Generation Mechanism and Social Impact of Knowledge in the Era of "New Quality Productivity"

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Abstract The changes in knowledge forms in the era of "new quality productivity" are closely related to the development of society. With the rise of the Internet, "the world of dataism is coming". The traditional knowledge production model is undergoing fundamental changes in structure and nature. The most prominent change is that knowledge is becoming increasingly inseparable from data networks. The collaborative production of knowledge based on the Internet is becoming increasingly common, and Wikipedia is a prominent example of this. Wikipedia makes the networked production of knowledge possible by utilizing collective intelligence and data connectivity. Wiki users are commonly referred to as "wiki". This paper conducted interviews with 30 Wiki users and used content analysis to statistically analyze the interview records, in order to study the significance and value of the Wiki knowledge production model for online users, and to glimpse the impact of the knowledge structure changes in the era of "dataism" on social change.

Key words "New quality productivity"; Knowledge generation; Social impact; Wikipedia; Qualitative analysis

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The article from the *People's Daily* points out that "new quality productivity" has the characteristics of high technology, high efficiency, and high quality, with innovation playing a leading role, and is a qualitative state of advanced productivity that conforms to the concept of new development. This means that "new quality productivity" is inevitably an environmentally friendly and resource-saving innovative productivity, and the development of new quality productivity objectively means the development of sustainable green productivity. "Dataism" is one of the important symbols of new quality productivity. Yuval Noah Harari, a history professor and Ph. D. at the University of Jerusalem, has proposed the concept of "the dataism world is coming" in his new book *A Brief History of the Future*. He said that the church and the Committee of State Security were the main things that controlled us in the past, but today it may be Google and Facebook that control us. Jack Ma sees the new quality productivity based on big data as a "new energy", and he says he is overshadowed by big data[1]. With the rise of the Internet, the era of "datalism" new qualitative productivity has arrived. The production mode of traditional knowledge is undergoing fundamental changes in structure and nature. The most prominent change is that knowledge begins to network, or that knowledge begins to become increasingly inseparable from data networks. The collaborative production of knowledge based on network is becoming increasingly common, and a prominent example of this is Wikipedia, which makes the networked production of knowledge possible by utilizing collective intelligence and data connectivity. Wiki users are commonly referred to as "wiki". This paper conducted interviews with 30 Wiki users and analyzed the interview records using content analysis. The aim is to study the significance and value of the Wiki knowledge production model for online users, and to gain insight into the impact of the knowledge structure changes in the era of "dataism" on social change.

The mode of knowledge production not only depends on the social form, but also has a reciprocal effect on the social system and society itself. The norms and knowledge characterized by the cognition of social practice often reshape society itself. As Giddens said, "all forms of social life are partly composed of the knowledge of their actors about social life"[2]. According to Wikipedia's definition of knowledge: "knowledge is the cognition that is certain about a particular topic and has the potential to be used for a specific purpose". What is emphasized here is the practical function of knowledge, namely the function of knowledge as a tool that can bring benefits to people. Russell L. Ackoff once constructed a pyramid: the lowest end of this pyramid is data, followed by information, knowledge, understanding, and wisdom from bottom to top, known as the DKIW (data-information - knowledge - wisdom) pattern. This pattern views data as structured information and knowledge as actionable information. This understanding of knowledge views the process of acquiring knowledge as a screening mechanism, selecting the knowledge we need from various facts and a series of data. David Weinberger regarded knowledge as the object of ultimate beauty. "When the concept of knowledge first appeared in human society, the ability to understand the world is the most fundamental difference between us and other animals. This is our achievement as humans, and also our destiny. Knowledge itself cooperates with each other to form a perfect and orderly

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whole"[3]. He believed that making the pursuit of knowledge a noble goal in culture has profound significance. This view abandons the "pyramid" development model of knowledge, which holds that knowledge has nothing else to do except to exert the "usefulness" of things.

1 Wiki system from the perspective of knowledge networking

"Wikipedia" was officially founded by Jimmy Wales and Larry Sanger on January 15, 2001. It utilizes the breadth and diversity of users to produce knowledge, and each user can edit and modify the content of web pages. At the same time, Wiki web pages have a social nature, allowing users to discuss the knowledge they need through registration and establish social relationships with other users. Perhaps the most successful aspect of Wikipedia lies in its successful utilization of collective intelligence and resources. Both in terms of the number of entries and language versions, Wikipedia is growing at an astonishing rate, and the diversity of these entries and versions is driven by collective intelligence. Wikipedia links to the largest virtual community, fully leveraging the advantages of group resources. "Collective intelligence and resources are actually the ability of virtual communities to use the expertise of their members. The internal driving force of web 2.0 is to return the dominance of the Internet to individuals, so as to fully tap the enthusiasm of individuals and greatly liberate the potential of individual creation and contribution"[4]. Users create entries based on their personal interests and wishes. The openness of Wikipedia allows any user to register and edit, and both pre- and post-modified pages are saved. The pages are always in an editable state and therefore have no "stopping points", existing as a process forever. Due to the fact that Wikipedia pages are collaboratively created by users, the knowledge it forms is not a one-way long form, but rather an open knowledge that is accessible to the general public. In other words, "the ideas of Wiki are not born from harmonious ideas, but from constant review and correction, because Wiki is a process, not a product, and it replaces the guarantees provided by institutions with the possibilities supported by the process"[5]. Due to the wide distribution of volunteer types on Wiki, it's not just general knowledge, professional knowledge in the past is often spread across the Internet. The filtering of knowledge in Wiki mainly relies on the management mechanism of administrators and the consciousness of volunteers. In the production process of Wiki, knowledge begins to be inseparable from the network, or in other words, knowledge has become an attribute of the network, combining the characteristics of network openness, equality, participation, and publicness.

2 "Use and satisfaction" of wiki

Regarding the analysis of "use and satisfaction" of wiki, there have been a lot of discussions and analyses in CNKI literature, and this paper will not repeat them. The author aims to depict the changes in learning methods and behaviors of wiki before and after using Wiki through the organization and analysis of interview records, in order to reflect the impact of knowledge networking on social change.

2.1 From researching to creating knowledge The respondents' sense of participation mainly comes from the ability to edit and modify Wiki pages, which traditional knowledge production cannot provide. Before the rise of the Internet, knowledge acquisition mainly relied on libraries and reference rooms, and readers were only passive readers. However, the networking of knowledge has changed this situation. Interviewee 7 said that reading for a while makes me want to fall asleep, it's quite boring. Creating an entry makes me feel like an author" (interviewee 7 created entries for attractions such as Heilongtan, Funiu Mountain, Jinniu Mountain, *etc.*). The process of creating knowledge has made Wiki users participants, and the traditional audience has become users. Traditional knowledge production is aimed at readers, but readers are only viewers, not participants. Their vitality is released through the networking of knowledge. "On the day when our school changed leadership, I was already editing the page" (interviewee 10). Most interviewees have edited the page and participated in knowledge production while using Wiki.

2.2 From "trusting experts" to "trusting Wiki" Traditional knowledge production is based on the audience's trust in professional knowledge and authority, but in Wiki, the author has found that this trust is shifting towards the Internet. When asked "which side do you lean towards when the knowledge given by a teacher conflicts with the knowledge in Wiki why", half of the interviewees answered Wikipedia. They stated that teachers are knowledge transmitters, but the people who edit entries on Wiki may be practitioners studying this area of knowledge, and the knowledge breadth of teachers cannot be compared to Wiki. "If you don't know, you can ask Baidu. As the saying goes, knowing is knowing, and if you don't know, you'll be on Baidu" (interviewee 11). Interviewee 7 believed that "teachers often make mistakes, Wiki rarely makes mistakes, and there are links attached". The author observed that the student population generally has a high level of dependence and trust in online knowledge, while their exposure and trust in traditional textbook knowledge are decreasing.

2.3 From "sense of reality" to "sense of achievement" The traditional knowledge production mechanism is based on a real world, where people's sense of identity comes from the affirmation of authority. Knowledge networking and "trust transfer" transfer individuals' sense of identity from the real world to the network. "We edit an entry together in our dormitory, and each person is responsible for a part of the editing. After successful creation, there will be a sense of achievement" (interviewee 7). The pleasure of creating knowledge has become the main driving force to stimulate users' potential. Interviewees believed that "editing pages is fun, while staying in class is too boring" (interviewee 5).

Most interviewees mentioned the sense of achievement and joy when creating entries, which will also make them more identify with content production and user relationships based on Wiki.

3 Social impacts of knowledge networking

The knowledge production model presented by Wiki constitutes the main type of knowledge production in the era of "dataism" (networking), which is different from traditional knowledge production. The data networking has successfully activated the potential of individuals and gathered the human resources of the entire society. At the same time, the trust in experts is transferred to mobile pages, endless links and diverse windows, gradually promoting the diversification of individual identity in modern civil society.

3.1 Activating individual When a "crisis event" occurs in society, traditional social groups are stimulated to engage in knowledge production related to it. But due to the filtering effect of traditional expert mechanisms, only a small amount of knowledge (truth) can be seen by the public. Knowledge networking transforms the audience into a user group, activating the energy contained in individuals. The resources of each individual are interconnected to form collective resources and intelligence, while individuals are also quite active in the network. The networked knowledge does not accept the filtering mechanism of experts. A vast amount of knowledge ("truth") is presented to users, who may filter the knowledge according to their interests. In this way, not only do individuals have the right to choose knowledge in their own hands, but their creativity may also be greatly activated.

3.2 Trust transfer As Manuel Castells stated in the *Internet Society*, "a trust in online power derives pleasure from diversity"[6]. Wikipedia is based on a kind of "mass" knowledge, which not only brings everyone into the knowledge network, but also challenges the modern society's "out of domain" mechanism—the "expert system", which relies on the trust of social actors. In the era of "dataism", knowledge networking has lowered the threshold for knowledge, but it has also made it difficult to define risks and eliminate modernity anxiety. Knowledge networking enables the gradual transition of past trust in expert systems to knowledge networks, which often accelerates the spread of risks. In the past, expert systems carried the trust of the public, maintained social stability, and played an important role in eliminating social panic. In traditional society, experts control the production and dissemination of knowledge, and they have the power to define knowledge, which is often associated with power. As Foucault believed, knowledge is a production mechanism of power. The key to the successful exercise of knowledge power lies in public trust. Although this trust carries great risks, people have no other choice. Experts have the authority to define risks and eliminate uncertainty, which often requires a series of recognition processes or officially recognized certificates. But on Wiki, the process of knowledge authentication has become very different. The recognition of knowledge on Wiki is often not based on the recognition of certificates or actual status, but on the speed of publishing messages, which are continuously improved, edited, and revised by other users after publication. Social media in the era of "dataism" (networking) "has achieved connections between people, between people and information, and between people and services. However, there are also some paradoxes in the development of social media, and the 'information cocoon' is one of them. People's reception of information is guided by their interests, thus confining themselves to a closed 'information cocoon', and the use of social media further promotes the formation of the 'information cocoon'"[7]. In this 'information cocoon', people reject other different voices and only include those who share their opinions in this echo chamber. These rumors and echoes have exacerbated the spread of risks. Due to the weakened authority of experts and the networked and fluid nature of the knowledge structure trusted by users, it is often difficult to stabilize social order and eliminate uncertainty in risks, which has also led to modern anxiety. When social emergencies occur, due to the lack of authority mechanism to speak out, people's anxiety in reality often spreads to the Internet, which is difficult to dispel.

3.3 Diversified "identification" Another consequence of knowledge networking is the change in knowledge identification mechanisms. The traditional recognition of knowledge is mainly based on the recognition of professional departments and the publication of professional journal articles. Linear closed knowledge is based on authority as the stopping point. When we have doubts about knowledge, we often seek out more authoritative and core materials. When we see surveys and data released by authoritative institutions, the path of knowledge exploration comes to an end. Few people doubt the reliability of data and surveys because the cost of doubting experts is too high. Individuals have become accustomed to using authoritative results to terminate their doubts. However, in the era of knowledge networking, individuals are more accustomed to pursuing personalized knowledge between different pages, and the characteristics of the Internet make knowledge no longer have a stopping point. After the text, there are no longer simple references, but links to these references, and users keep clicking on the links as they pursue them. In different links, individuals not only acquire knowledge, but also participate in the production of knowledge. Their roles constantly change between multiple windows, and their sense of identity flows between multiple pages. Individuals reshape their self-identity through the transformation between different pages.

At present, knowledge has become an attribute of the network, which has changed the traditional knowledge structure, making the previous filtering system for knowledge no longer applicable to the Internet. The role of experts in the traditional society has changed, and the public's trust mechanism for expert authority

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characteristic of carbon neutrality movies. As shown in the movie *The Day after Tomorrow*, due to human overuse of natural resources and excessive carbon emissions, in order to obtain economic benefits, they neglect the changes in their living environment, resulting in global climate change and the invasion of extreme weather. Through specific movie explanations, people can understand the origins of global climate change and reflect on what human activities are causing this result.

3.2 Advocating for energy conservation and emission reduction in daily life This feature is based on the further promotion of the first feature, which means that when people have awareness and reflection on global climate change, they should implement it in concrete actions. Therefore, filmmakers often present energy-saving and emission reduction methods through popular science movies, educational movies, and other types of movies and televisions, generating positive social effects.

In *An Inconvenient Truth*, Gore, as an environmentalist, conducts research on climate and environment, and calls on people to prevent climate change. One important way to prevent climate change is through energy conservation and emission reduction. Through the advocacy of energy conservation and emission reduction as a way of survival, production and life, the overall goal of carbon neutrality is ultimately achieved.

3.3 Policy promotion of clean energy The ultimate goal of achieving carbon neutrality must promote the use of clean energy. As seen in *The Wandering Earth*, the engine that drives the Earth to escape the solar system and the turning engine use ubiquitous "stones" to produce nuclear fusion, becoming a new type of energy and a clean energy source.

The implementation of clean energy scenes is more common in carbon neutrality movies, such as wind turbines of displaying wind power generation, new energy vehicles carrying people for transportation, solar panels collecting solar energy, and so on. All of which are presented in a specific element in the movie, affecting people's usage habits and playing a certain role in promotion and popularization.

Global climate change has become an unavoidable topic in the community with a shared future for mankind. China has promised to reach carbon peak by 2030 and carbon neutrality by 2060. As a medium of influence on the public, the influence of movies on carbon emissions behavior cannot be ignored. As filmmakers, it is of great educational significance to the public by integrating carbon neutrality knowledge into movie dissemination and presenting carbon neutrality in the form of images. The future presentation path of carbon neutrality movies is obviously influenced by the means of movie dissemination, especially new technologies such as the metaverse. There will inevitably be more diverse and complete forms to present carbon neutrality in the future. Each of us filmmakers should make corresponding efforts for carbon neutrality, and the road to carbon neutrality movies is long and arduous!

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has been transferred to the mobile network. It cannot be denied that there are still controversies and diverse voices on the Internet, but the Internet has never acted on humanity in a purely technological way. The consequences of knowledge networking are also dual layered and need to be viewed dialectically. At the same time, the recognition mechanism for knowledge has gradually shifted from reality to web pages. Individuals' perception of the life meaning and their initiative converge into a virtual community, where knowledge shapes the future in its unique way.

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