Contextual Concepts and Post-print Understanding of Contextualism from an Information Science Perspective

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Abstract

[Purpose/Significance] Intelligence science research and intelligence work practice cannot be conducted without context. Context is a fundamental concept in intelligence science and should not be treated merely as background, environment, or constraints; it requires dedicated research. [Method/Process] This paper examines and differentiates various articulations of the context concept, integrates existing context-related research, streamlines relevant expressions under the context concept, and proposes a combinatorial spectrum of context concepts. By abstracting context from real-world scenes and establishing a mapping between scenes and context, contextual elements are identified, and four dimensions of problem-domain-oriented context analysis are proposed. [Results/Conclusion] Context possesses characteristics of interdisciplinary research and indigenous discourse. The understanding and interpretation of the context concept exhibit diversity and should be approached with a holistic and integrated perspective. In the new scene era of the Internet of Everything, scenes amplify the research landscape and application scope of context. Strengthening human-centered context theory research in intelligence science and shaping a context perspective facilitates the systematic analysis of the operational mechanisms of intelligence work and guides intelligence work to engage with various new scenes.

Full Text

The Concept and View of Context from the Perspective of Information Science

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Abstract: [Purpose/Significance] Information science research and intelligence work practices cannot be conducted without context. Context is a fundamental concept in information science and should not be treated merely as background, environment, or constraint; it requires dedicated investigation. [Method/Process] This paper analyzes related expressions of the context concept, integrates existing context-related research, clarifies relevant expressions under the concept of context, and proposes a combined genealogy of context concepts. By treating context as an abstraction of real-world scenarios and mapping between scenarios and context, the paper identifies contextual elements and proposes four dimensions of problem-oriented context analysis. [Result/Conclusion] Context exhibits characteristics of interdisciplinary research and indigenous discourse. Understanding and interpretation of the context concept present diversity and should be approached through integrated and holistic perspectives. In the new era of interconnected scenarios, scenarios amplify the research scope and application range of context. Strengthening human-centered context theory research in information science and shaping a context view helps systematically analyze the operational mechanisms of intelligence work and guides intelligence work to participate in various new scenarios.

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Information science is an extroverted, auxiliary, and supporting discipline. Based on information resource management and regarding information technology as a means, information science provides intelligence support for specific users in specific contexts to solve problems of uncertainty, make decisions, and formulate action plans through intelligence analysis and research.

The purpose of intelligence work is to achieve the connection (i.e., matching) between people and intelligence in specific contexts. Connection requires context; intelligence without context is meaningless or ineffective. Why, when, where, and how to connect people with intelligence needs to be explained within context. In his pioneering meta-communication theory, G. Bateson pointed out that "context is… a pattern of connection… all communication requires context… without context there is no meaning… context modifies meaning." From the perspective of meaning, intelligence is generated in context, and context is a necessary condition for intelligence to exist. Information science research and intelligence work practices cannot be conducted without context.

From a literal interpretation, the compound word "intelligence" (情报) is ingeniously constructed, combining "情" (qing) and "报" (bao) to give it dual attributes as both verb and noun. While the nominal attribute of intelligence has been mainstream, breaking it down reveals its verbal attribute as well. Starting from the meaning of "情" in intelligence, context can be seen as an extension and expansion of circumstances and situations. Therefore, context can be understood as being inherent in intelligence. Given this intrinsic connection between context and intelligence, information science should emphasize the concept of

context alongside its study of intelligence as a meta-concept.

Although scholars generally recognize the importance of context, conceptual understanding remains highly divergent. The context concept still lacks clear and consistent definition. B. Dervin, the founder of sense-making theory who has long studied information behavior, considers context a "beast that is difficult to tame" that can be treated as a methodological tool. Information scientist N. Belkin notes that context is one of the ineffable, difficult-to-articulate concepts related to users in information retrieval. Domestic information scholars Wang Zhijin et al., examining the term "intelligence" in the Chinese context, argue that the unity of cognitive and contextual views forms the cornerstone of feedback theory and models in information science. Based on cognitive studies in information science, they propose that the contextual view of information science means that communication between intelligence systems and users is influenced by external environments, which determine users' purposes and behaviors in using intelligence systems.

Although the importance of context is widely acknowledged, it remains conceptually ambiguous with significant variation in understanding. Context is a fundamental concept in linguistics, sociology, communication, information science, computer science, and other fields, each with distinct research orientations. This paper attempts to explore the basic aspects of context concept research from an information science perspective, examining its connotations and proposing a contextual view.

2 Related Interpretations of the Context Concept

The concept of context exhibits ambiguity and inconsistency in both Chinese and English usage, making corresponding Chinese-English research difficult to identify. Based on lexical differences, different disciplines further differentiate their understanding of context. The following sections briefly introduce contextual understanding from dictionaries, linguistics, and sociology, leading to related research on the context concept in information science, stratifying existing research, and 梳理 ing a relatively discernible path for understanding context.

2.1 Lexical and Linguistic Interpretations of Context

In *Cihai*, context is explained as the specific circumstances and scene of an occasion, referring to situation and state. Beyond the term "情境" (context), there are many related expressions, such as Chinese terms like "情形" (circumstance), "情况" (situation), "情景" (scene), and "场景" (scenario), and English terms like "context," "situation," "scene," and "scenario." Searching the *Oxford Advanced Learner's English-Chinese Dictionary* (7th edition) yields Chinese explanations for four English terms, shown in Table 1 . Among these four terms, the more meanings a word has, the richer its connotation, requiring more specific clarification in understanding and usage. "Scene" contains seven Chinese explanations, making it the most semantically rich and relatively concrete.

Table 1 Chinese Explanations of Context-Related English Terms

English Term	Chinese Explanation
context	Background, environment, or cause and effect of an event; Context, linguistic context
situation	Condition, state, situation, or circumstances; Geographic location or environmental characteristics; Occupation or job position
scene	Location or site; Event or scene; Scene, segment, or shot in film/drama; Activity field, circle, or sphere; View, scenery, or landscape; Painting or photography; Quarrel or disturbance
scenario	Hypothesis, plan, or projection; Plot summary of a film or drama

Note: Chinese explanations compiled from Oxford Advanced Learner's English-Chinese Dictionary (7th edition), Beijing: Commercial Press, 2009.

In linguistics, "context" is frequently used, corresponding to Chinese "语境" (linguistic context) or "上下文" (co-text). Context construction is crucial in linguistic research. British linguist Firth proposed a theory combining internal and external contexts, shifting linguistic research from "introverted" to human-centered internal-external integration. Co-text plays an important role in understanding word meaning, primarily in eliminating ambiguity, clarifying reference, and comprehending meaning. Language is the carrier of communication, and connecting external context (culture, society) with internal context (between the lines) has direct guiding significance for understanding current context. Extending context beyond language naturally leads to sociological research categories.

2.2 Sociological Theories of Context

The sociological concept of context is a typical representative of human-centered approaches. The English equivalent for sociological context is "situation," distinct from linguistic "context." American sociologist Thomas emphasized the importance of social situations for behavioral research, proposing the concept of "definition of the situation." Before any self-determined behavior, there is always a stage of examination and consideration called the definition of the situation. Human behavior is influenced by situations, while simultaneously reacting upon and changing situations—a unity of subjective-objective interaction. American futurist Toffler, in *Future Shock*, explained that the acceleration of surrounding social changes has drastically altered the flow of situations through channels. Situations have no concise definition but possess certain integrity. Situations

can be analyzed through five components: artifacts, occasions, places in human social organization systems, concepts, and information context. Sociological views of context offer reference significance for information science to explore social factors in context.

2.3 Context-Related Research in Information Science

Information science has always emphasized contextual awareness, but research levels, perspectives, and expressions show significant differences. Due to information science's broad absorption of theories and methods from related disciplines, interpretations and usage of context concept diverge in connotation, with relatively chaotic expressions.

2.3.1 Macro-Level Understanding of Context The information environment is an amplified context, representing the macro-level of contextual understanding. The holistic, elemental, and relational perspectives of information environment research guide the study of meso- and micro-level contexts. Yue Jianbo proposed that the main task of information environment theory is to explore the laws of information environment development and evolution, reveal the relationship between human activities and the information environment, and propose effective means for information environments. The information environment system consists of four basic factors—people, information, information technology, and information policy—and their interactions.

2.3.2 Meso-Level Understanding of Context The application domains of information science and intelligence work belong to the meso-level, which also represents the main manifestation of information science's vitality. Much information science application research merely uses context as research background, perspective, or limitation, with numerous studies titled "…scenario, background, environment" such as "digital libraries," "e-commerce," "mobile Internet," "emergency events," each with its own contextual interpretation, large or small, or mentioned in passing. Generally, contextual explanations appear when intelligence processes and work unfold, demonstrating business alignment. This also illustrates from one side that context itself is not easily explained, and there is a relative lack of holistic, consistent understanding of context itself.

2.3.3 Micro-Level Understanding of Context Micro-level contextual understanding represents the specific research content of information science, mainly manifested in two aspects: consolidating and developing strengths in information-seeking behavior research, and introducing context-aware technology and methods for deepening intelligence services. The following discussion elaborates on four specific points:

(1) **Contextual Understanding in Information-Seeking Behavior Research.** In European and American information science circles, user-centered research on information needs, information seeking, information

retrieval, and utilization—information behavior research—is relatively active and specialized. Such research requires placing users in context for consideration, conducting extensive theoretical analysis and comparison of context concepts. In information-seeking behavior research, both English terms "situation" and "context" can be used to refer to Chinese "情境." Distinguishing between "situation" and "context" is also challenging for European and American scholars, sometimes used interchangeably. However, their connotations have relatively clear distinctions. C. Cool points out that context is the framework of meaning. When users interact with information resources, they form an interactive situation within a specific context. This contains two meanings: context is abstract, while situation is concrete; context contains situation. C. Cool and A. Spink stratified context in information retrieval, proposing a four-layer division based on existing research: information environment layer, information-seeking layer, information retrieval interaction layer, and query layer. These layers are not strictly separated and have some overlap. P. Ingwersen, a contemporary master of information retrieval research, integrates user behavior and technical system dimensions of information retrieval within context, proposing an IS&R integrated framework that integrates information seeking and retrieval in context.

Domestic scholars, building on imported and inherited contextual understanding from foreign information-seeking behavior research, attempt interdisciplinary expansion. Li Yuelin et al., in information-seeking and searching activities, treat context as environment and situation as scenario, emphasizing that work tasks are important contextual factors. This corresponds directly to foreign information-seeking behavior research distinguishing between context and situation. Shi Haiyan et al. 梳理 d various contextual understandings and existing information behavior models from European and American scholars, corresponding context to context, and proposed the importance of context in information science research. There remain differences in Chinese-English translation and interpretation of context concepts.

(2) **Development of Contextual Understanding in Web Information Architecture.** In the expansion of Internet practice combining information behavior research and information organization, L. Rosenfeld and P. Morville propose that information architecture design focuses on three aspects: users, content, and context, represented as a Venn diagram of three intersecting circles. They emphasize that information architecture design must align with its context. Here, context refers to the unique commercial or organizational environment in which any digital product or service exists, corresponding to real specific scenarios, including business objectives, technology, politics, culture, and other considerations. The rationale for including technology as a theme in context is that technology is a means of creating new possibilities and constraints, not an essential aspect of information architecture design. Placing context alongside users and content can be understood as emphasizing a design perspective. A.

Hinton specifically discusses how to understand context in information architecture and interaction design practice, interpreting context as actors' understanding of relationships among environmental elements, representing more cognitive and behavioral contextual interpretation.

(3) **Contextual Understanding in Information Retrieval Technology.** In information retrieval and computer technology applications, "context" is frequently used. This research aims for retrieval efficiency, relies on linguistic context, and explores vocabulary, structure, and semantics based on text. In information linguistics, this manifests as solutions for vocabulary control, semantic disambiguation, query expression and reconstruction, etc. For example, Xia Hai proposed a Chinese scientific literature automatic indexing method based on context comparison. Huang Shuiqing designed a computer-aided Chinese context-preserving indexing system. Guo Shaoyou proposed a Web real-time information retrieval method based on context, which selects text from the webpage a user is browsing as retrieval conditions; the retrieval system parses the context through word segmentation, then extracts search terms to construct queries. Lei Shengwei et al. conducted research on automatic citation context identification using text classification and sequence labeling methods through explicit and implicit context combination based on citation sentences.

(4) **Contextual Understanding in Intelligence Research and Services.** In intelligence research, scenario analysis is used for 推演 and trend prediction of unknown futures regarding complex social problems such as strategic decision-making, economic regulation, and policy analysis. Scenarios in scenario analysis describe possible futures and paths to their realization. Here, scenario is not an existing situation or state. Combined with dictionary explanations in Table 1, there is a certain distinction between using "scenario" and "situation." Situation focuses on current conditions, which differs from the artificial design and virtualization characteristics of scenario. The competitive intelligence branch of information science has actively introduced and applied scenario analysis. Yue Zhen et al. regard scenario analysis as an important method in modern competitive intelligence. Huang Xiaobin et al. explore the significance of applying scenario analysis in competitive intelligence research. From the perspective of information science and intelligence work, scenario analysis can be considered a method and means of intelligence research. In intelligence services, placing intelligence services in context represents active thinking for embedded proactive intelligence work to meet user needs and target service accuracy. Liu Yong et al. apply situational analysis methods to intelligence services, proposing the concept of situational intelligence, which can be understood as emphasizing the understanding of service objects and their contexts in intelligence services.

In personalized services, context-aware concepts, technologies, and methods

have brought new prospects, with numerous related application studies emerging in information science. These studies involve three expressions: context, scenario, and co-text, all corresponding to "context." For example, Jiao Yuying et al., based on personalized demand characteristics of Web users, propose research on personalized services (retrieval and recommendation) in digital libraries based on scenario models. Ji Shanshan et al. discuss context-aware function design for integrated mashup services oriented toward personalized, proactive information services, focusing on context ontology construction and semantic matching and reasoning implementation. Li Shuning designs a conceptual model for user context-sensitive digital information services addressing four types of scenario problems in information service processes (resource overload, resource insufficiency, software/hardware and personalized demand mismatch, service loss and dilemma).

3 Amplification of Context Research by Internet Scenarios

The information technology revolution has propelled the development of the information society, profoundly affecting human behavior. Rapid changes in people and their surrounding environments have also brought new changes and situations to information science and intelligence work. With the development of sensor technology, communication technology, and network technology, computer applications have continuously expanded from early desktop computing environments to every corner of human environments. Information and communication technology applications influence people's cognition, communication, and behavioral patterns in specific contexts, strengthening connections in context and making explicit, stable, and multidimensional the connections between people and other elements in context.

The era of "Internet+" thinking and interconnected everything has arrived. With the popularization of mobile Internet and the Internet of Things, GPS-based location services, short-range and near-field communication, and SoLoMo fusion forms have injected new vitality into context research, enriching its connotations. However, what mobile Internet has detonated is the popularity of the term "scenario." Currently, "scenario" is sought after by new media researchers, online marketers, and digital product and service designers. Connection logic has made the term "scenario" 深入人心. As the long-tail effect amplifies and traffic wholesaling captures the masses, scenarios have gradually shifted toward vertical fields and group segmentation, becoming fragmented, individualized, and socialized. The closed loop between online and offline (O2O), the deep binding of ubiquitous intelligent terminals with people, and the omnipresent touching and stimulating of users' thoughts, needs, and gains everywhere. Scenario shaping is discovering, guiding, and creating demand. Scenarios are more general and broad, with commerce and technology constantly creating new profit growth points in various scenarios.

Before this, the term "scenario" was mainly used in film and drama creation, corresponding to English "scenario." A scenario is a set of shots, with relatively

straightforward literal meaning, easier to understand than context. Scenarios concern stories and plots, premised on human existence and activities. Scenarios involve considerable human design, convention, and atmosphere creation, including both physical scenarios (e.g., physical bookstores, shopping malls) and artificially created virtual digital scenarios like WeChat and apps that reflect real-world needs. Today, the boundaries between physical and virtual space in scenarios are becoming blurred. Future scenarios will combine virtual and real elements. Technology and commerce collaborate to create scenarios, and successful scenario shaping establishes business models.

The rapid 裂变 rhythm makes constant fragmentation and recombination of scenarios the norm. In communication studies, Peng Lan points out that the essence of mobile communication is scenario-based services—that is, perception of scenarios (context) and information (service) adaptation. Communication researchers also hold different views on the distinction between scenario and context concepts. Tracing back to theoretical roots, the issue returns to the inherent inconsistency between "situation" and "context" in English discourse. Two new media journalists from Silicon Valley, R. Scoble and S. Israel, in their book *Age of Context* (domestically translated as "The Coming Era of Scenarios"), define five technological forces of scenarios: mobile devices, social media, big data, sensors, and positioning systems. The term "context," often translated as context, is here interpreted as scenario. This special case demonstrates that the expressions of context and scenario are not static but change with the development of information technology environments and the needs of information communication and usage.

The application of scenarios in new media is undoubtedly successful. The scenario revolution under Internet+ thinking amplifies the research pattern and application scope of context, advancing existing context research. However, it should be noted that scenario usage is relatively broad, more like an umbrella concept that includes everything. From an information science perspective, we need to absorb new media's scenario thinking and specific application scenario development practices, but cannot directly interchange scenario with context or use them indistinguishably. The design and service thinking of focusing on users, deeply cultivating scenarios, and creating ultimate experiences brings new contexts, demands, and service expansion ideas for intelligence work. By leveraging the 通俗易懂 and broad influence of the term "scenario," we can connect scenario with context, permeate and apply context theory and methods to various new scenarios, achieving theoretical elevation of scenario practice through context theory.

4 A View of Context

The above analysis of word meanings and context concepts across multidisciplinary fields reveals a diversified "chaos" in understanding and using the context concept. Accurate correspondence between Chinese and English context concepts is difficult. Therefore, in the Chinese context and from an informa-

tion science perspective, referencing contextual interpretations from other disciplines, this paper constructs a combined genealogy of context-related concepts, analyzes contextual elements and mapping, and proposes dimensions of context analysis, thereby forming a view of context.

4.1 Combined Genealogy of Context Concepts

First, map scenario and context as the relationship between reality and essence. Scenario is closer to reality; context is closer to abstraction. In scenarios, starting from user needs, we define the problem domain, then abstract various scenario elements and their relationships to obtain a conceptual model—the context. Context is the product of analyzing real scenarios, representing understanding, analysis, and modeling of scenarios, reflecting where meaning lies. Context is a dynamic and changing complex spatiotemporal synthesis containing numerous elements. Clarifying contextual elements and relationships in scenarios subsequently establishes connections within scenarios. The reason for emphasizing context as the conceptual model of scenarios is to consider the inheritance, promotion, and application of existing research results in information science and related fields. Context modeling is also called contextualization of scenarios.

Second, scenes are contained within scenarios and their mapped contexts. In the mapping process from scenario to context, subjects' activities form 一幅幅画面 (pictures), namely scenes—the 通俗 expression being "处境生景" (circumstances create scenes). In short, scenes are the concrete existence of scenarios through the mediation of context. Based on this understanding, taking uncontested environment as the largest periphery, this paper proposes the "境景结合" (environment-scenario integration) relationship between context and scene, as shown in Figure 1 [Figure 1: see original paper]. Environment is the largest, consisting of external environments composed of information, technology, humanities, and society. Scenarios exist within environments; there is more than one scenario, with switching and diffusion between scenarios, hence scenarios are represented by multiple overlapping ellipses. Scenarios consist of a series of scene fragments; a scene is equivalent to an act, with switching, diffusion, and fusion between scenes, hence scenes are also represented by multiple overlapping ellipses. Context is the conceptual model formed by abstracting the entire scenario, reflecting the essence of scenarios. One scenario maps to one context—that is, one context corresponds to one scenario—so only one ellipse is used.

In Figure 1, positioning context as the focus and abstraction beneath real scenarios makes it the core of the entire combined genealogy. Under this view, context is regarded as a research means for scenario analysis. Context is suitable for specific research professional expressions, while scenario and scene are suitable for relatively universal expression and communication. The paper does not deliberately constrain the relationship 梳理 ing of context concepts by English expressions; the inclusion logic of context concepts is also a human per-

spective based on existing context-related usage. Scaling the connotation size of context concepts aims to clarify relationships among this group of concepts, helping to clarify and standardize context usage in information science. A suggested Chinese-English correspondence for context-related terms in information science is: environment (Environment), scenario (Scenario), context (Context), and scene (Scene).

4.2 Contextual Elements and Mapping

Examining contextual elements from a human perspective rather than focusing on technology represents the emphasis of information science's view of context. Scenarios exist because of people; context is a three-dimensional abstraction centered on people in scenarios. Therefore, users are the fundamental element of context. Wherever the user is, context emerges from there. Contextual elements and relationships are clarified through mapping, as shown in Figure 2 [Figure 2: see original paper]. Thinking around people, contextual elements have certain 归纳性 (generalizability). Here, contextual elements are divided into three categories: basic elements, enabling elements, and spatiotemporal elements. In the diagram, U represents user/person, S represents structure, L represents language, A represents action, and I represents information/intelligence. To distinguish from the initial letters of technology and time, technology uses uppercase T, time uses lowercase t, and place uses lowercase p for consistency.

(1) Basic Contextual Elements: User/person U, language L, structure S, and action A. In basic contextual elements, user/person is the primary element—without users, there is no context. Language is the carrier for users' expression, communication, and interaction in context, including text, symbols, etc.; language use generates content. Human behavior requires language and symbols for expression, and intelligence work based on information chains can only proceed with transmission and transformation. Therefore, language is an important contextual element in information science. Structure is the abstract expression of specific organizations or patterns; action is interpretable behavioral activity under the interaction of the first three basic elements. People cannot exist in a vacuum; users' actions are naturally constrained by various organizational structures, conditions, and restrictions.

(2) Enabling Contextual Elements: Information/intelligence I, technology T, and connection. In enabling contextual elements, connection is primary. Connection has no letter code and is specifically represented in Figure 2 as lines between basic contextual elements. Information/intelligence and technology are placed on the lines of the connection triangle, with technology on the periphery and information/intelligence inside. This design signifies that information emerges and flows with the establishment of connections among basic contextual elements, constituting intelligence value when matched with specific user needs. Technology is the enabling means of connection, hence placed on the periphery of connection triangle lines.

(3) Spatiotemporal Contextual Elements: Time t and place p. In spatiotemporal contextual elements, time and place depict when and where users are in context. Context dynamically changes with time and place, mapping real scenarios spatiotemporally.

The framework of contextual elements continues the meaning orientation of context as an information behavior reference framework, offering reference value for current context understanding and applying context theory to explain real scenarios.

4.3 Dimensions of Context Analysis

From scenario to context is the process of seeing essence through reality. Context can be analyzed in "1 domain + 4 dimensions." The "1 domain" refers to the problem domain, thinking contextually about contextual elements and their relationships in intelligence work oriented by problems. The four dimensions include ICT dimension, social era dimension, disciplinary specialty dimension, and industry field dimension. These four dimensions cover main aspects of scenario analysis and contextual modeling needed for intelligence work:

- **ICT dimension** includes emerging technology developments such as big data, cloud computing, artificial intelligence, and 5G.
- **Social era dimension** includes considerations of ideology, national propositions, group cognition, and individual identity.
- **Industry dimension** involves analysis of application domain characteristics where intelligence work participates, such as national security, consumption, healthcare, manufacturing, and technology.
- **Disciplinary specialty dimension** reflects multidisciplinary participation and integration in context analysis, with contextual understanding diversity from humanities, social sciences, and technical engineering disciplines providing multi-theoretical and methodological support.

As shown in Figure 3 [Figure 3: see original paper], these four dimensions have certain analytical directionality and theoretical guiding significance for holistic context cognition, though application practice still requires further deepening and concretization.

In information science that connects people and intelligence, the concept and view of context help better conduct intelligence work within the meaning framework constructed by context. Understanding context aims to better comprehend the "people, events, and things" and their connections in intelligence work. Intelligence work establishes, consolidates, and diverges connections within specific contexts, forming closed connection loops that ultimately realize intelligence value.

Context tends to be a spatial concept that should not be fragmented but understood holistically and integratively. People, activities, and technology are all elements of contextual space. Centered on the core theme of people, contextual

elements establish connections and interactions. The contextual view from an information science perspective emphasizes human subjectivity, differing from some technical research views that subdivide context types or concretize context as a factor (variable).

Context concept research is challenging. Contextual concept interpretations across different disciplines show diversification, and even within the same discipline, different viewpoints exist. Given information science's interdisciplinary nature, understanding context in multidisciplinary integration represents the unique perspective of information science. Strengthening context theory research in information science requires actively absorbing and introducing context-related theories, methods, and technologies from cross-disciplinary fields. The connotation of context concepts can be stratified and relationally interpreted, but information science cannot lack a contextual view, which would lead to virtualization and elusiveness of intelligence work in specific contexts, superficial anxiety about information generalization and big data invasion in information science theory, and endless debates between intelligence and information. Defining context establishes intelligence, naturally distinguishing it from universal information.

Information science and intelligence work have experienced or are experiencing typical scenarios: intelligence work in scientific literature scenarios, intelligent service upgrades in digital library scenarios, website information architecture design in Web scenarios, public opinion monitoring in social network scenarios, emergency intelligence support in emergency event scenarios, and health information services in medical health scenarios. Each scenario has specific contextual shaping and operational mechanisms behind it. The four dimensions have certain analytical directionality, providing theoretical guidance for holistic context cognition.

Today's domain participation in information science can be summarized as contextual adaptation of intelligence work. What remains stable is intelligence work's core competence (organization and analysis), while what constantly changes is intelligence work's contextual adaptation and expansion to various new scenarios. In the new era, we need to strengthen the consciousness of combining intelligence work with various new real scenarios, conduct contextual analysis of real scenarios, and enhance the domain adaptability and service accuracy of intelligence work.

Finally, context concepts change with era, society, culture, domain, and usage. Context research under past specific historical environments and research conditions should be objectively reviewed. In the Chinese context, like intelligence, context requires indigenous interpretation with Chinese characteristics and cannot directly apply Western expressions or "rigidly" borrow expressions from other fields. We must continuously strengthen intelligence elements in the new era to develop context theories and methodological systems with intelligence characteristics.

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Note: Figure translations are in progress. See original paper for figures.