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Comparative Models and the Chinese Approach: Building a Framework for Emergency Language Services from Global Experience

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ABSTRACT: In the context of increasingly frequent public emergencies worldwide, emergency language services (ELS) have emerged as a critical component of national risk governance systems. By ensuring the accurate and timely transmission of critical information, ELS directly influence rescue efficiency, information equity, and social stability. This paper systematically reviews the practices of countries such as the United States, Japan, and the United Kingdom in constructing ELS mechanisms. It further synthesizes international research across multiple dimensions, including demand analysis, translation technology, and service modalities. Building on this foundation, the study examines the development trajectory of ELS in China, tracing its evolution from pre-pandemic theoretical groundwork to the practical innovations undertaken by the "Anti-Epidemic Language Service Team," highlighting advancements in product development, technology application, and talent cultivation. The study underscores that although China's engagement with ELS began relatively late, a distinctive model with Chinese characteristics has evolved through crisis-driven practical exploration and theoretical innovation. Finally, the paper proposes future directions for development in areas of national governance, demand identification, and talent cultivation.

KEYWORDS: emergency language services; national emergency language capability; linguistically disadvantaged groups; language technology

I. Introduction

Today's world is widely characterized as a risk society, where frequent public emergencies pose significant and multifaceted challenges on a global scale. Effective emergency management has become crucial to mitigating the impacts of disasters and ensuring public safety, particularly in increasingly interconnected and linguistically diverse environments. Rapid and efficient emergency response relies heavily on robust emergency language services, whose core value lies in accurately and swiftly delivering critical information to every individual. This

function not only directly influences operational rescue efficiency—saving lives and reducing casualties—but also serves as a cornerstone for maintaining information equity and social justice. It ensures that no group is marginalized or becomes a forgotten "island" due to language barriers, thereby upholding the fundamental right to access vital public information.

Furthermore, clear and authoritative multilingual communication helps curb the spread of rumors, alleviates public panic, and plays a crucial role in maintaining social stability and cohesion. It also reflects a nation's refined governance capabilities and enhances its responsible international image. Therefore, systematically examining and learning from globally diverse models—such as the policy-driven approach of the United States, the society-collaborative system in Japan, and the daily-embedded mechanism of the United Kingdom—provides valuable insights for the advancement of such services. Such comparative analysis is essential for constructing a comprehensive, adaptive, and proactive emergency language service framework that integrates broader international perspectives with distinctive Chinese characteristics.

II. Comparative Models of Global Emergency Language Services

2.1 National-Level Practices and Mechanism Building in Multiple Countries

Many countries have established corresponding emergency management mechanisms or introduced relevant policies. Li Meiling and Zhao Ronghui (2021) note that the U.S. comprehensive emergency management model divides emergency management into four stages: mitigation, preparedness, response, and recovery. Its emergency language services primarily focus on assisting limited-English-proficiency populations. Documents such as Improving Services for Individuals with Limited English Proficiency, Language Services Guide, and Language Services Plan are rare examples of nationally issued guidelines on language services during emergency responses. Japan, as a disaster-prone country, has continuously refined its emergency language service system through practice. The Disaster Relief Act shows that Japan's emergency language services span pre-event, during-event, and post-event phases. Its emergency management mechanism, led by the cabinet with supplementary support from social welfare organizations and volunteer groups, is characterized by "high flexibility and strong adaptability." The promoted "Plain Japanese" meets the communication needs of special populations during disasters (Gu Jingshu, 2021). The U.K. emphasizes a daily information mechanism building, with local emergency agencies providing routine multilingual translation and sign language interpretation services. Additionally, the U.K. has strict regulations on information sharing among emergency agencies, requiring compliance with relevant laws and clear terminology to avoid exaggeration and emotional language. The British government also highly values its relationship with the media, with the BBC maintaining a long-term cooperative partnership with the government (Ma Yan, 2021). Thus, the U.S. focuses on top-level policy design, Japan has formed a flexible society-wide collaborative system, and the U.K. emphasizes stability in daily mechanisms and media cooperation.

Furthermore, countries such as South Korea and Ireland have developed targeted service models based on their specific demographic structures and historical experiences. After experiencing the MERS outbreak, South Korea accumulated rich emergency management experience. Its emergency language services primarily target

foreign workers and marriage immigrants, who constitute the main foreign population in the country. During the COVID-19 pandemic, South Korea developed a dedicated sign language interpretation app for the hearing impaired, providing 24/7 consultation services (Lu Jiakuan, 2021). Ireland's Major Emergency Preparedness Guidelines also stipulate that disaster information must be published in Braille and large-print formats. New Zealand's National Civil Defence Emergency Management Plan mentions using multiple languages for disaster information to adapt to diverse populations and providing translation services for linguistically disadvantaged groups. The World Federation of the Deaf and the International Association of Sign Language Interpreters jointly published a manual addressing how the hearing impaired can access information and communicate during emergencies (Zhang Tianwei, 2020).

2.2 Multidimensional Theoretical and Practical Research by International Scholars

International scholars have researched emergency language services from various angles. Some studies focus on demand, exploring how to meet the language service needs of linguistically disadvantaged groups during emergencies. Field (2017) studied post-disaster relief after Typhoon Haiyan and found that the lack of qualified translations aligned with local culture led to failures in pre-disaster evacuations. Park & Lee (2016) surveyed 22 foreign nationals in South Korea during the 2015 MERS outbreak, examining their access to language services and discussing how their personal needs could inform improvements. Other studies address translation capabilities and technologies in emergency contexts. Ramirez, Engel, & Tang (2008) compared English-speaking patients and limited-English-proficiency patients in healthcare settings, finding lower satisfaction among the latter. However, satisfaction improved with translation services, though cost was a significant barrier. The authors offered recommendations accordingly. Research on emergency language service technology is also a key focus. Cadwell & O'Brien (2016) explored the role of language, culture, and translation in information and communication technology (ICT) based on case studies of foreigners in Japan during the 2011 Great East Japan Earthquake. Lewis, Munro, & Vogel (2011) proposed that machine translation technology is crucial in emergencies, significantly improving relief efficiency. Scholars have also studied forms of emergency language services, with Japan being a typical example due to its frequent disasters. Japan developed "disaster reduction Japanese," notably represented by the work of Sato Kazuyuki. Beyond this, the team led by Ikuo Iori developed "plain Japanese" to ensure foreigners in Japan have the minimal Japanese necessary for daily life in public contexts (Yao Yanling, 2021). Other scholars have researched media discourse during emergencies. Beigi et al. (2016) conducted sentiment analysis on social media information to determine affected populations' reactions during disasters and discussed how this information could aid disaster management. Lansdall-Welfare et al. (2014) used big data to explore the impact of the Fukushima nuclear accident on media coverage of nuclear power.

III. The Formation and Testing of the Chinese Model: Latecomer Catch-Up and Innovation

3.1 Theoretical Precursors and Practical Gaps

Before the COVID-19 outbreak, research on emergency language services developed gradually, primarily focused on theoretical exploration. Practical application studies lagged, with emergency language services treated as a sub-concept of national language capability rather than an independent research field.

In theoretical exploration, Li Yuming (2011) introduced the concept of "emergency languages" from the perspective of enhancing national language capability, noting that talent in these languages is reserve-oriented. Zhao Shiju (2015) argued that "emergency language services for sudden events are a crucial aspect of government emergency capability and an indispensable part of national emergency management." Wei Hui (2015) proposed four first-level indicators for evaluating national language capability: "popularization capability," "vitality," "development capability," and "management capability," with the ability to provide language support and services during emergencies being part of "management capability." Wen Qiufang (2016) considered "emergency capability" a key metric in national language management capability, involving two types of emergencies: those inherently involving language and those requiring language talent for resolution. Fang Yin (2018) pointed out that building language emergency capability for sudden events remained a significant weak point in China's language affairs, affecting emergency response. Beyond national-level discussions, Chu Meng (2015) focused on daily news publicity, proposing the construction of a practical daily emergency rescue news discourse system. Guo Jie (2019), based in the Guangdong-Hong Kong-Macao Greater Bay Area, suggested building a multilingual emergency service platform to align with the region's characteristics.

In practical application research, studies mainly covered accumulated experience and applied research. Before COVID-19, China experienced major emergencies like the SARS outbreak, southern freezing rain and snow disasters, the Wenchuan earthquake, and the Yushu earthquake, and hosted major international events such as the Beijing Olympics, Shanghai World Expo, APEC meetings, and China-EU summits, accumulating valuable emergency language service experience. He Rui (2009) studied multilingual usage during the Beijing Olympics. Despite this experience, domestic applied research was scarce during this period, primarily focusing on international emergency projects and their implications for China. For example, Zhang Tianwei (2016) introduced the development and effectiveness of the U.S. National Language Service Corps, offering suggestions for building China's language volunteer talent pool. Teng Yanjiang (2018) explored the operational mechanisms of U.S. emergency language service programs, summarizing their experience in integrating emergency language services into the national strategic system and coordinating social resources. Han Tao (2019) summarized Japan's "plain Japanese," "disaster reduction Japanese," and "easy Japanese," introducing Japan's "plain language" policy.

3.2 Crisis-Driven Practical Outbreak and Product Innovation

3.2.1 Language Service Teams and Their Products

In response to the escalating pandemic, Chinese language scholars spontaneously formed the "Anti-Epidemic Language Service Team," providing timely and practical emergency language services. Scholars subsequently

analyzed the team's construction: Wang Chunhui (2020) reviewed its formation, introduced team division of work and products, and summarized its work experience and implications. Li Yuming, Zhao Shiju, and He Lin (2020) reflected on the team's practices, proposing the establishment of a "China Emergency Language Service Team" for long-term stability, with volunteers comprising experts in linguistics and related fields, language workers, and emergency management personnel. Wang Lifei and Li Zhao (2021) compared language service teams in China, the U.S., and Japan, suggesting enhanced talent reserves, industry-academia-research collaboration, and a unified coordination platform for China. Key products during the pandemic included the Hubei Dialect Guide for Epidemic Resistance, Multilingual Guide for Epidemic Prevention and Control, and Plain Chinese for Epidemic Prevention and Control. Related research included Wang Lining (2020) on the compilation and application types of the dialect guide, and Ji Chuanbo and Li Yuming (2020) on the development process of "Plain Chinese," proposing four improvements and suggesting the government integrate its research and use into national language service planning.

3.2.2 Emergency Language Technology Research

Emergency language technology effectively supported service delivery during COVID-19, enhancing efficiency. Rao Gaoqi (2020)cataloged the technologies used by the team, including corpus technology, language recording technology, audio/text retrieval technology, machine translation, and computer-assisted translation. Wang Gaowu, Pang Bo, Li Chenguang, and Yang Doudou (2020) used iFlytek's intelligent voice input method to recognize and convert various dialects nationwide, evaluating effectiveness. Results indicated high error rates in recognizing some dialects, indicating room for improvement in language AI technology. Yang Aimin (2020) noted that new technologies empower emergency language services, providing new methods, approaches, and ideas. Multimodal media and diverse display methods free services from time and space constraints, endowing them with greater capacity.

3.3 Positioning China's Model and Unique Challenges in Comparative Perspective

3.3.1 National Emergency Language Capability from a Governance Theory Perspective

Li Yuming and Rao Gaoqi (2020) proposed a four-dimensional, 17-subgoal system and capability analysis model for building China's emergency language capability. Wang Hui (2020) discussed related concepts from a national governance perspective, proposing strategies for enhancement. Wang Lifei, Ren Jie, Sun Jiangwei, and Meng Yongye (2020) defined emergency language services, reviewed domestic and international research, and suggested building China's mechanism through infrastructure, policy planning, capability, standards, and talent cultivation. Teng Yanjiang (2020) discussed emergency language service capability and its construction from a language planning perspective.

3.3.2 Emergency Language Service Research from a Demand Theory Perspective

Yin Zhiping (2020) adapted a management customer identification model to create an emergency language service demand identification model, providing an effective approach for demand identification in public

emergencies. Chen Lianwen (2021) argued that the targets of emergency language services are linguistically disadvantaged groups, and services should address their needs based on urgency, resource efficiency, and public service substitutability. Zheng Xuan (2020) highlighted the lack of services for the hearing impaired during COVID-19, advocating for protecting their communication rights, promoting national universal sign language, and professionalizing services for special groups. Shi Lin (2021) and Dawazhuoma (2020) addressed emergency language services in ethnic minority areas, suggesting improvements. Chen Lianwen and Wu Xiaofen (2022) focused on rural elderly populations, recommending integrating emergency language service awareness into rural grassroots governance.

3.3.3 Emergency Language Talent Cultivation Research

Building emergency language service teams and normalizing services talent cultivation. Mu Lei and Liu Xinyuan (2020) and Li Yingying and Pan Xiaotong (2021) emphasized the importance of talent cultivation systems and explored training models. Cai Jigang (2020) proposed establishing "emergency language service" majors in universities, with specialized institutions widely offering such programs. Shen Suochao and Huang Yalin (2020) suggested building a national emergency language service talent database, outlining goals and strategies. Teng Yanjiang (2021) proposed the MEDTO competency framework for emergency language service providers: Moral quality, Ethical quality, Disciplinary quality, Technological quality, and Operational quality. Based on this, he proposed evaluation standards, offering constructive suggestions for talent cultivation and reserves.

IV. Conclusion

Through a systematic review and comparative analysis, this paper underscores the pivotal role of emergency language services within global risk governance frameworks. It observes that structurally advanced nations such as the United States, Japan, and the United Kingdom have each developed distinctive operational models—characterized as policy-driven, society-collaborative, and daily-embedded approaches—rooted in their specific social infrastructures and historical contexts. In contrast, China's trajectory in emergency language services demonstrates a unique latecomer advantage, embodied through a "crisis-driven, practice-first, rapid theoretical response, and systematic construction" model. The proactive initiatives of the "Anti-Epidemic Language Service Team" during the COVID-19 pandemic not only effectively mitigated language barriers in public health communication but also accelerated theoretical innovation and systemic planning, particularly through the development of practical tools such as dialect communication guides and plain-language resources. This has significantly advanced the development of national emergency language capabilities, demand-oriented service mechanisms, and professionalized talent development. Looking ahead, enhancing China's emergency language service system necessitates a strategic shift from ad hoc crisis management to the establishment of normalized operational capabilities. This entails strengthening standardization, institutionalization, and international cooperation, especially through knowledge sharing and collaborative training programs. By doing so, China can offer linguistically grounded solutions that support the modernization of national governance and contribute to the realization of a global community with a shared future.

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