggested, which are expected to contribute to the public

opinion that respects scientists and innovation, and to promote the spirit of scientists and scientific culture to take deeper root in China.

2. Theoretical Framework and Study Design

According to the index system of *Report of the 4th National Survey on the Status of Scientists and Technicians* and the classifications provided by other scholars [3], the scientific fields mainly includes natural science research, engineering technology, science and technology industry, higher education, medicine, science and technology management, and science and technology communication, which effectively cover those who come from research institutes, colleges, enterprises, medical and health institutions, and county basic units.

Through content analysis in this paper, as Table 1 shows, 6 of the 18 central news agencies newly announced by Cyberspace Administration of China [4] were selected. 1 of the 3 major central media was randomly sampled as *Xinhua News Agency*; 5 of the 15 central news agencies in their respective specialized fields were selected in order at intervals of 3.

In the new era, WeChat official account is the main channel and ground for public communication of science & technology, the study retraced WeChat official accounts of six central news agencies sampled before and filtered all the coverage on China's scientists and technicians. The time range of sample selection was from August 13, 2021 to February 13, 2022. Finally, 272 effective samples were obtained.

Table 1. Sample size of six central news agencies' WeChat official accounts (unit: article)

WeChat official account	Hereinafter referred to as	Report size of scientists and technicians
Xinhua News Agency	Xinhua	34
Guangming Daily	Guangming	63
Science and Technology Daily	S&T	105
China News Service	CNS	17
China Youth Daily	CYD	42
Legal Daily	LD	11
Total		272

The study referred to Zang Guoren's *Three Levels of Frame Theory*, which divides news frames into high, middle and low levels. The High-level frame, mainly about topic setting, dominates reports' whole tendency and main idea; the middle-level focuses on text structure; and the Low-level specifically contributes to analyzing narrative style.

Table 2. Category of framework analysis

Multi-level Framework Analysis	Category	
High Level	Report theme	
	Report genre	
Medium Level	Report schematic structure	
	Report figure	Disciplinary field
		Qualities & characteristics
		Age distribution
Low Level	Rhetorical context	
	Report form	

Based on word frequency analysis and text mining used for the sample content, Table 2 was set up and manually coded by the author and a student majored in journalism and communication. First, we took 50 articles for trial coding. When encountering problems and disagreements, we discussed at any time and unified the criteria to improve the coding table. And then, we started the work of formal coding.

In addition, the study collected the volumes of Read (R), Like (L) and Wow (W) of 272 samples one by one, based on the formula (1) as follows referring to WCI (V14.2) of Gsdata, and calculated Power of Original Dissemination (P) for each article.

$$P=0.85\ln(R+1)+0.06\ln(L*10+1)+0.09\ln(W*10+1). \tag{1}$$

Considering the differences in fans volume, covered audience and the average P among the WeChat official accounts of six news agencies, it was inappropriate to compare absolute value of P directly. Therefore, the author standardized the data of P and calculated Mean (μ) and Standard Deviation (σ) based on all samples' P in the WeChat official accounts to which the article belongs, and then used the formula (2) as follows.

$$Z=(P-\mu)/\sigma. \tag{2}$$

The Standardized Value, presenting Power of Standard Dissemination (Z), could be calculated finally. If Z is positive, it means the article's dissemination power is higher than the average of the account to which it belongs, and vice versa.

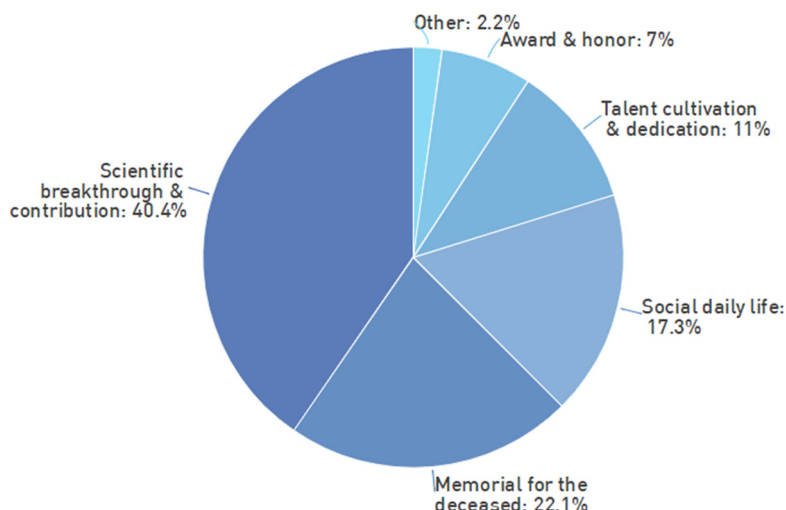
3. Multi-level Framework Analysis of Scientists and Technicians Reporting from China's Mainstream Media's WeChat Official Accounts

3.1 High-level Analysis

In Zang's theory, the High-level frame often refers to either a specific definition or the abstract meaning of a particular news event. The media not only use theme to give the text a certain meaning, but provide a framework for interpretation by emphasizing the meaning of a particular aspect of the event [5]. Therefore, the study analyzed the High-level frame in terms of Report theme and genre.

3.1.1 Report Theme Analysis

Table 3. Thematic frameworks of mainstream media's scientists and technicians reporting



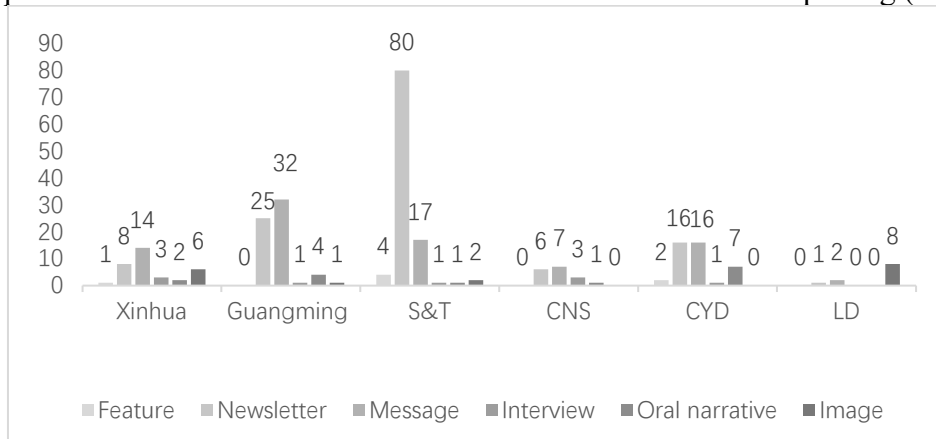
After organizing the 272 samples, the study categorized Report theme into six parts: Award & honor, Scientific breakthrough & contribution, Memorial for the deceased, Social daily life, Talent cultivation & dedication, and other frameworks.

The distribution of the thematic frameworks of scientists and technicians reporting in the six central news agencies' WeChat official accounts has a similar pattern. As Table 3 shows, reports on Scientific breakthrough & contribution accounts for the highest proportion of 40.4%, such as "Zhong Nanshan made the latest judgment on Omicron, the new coronavirus variant strain" on *Guangming*. This kind of coverage, which is strongly ideological, guiding and scientific, mainly aims to present the research achievements or breakthroughs for social development, so that it could be defined as "hard news". Reports on Memorial for the deceased takes up 22.1%, ranking the second. This kind of theme reviews the life experience and scientific achievements of deceased scientists through different perspectives, dividing into equal numbers of "soft news" and "hard news". The reports on Social daily life account for 17.3%, mostly showing the daily life, social activities and growth experience. Expressions of this theme is more daily and story-based. For example, the stories, including "divine friendship" of elder academicians eating ice creams and discussing about scientific research, and "cowherd boy" getting his doctor's degree at Peking University, have been reported and screened on the Internet, which allowed scientists and technicians to walk down the "altar" to show their unique personality charm and enter "ordinary people's homes".

In conclusion, the theme-selecting of the central news agencies not only maintains their mainstream and professionalism, but also increases the personalized content, which highlights the value of scientific figures as real "human beings" with both sense and sensibility. Moreover, avoiding the "higher grade" propaganda of typical characters, equal stress on "soft news" and "hard news" also expresses the balance of "career" and "humanity", which not only enriches the science-related thematic frameworks, but also achieves a three-dimensional construction of the full image of this group.

3.1.2 Report Genre Analysis

Table 4. Report Genre of mainstream media's scientists and technicians reporting (unit: article)



As for report genre distribution, Table 4 indicates that newsletter, the major genre taking up 50%, is suitable for comprehensive and in-depth coverage of scientific figures' experiences, which builds the typical image with vivid and specific details. The second most popular genre is message, accounting for 32.4%. Other genres, such as feature, interview, oral narrative, image, need higher cost of writing and editing, so that they are used less, 17.6% totally.

3.2 Medium-level Analysis

On the basis of van Dijk's study of news schematic structures [6], Taiwanese scholars such as Zhong Weiwen and Zang Guoren proposed the Medium-level frame which consists of seven schema:

main event, previous event, history, result, impact, attribution, and evaluation [7]. Combined with previous studies on typical figure reporting by applying this framework theory [8], the study was conducted in terms of both Report schematic structure and Report figure during the Medium-level analysis.

3.2.1 Report Schematic Structure Analysis

The study constructed the schematic structure of central news agencies' scientists and technicians reporting in the range of main event, previous event, history, result and impact, attribution, and evaluation.

Table 5. Cross distribution between Report schematic structure & Report theme (unit: article)

Report schematic structure/ Thematic frameworks	Main event	Previous event	History	Result and impact	Attribution	Evaluation	Total
Award & honor	16	3	0	0	0	0	19
Scientific breakthrough& contribution	49	3	5	35	6	12	110
Memorial for the deceased	48	3	4	1	0	4	60
Social daily life	40	3	0	0	1	3	47
Talent cultivation & dedication	26	0	0	0	4	0	30
Other frameworks	6	0	0	0	0	0	6
Total	185	12	9	36	11	19	272

The result of the cross-distribution analysis presents that main event is most frequently used in each thematic framework, with the remaining ones being result and impact, evaluation, previous event, attribution, and history in that order. It indicates that the central news agencies' WeChat official accounts focus more on reporting figure events, results and impacts, with less exploration of backgrounds and antecedents.

Secondly, report schematic structure differs among thematic frameworks. Most importantly, in the coverage of Award & honor, Memorial for the deceased, Social daily life, and Talent cultivation & dedication frameworks, main event accounts for over 80% and mainly narrates the moving stories with extensive factual details.

In contrast, reports in Scientific breakthrough & contribution framework make use of a complete schematic structure. Moreover, the usage of each structure is equally frequent. On the one hand, these reports emphasize both scientific breakthroughs and attributions & evaluations of the events; on the other hand, they also stress on scientific figures' contributions to the national and even the worldwide research fields.

3.2.2 Report Figure Analysis

There are three sub-categories: Disciplinary fields, Qualities & characteristics and Age Distribution.

Table 6. Disciplinary fields' distribution of scientific figures

Disciplinary fields	Philosophy	Economics	Legal Studies	Pedagogy (including Sports)	Literature (including Journalism and Communication)	History	Science
Percentage	2.00%	1.70%	3.30%	0.60%	1.20%	2.90%	19.20%
Disciplinary fields	Engineering	Agronomy	Medicine	Military Science	Management	Artistic Studies	Comprehensive category
Percentage	45.60%	8.40%	12.50%	0%	0.30%	0.60%	1.70%

Table 6 shows that the distribution of scientific figures' disciplinary fields is unbalanced. The largest group is in Engineering discipline, accounting for 45.6%; Science, 19.2%; Medicine, 12.5%. However, reports on humanities & social sciences appear to be very few, which is possibly related to objective facts that their value is difficult to be quantified and assessed visually. Therefore, it is particularly significant to strengthen echelon's construction of discipline and to avoid stressing science over the humanities [9].

Table 7. Frequency distribution of scientific figures' Qualities & characteristics

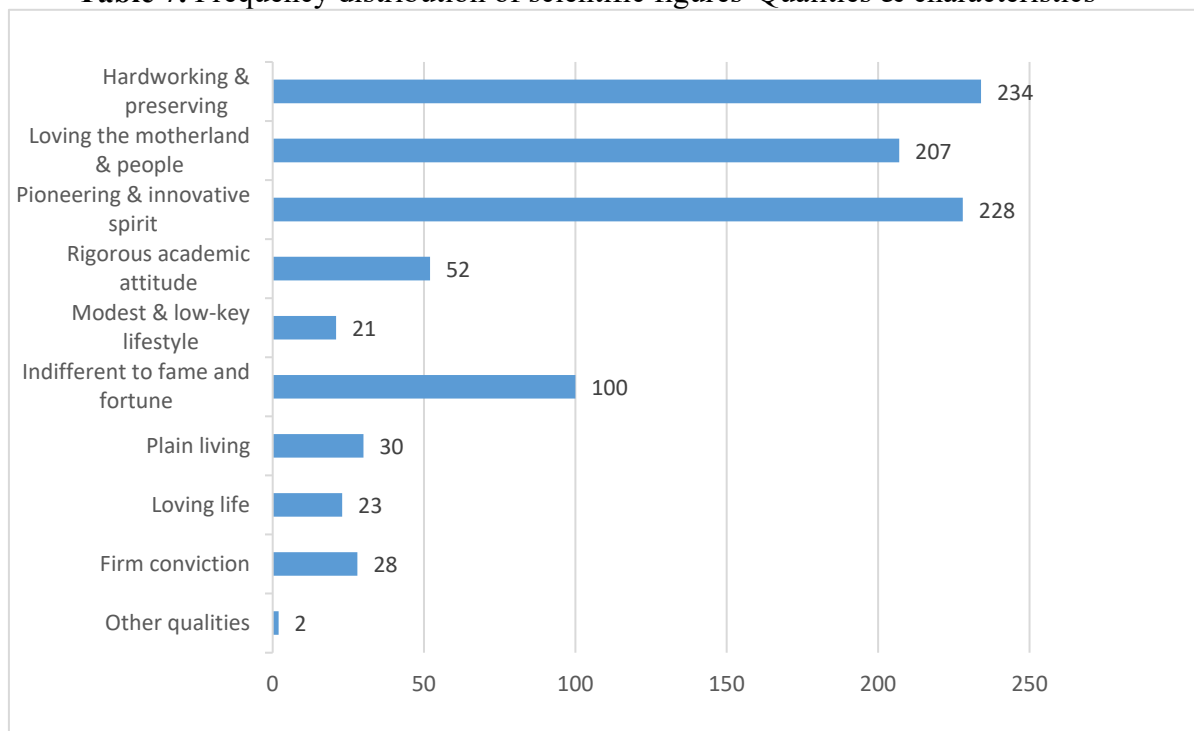
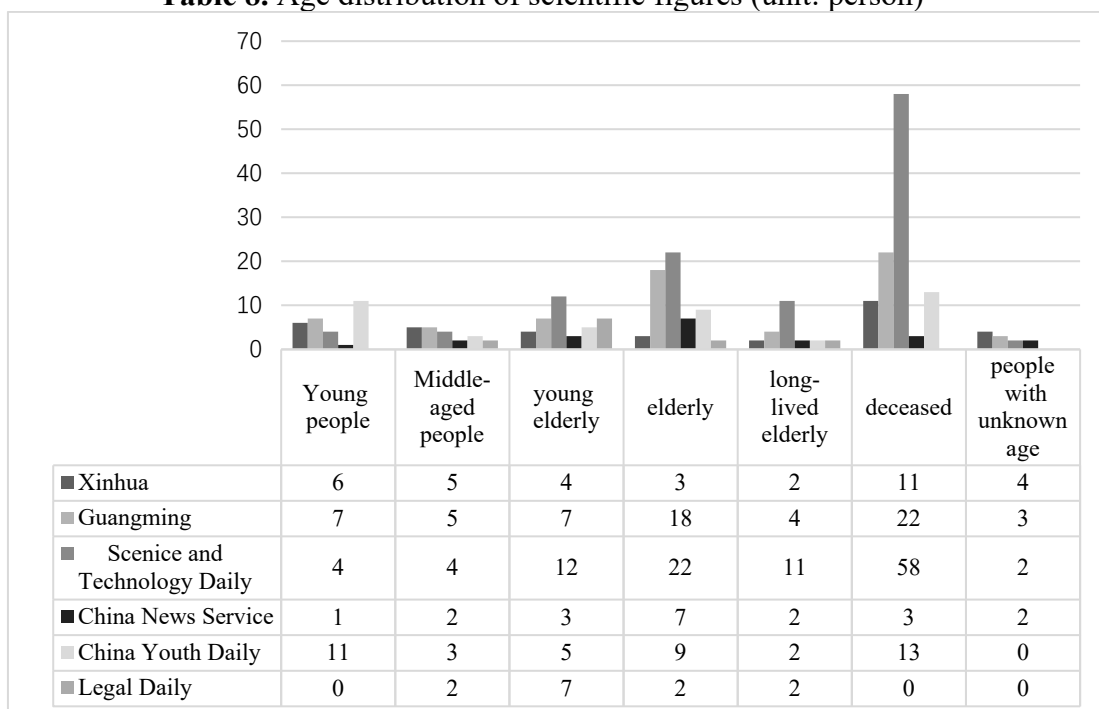


Table 8. Age distribution of scientific figures (unit: person)



In terms of Qualities & characteristics, most of the coverage displays the character images who love the motherland, work, life and innovation. There are 93 reports, 34.2% of total, referring to those with more than 3 characteristics, which shows the richness and diversity of figures.

Furthermore, the top three qualities - hard working and persevering, loving the motherland & people, pioneering & innovative spirit - are far exceeding other ones. The number of reports including these three characteristics is 138, accounting for 50.7%.

However, we still need promote public communication of science & technology to rise from trends of conceptual and modeling, and to extract individuality from commonality of the whole group. Only in this way can image mode of figures towards the direction of true and diverse scientific figures.

Referring to WHO' s newest criteria, scientific figures' age can be divided into young people, middle-aged people, young elderly, elderly, long-lived elderly, deceased, and people with unknown age. As Table 8 indicates, there emerges more coverage of young, elderly and deceased scientists than middle-aged ones on the current mainstream media.

Moreover, the contrast between youthful age and outstanding achievements is particularly attractive to media and the audience. For example, *Xinhua*, *Guangming* and *CYD* focused on a young female Hu Yue, a doctoral supervisor who was born in 1991. The data Z of all three reports are above 0.6 and higher than the average level of respective WeChat official accounts.

In addition, six news agencies also present diverse age distribution. *CYD*' s coverage of young scientists far exceeds that of other agencies, which is exactly in line with its own positioning. In contrast, *S&T* seldom reports on young and middle-aged people, while its memorial reports on deceased scientists are far beyond those of other agencies, which tends to demonstrate vital contributions of scientific figures in their lifetime. Meanwhile, the age distribution of *Xinhua*, the top one national news agency, is most balanced.

3.3 Low-level Analysis

The Low-level frame refers to framework expression. Composed of language or symbols, it includes word utterances and rhetoric & metaphors [10]. Combining the existing theoretical results of frame analysis with practical needs of the study, the author briefly analyses the Low-level frame in terms of Rhetorical context and Report form.

3.3.1 Rhetorical Context Analysis

The internal context of news rhetoric is generally composed of words, phrases, sentences, paragraphs, and discourses. Due to the fragmented and fast-food reading tendency on WeChat, attracting headlines play a significant role in enhancing power of dissemination. Therefore, at first, the author studied the headlines and counted the words contained in the samples' headlines, which is shown in Table 9.

Statistics shows that the headline design, especially word usage among the six news agencies, is in common. Three types of characteristic words are used frequently: "suspenseful indicative pronoun" is most frequent, which means the title is hiding real information, but sets "this professor", "a special person", "he was absent" or other suspense to attract attention. The second one has "prominent person's name", which takes well-known scientists like Yuan Longping and Zhong Nanshan as the main subject of direct report, or other related figures like national leaders as a side object, such as "Premier Zhou Enlai personally relieved him whose proposal was not passed" and so on. The third one is "High-level modifier", containing ordinal words like "first", top-level adjectives like "newest", or other words like "unique" to highlight uniqueness.

Statistically, the headlines of *Xinhua*, *S&T*, and *CYD* often contain "suspenseful indicative pronoun" to attract audiences, while *Guangming* and *CNS* prefer to add prominent person's name to enhance the power of dissemination.

Table 9. Statistics of headline words and data Z (unit: article) (a)

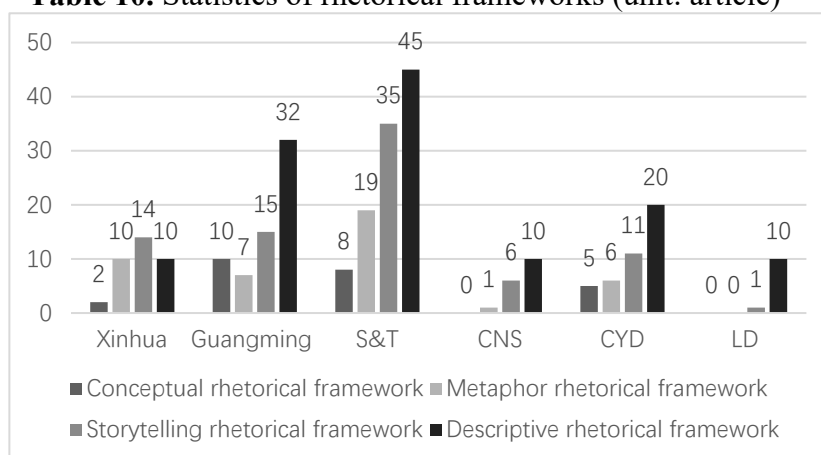
Number of articles / WeChat official accounts	Title with "suspenseful indicative pronoun"	Title with "prominent person's name"	Title with "High-level modifier"
Xinhua	2	19	9
Guangming	2	9	17
S&T	8	62	26
CNS	5	4	9
CYD	4	16	9
LD	2	0	1

(b)

Number of articles / WeChat official accounts	Title with at least one type of word	Title with at least one type of word and Z > 0
Xinhua	23	20
Guangming	27	23
S&T	42	38
CNS	6	5
CYD	24	20
LD	2	2

In addition, the number of reports' headlines using at least 1 type of the above-mentioned words is 124. Among them, data Z are positive, which implies the reports' power of dissemination is higher than the average level of the sample articles, accounting for 87.1% with a total of 108 articles. It is sufficient to argue that the application of 3 types of words mentioned above in headlines shows a high positive correlation with the reports' power of dissemination.

Table 10. Statistics of rhetorical frameworks (unit: article)



In the basis of previous studies on the construction of typical characters [11], the author codes textual parts of all samples from the rhetorical frameworks including concept, metaphor, story and description.

Conceptual rhetorical framework refers to using figurative conceptual terms to promote the audience's objective and accurate understanding of professional terms, such as the coverage of *Guangming* and *CYD* on Huang Chao, a post-90s doctor, who named a new species of crab as *Megapleonium shenzhen*.

Metaphor rhetorical framework, taking up 15.2%, tends to put two seemingly unrelated things together to make further associations. For instance, Academician Chen Jingxiong installed "eyes" on missiles, Academician Ge Xiurun "writing thesis on rocks", and a "wizard" who made holes in nanomaterials. These metaphors make public communication of science and technology more readable and interesting.

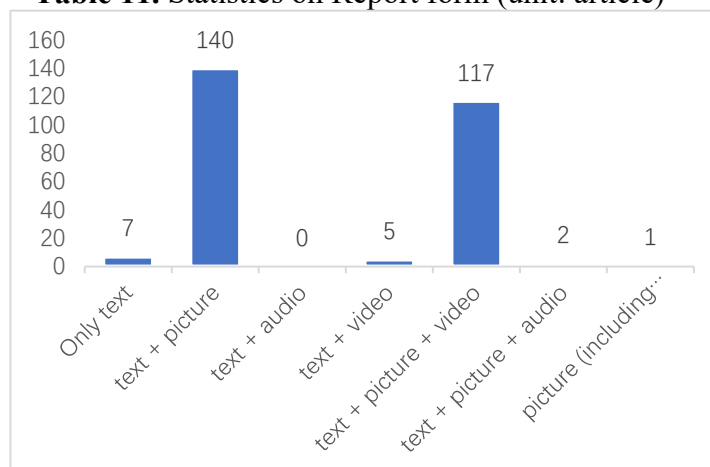
Storytelling rhetorical framework mainly presents the personal experiences and details of scientists and technicians to the audience to balance the unreadability of scientific discourses, accounting for 29.7%. For example, *CNS* once reported Cheng Xiangwen, a representative of "the Most Excellent Scientists and Technicians", treated corns as his friends and often chatted with them. Through vivid and detailed descriptions, the report made the audience empathize with the scientists, and even truly feel the passion and dedication of the scientific community.

Descriptive rhetorical framework has the most dominant feature - to seek rationality, including objective rhetoric, data rhetoric, and de-rhetoric, accounting for the largest proportion of 46.0%. For example, the report of a 33-year-old female top student who has become a long-appointed professor at Zhejiang University on *CYD* objectively shows the young but promising nature through specific data like the number of SCI papers and citations, the amount of scientific research projects, and the honors she received.

Thus, in terms of rhetorical framework, on the basis of striving for objective and accurate representation, the coverage of scientific figures on central news agencies' WeChat official accounts pursues storytelling, visualization and concretization with a view to enhancing the public communication effect.

3.3.2 Report Form Analysis

Table 11. Statistics on Report form (unit: article)



Six central news media adopts "text + picture" as the most desirable form at 51.5%, which is followed by "text + picture + video" at 43.0%. In contrast, the proportion of cartoons and audio forms appear to be few. It's sure that WeChat official accounts of mainstream media play the advantage of integrating text, picture and video, but the forms are still less vivid and lively. Exactly, there exists a lack of visual works like H5 and cartoon, as well as audio news form.

4. Implications and Suggestions

4.1 Raise the Political Stance and Promote the Scientific Spirit

The complex changes at home and abroad have put forward urgent requirements for accelerating scientific and technological innovation. The rapid iteration of all-media has also been leading to profound changes in the public opinion, media landscape and communication means. The work of journalism and public opinion is facing various challenges. In June 2019, the Communist Party of China Central Committee and the General Office of the State Council issued the Opinions on Further Promoting the Spirit of Scientists and Strengthening the Construction of Work and Learning Style, which pointed out that the spirit of scientists in the new era should be vigorously promoted [12]. It is thus clear that increasing the coverage of Chinese scientists and technicians is in line with the needs of the times.

Tapping into the distinctive spirit of the age is one of the most important prerequisites for developing coverage of scientific figures in special fields. Mainstream media are compulsory to stand at the height of the Communist Party of China (CPC) and the country, to raise the political stance, and to combine public communication of science and technology with major timing nodes and important era themes. It's necessary to adhere to the Marxist Views of Journalism and to strive for reflecting the "big theme" of the times by the "little story" of figures, so that the spirit of scientists could become alive and real. For example, on the occasion of the 100th anniversary of the founding of CPC in 2021, S&T launched a news planning named "Aspirations of 100 academicians who joined CPC" in convergence media, which revisited the initial beliefs and ideal practices of 100 academicians when they joined the Party. Through various forms of videos, pictures and text, this special topic promoted innovative spirit with Chinese characteristics. The audience is imperceptibly enjoying immersive reading, commenting and forwarding, so as to realize the inheritance of the mission.

4.2 Keep Alert to "Matthew Effect" and Broaden Reporting Sources

In the study of "Scientific Community", R. K. Merton discovered a relationship between scientific honors and resources. His discovery, regarded as "Matthew Effect" [13], proves that the society is prone to grant more honors to famous scientists who have made great contributions, and to refuse to recognize the achievements of those who are not well-known.

Likewise, "Matthew Effect" in the coverage of scientists and technicians mainly refers to that the more famous scientific figures become, the more attention they will receive from the media, which leads to more resources and greater chances for future achievements; those who are still unknown for the time conversely have fewer resources available and are difficult to realize achievements, so that eventually the media pay less attention to them. Therefore, there is a vicious circle in the media exposure of scientific and technological workers.

In the Medium-level analysis of the samples, disciplinary and age distributions of scientific figures are extremely uneven. Young, old and deceased ones with honors are more "eye-catching", while as the backbone of scientific research, the middle-aged group receive less attention and reports. In addition, there are more coverage on scientists majoring in science, engineering and medicine, but fewer reports on those in humanities & social sciences, whose value cannot be easily quantified.

Therefore, the mainstream media should be vigilant against the reporting tendency of achievement-, award- and age-oriented, broaden the sources of reporting objects, and give more attention and encouragement to the vulnerable groups in the scientific community. A reporting matrix, from multi-field and disciplinary, with equal-age and gender, is a must, so as to contribute to the rational allocation of scientific and media resources, to promote the balanced growth of public communication of science and technology in China, to feed back the healthy development of talent echelon, and to help the research of different disciplines "blossom".

4.3 Tell Scientific Story Well with Chinese Characteristics and Focus on Individualization of Figures & Diversification of Perspectives

Excavating "individuality" of each reported character from the "commonness" of the group and highlighting personality charms of typical characters will help the audience form long-term memory and improve the communication-effect in science and technology fields.

The Medium-level analysis shows that three types of qualities & characteristics, such as Hardworking & preserving, Loving the motherland & people, and pioneering & innovative spirit, are the common characteristics in central news agencies' reporting. Although it is crucial to run through the core socialist values in the reports, we also need to prevent falling into the trap of fixed routines and formulaic propaganda.

In fact, the individuality lies in differentiated performance in the process of scientific research. The media should be good at finding the most valuable "flash points" through new perspectives, which can be called as "refracting the light of the sun by a water-drop". After the death of academician Yuan Longping, the father of hybrid rice, the WeChat official accounts of six central news agencies launched a large number of reports featuring new characteristics and perspectives and data Z of those reports are all high on average. For example, from the perspectives of family members, pets, scientific research teams, passers-by offering flowers and netizens cherishing online, Yuan Longping's multiple roles and even contradictions in his life and work were presented in personalized ways. The sense of conflict presented by such little stories can show his personal charm more vividly, enhance the group's appeal among ordinary people, and tell the story of scientists and technicians well with Chinese characteristics.

4.4 Consider the Needs of the Audience and Add Popular Science for Positive Interaction

Mainstream media are supposed to have a strong sense of audience, to empathize with their needs and to respond to public concerns, so as to avoid self-talking, to enhance the communication power and effect.

First, the organic combination of interesting character reports and popularization of science to provide knowledge and lessons will enhance the audience's enthusiasm for active reading and deepen their understanding and recognition of scientific group. For example, among the six WeChat official accounts, reports on "Medical experts announce research findings and latest judgment on COVID-19" have significantly higher Power of Original Dissemination than those on "Medical experts' life experience and achievements". In addition, with the continuous subdivision of professional opinion leaders, "science-popularizing stars" are gaining more attention from the society, especially the post-90s female doctor Zhou Siyi, who popularizes the String Theory in physics for young people, and Grandma Wu Yuren, who stimulates the public's desire for science knowledge in a light-hearted way. Therefore, the central news agencies should also raise awareness to "educational function" and strengthen the knowledge content, cultural connotation and detail reproduction in reports, so as to explore a new path of scientists and technicians reporting.

Second, public communication of science and technology inevitably contain obscure academic terms, which also requires the media to make great efforts to enhance articles' readability with vivid, concise and civilian languages, so as to reduce comprehension difficulty and to enhance communication effect. For example, *Guangming's* " 'Gene Editor' cultivates new breeds of genes" is a multi-media report that clearly explains "gene editing technology" by "addition and subtraction". It is also based on direct quotations throughout for smooth understanding.

Last but not least, the mainstream media should actively create a platform for direct dialogue and interaction between the public and scientific figures. Among 34 samples from *Xinhua*, the one with the highest Power of Original Dissemination is an article which contained the reply to netizens from doctor Zhang Wenhong, director of the National Medical Center for Infectious Diseases. The kind of heart-to-heart dialogue has brought the doctor and the audience closer and raised the learnability of the "model scientists".

4.5 Build Multi-form & Full-matrix Dissemination and Promote Longitudinal Deepening & Normalization of Typical Reports

The study demonstrates during specific periods there emerges higher-than-usual coverage of scientists and technicians. For example, after the selection and awarding of major scientific awards, especially State Science and Technology Awards, the media would then provide targeted reports of the award-winning scientists. However, the report frequency would decrease significantly after these periods.

From the vertical dimension, in order to let role models deeply rooted in hearts of people, "flash in the pan" reports are not to be desired. To this end, the media are supposed to shoulder social responsibilities by tracking and reporting on the typical scientists and technicians continuously and by expanding the depth and breadth of reporting, so that the typical coverage could strive for being deepened longitudinally and normalized.

From the horizontal dimension, in the era of integrated media, the combination of multiple audiovisual symbols has gradually adopted in the innovative public communication of science and technology. However, what the study concluded from the samples of six central news agencies, the current forms of scientists and technicians reporting are relatively single. The degree of innovation is expected to be improved since almost no new forms of visualization and audibility, such as comics and audios, are involved.

In the new media era, with the recovery of cochlear economy and auditory culture, it is an important innovation path for reporting forms to absorb the advantages of "podcast", like the detailed description of character images in radio dramas, and even to create "audible scientific figures' stories".

The spring comes when hundreds of flowers bloom. A single report has limited effect, but public communication of science and technology are expected to break media barriers, to achieve full cooperation, and to increase the long-tail effect. Consequently, the news media could use short videos, micro films and other forms of mini-but-fast means to "detonate" the attention of the whole society on scientists. The media are supposed to attract more media peers to continue to launch a large amount of coverage representing their attitudes with high quality, new perspectives, adequate depth and warm temperature according to their own positioning. It is also necessary for media to build Full-matrix dissemination, multi-channel release, and full-platform sharing, so that the timeliness and interactivity of the reports could complement each other, and the popularity and influence coexist. Only in this way will the power of model scientists definitely inspire the public.

5. Conclusion

It is the times need and media responsibility to vigorously promote the spirit of scientists and to create "Star Scientists". According to scientists and technicians reporting from central news agencies' WeChat official accounts, China's mainstream media are required to be of more advanced stance, more open vision, more diversified perspective, more abundant means to strengthen the penetration, guidance, influence, and credibility of the media. They have the obligation not only to create public opinion environment of caring for, learning from, paying a tribute to scientists in the whole society, but also to guide the public to further respect knowledge, science and scientists. The unique capability of the news media will contribute to building a world powerhouse in science and technology.

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