

Study on Reaching a Consensus in the Collaborative Network-editing

A Case Study of Wikipedia

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Abstract—Wikipedia, as a representative of the online encyclopedia, has destabilized the way of traditional book editing and publishing. It becomes the foretype of the multiplayer cooperative mode of knowledge production in the Internet age. Although anonymity and decentralization of the network broke the discourse hegemony, the Internet also provides a free platform for questioning and negating. While what Habermas calls "objection crisis" on the network is even more significant, it is still possible to reach a consensus between two rational and sincere people because of the commonality between the subjects in the communicative action. Objection is not only the necessary process in building consensus, but also promotes "ideas flow" which is the most important driving force for a group generated from diverse thoughts in the networking groups.

Keywords—Wikipedia; knowledge production; objection crisis; Internet

I. INTRODUCTION

In the modern information society, knowledge has become one of the core elements that promote the development of human society. Technological progress makes the way of knowledge production move from individual labor to collaborative cooperation. The change of knowledge production model also profoundly affects the form and content of knowledge from breadth and depth. In the society that multiculturalism and multiple values coexist, the popularization of the Internet has on the one hand promoted the development of multiculturalism, and on the other hand, has intensified its inherent contradictions. The anonymity and "decentralization" of the Internet have broken the hegemony of the discourse, enabling everyone to have the opportunity to speak in equal terms. They can freely express their opinions or deny other people's opinions at any time and any place, but this often leads network communication into a melee. The dilemma of network communication lies in the fact that the network media promotes equality and free expression, and at the same time provides a platform for more rational and irrational negation and doubt. This actually makes it more difficult to reach consensus. Rational expression is still facing the risk of collapse, and the irrational expression of flooding on the Internet is even more inconsistent. As Habermas said, "The

establishment of a reasonable motivation based on the ability to speak out constitutes the core of the problem, making the language consensus form behave as a destructive mechanism, because the risk of opposition continues to gain new nutrition from experience."

The popularization of the Internet has greatly promoted the production and dissemination of knowledge on the one hand and subverted the traditional knowledge system on the other. Today, value pluralism and liberalism have become mainstream trends of thought. Under the premise that "authority is dead", whether knowledge as a special consensus can be reached, or whether the understanding and consensus among different groups of people on the Internet is possible become a major issue concerning the stability and prosperity of the society. The multi-person collaborative knowledge production model represented by Wikipedia and its advocacy of "openness, equality, collaboration, and sharing" has brought about a major change in knowledge production. However, due to the subversive nature of Wikipedia's model, it has been from the very beginning that controversy has continued. Especially in recent years, Wikipedia has encountered multiple crises, people began to doubt about multi-person collaborative network knowledge production model. Although Wikipedia is committed to "passing a complete and comprehensive encyclopedia free of charge in every language in the world" and thus "bringing together all the knowledge of mankind", this good wish that can only emerge in the Internet age is fascinating, but is it possible to achieve a human understanding of "Utopia" in the public interest through consensus through network collaboration? Is multiplayer collaborative web editing model the future of knowledge production or is it another popular farce on the Internet?

II. THE WIKI'S CRISIS

Wikipedia was founded by Jimmy Donal Wales on January 15, 2001. As of January 2018, 72.68 million volunteers participated in this program, contributing 299 language versions, 47.32 million terms. It is the largest web encyclopedias in terms of size and number of visits. However, since 2007, the overall growth rate and activity of wikis have been declining. The global active users (users

who edit more than 5 times in a month) have dropped from the highest number of 91,320 in March 2007 to the lowest level in Sept. 2016. The most active users of English Wikipedia fell from 53,617 in March 2007 to 28,380 in Sept. 2013, a decrease of more than 47%. The Chinese Wiki was established as early as 2002. However, due to the special political and cultural factors in the mainland, the active users have remained below 2700. The most active core personnel are only dozens of people. Although active users have increased since 2007, they are far from the peak. The reduction in active editing has led to a reduction in the number of terms edited. This is a big blow to web encyclopedias that feature fast content updates. Apart from language, politics, and other factors, the operation of Wikipedia itself, that is, the elimination of discourse privilege through "decentralization" and the idea of consensus through discussion, can easily become long and tedious online tug of war in practice. "Editing War" and frequent false News on the wiki are some of the bad examples. For instance, in 2006, Taiwan's Wikipedia created the term of "Pingxingguan Campaign". Due to the bias of content and different understanding of historical events, it triggered a counterattack on the mainland Wikipedia. Within a few years, the term was modified nearly a thousand times. "Editing War" broke out several times, and administrators couldn't avoid violating Wikipedia's original intentions. They once set the term to "not modifiable." Another example is that on January 20, 2009, when Obama took office as President of the United States, the erroneous reports by Wikipedia of the deaths of Edward Moore Kennedy and Robert Carlyle Byrd had extremely bad influence, which prompted Jimmy Welch to urges the establishment of new editorial methods, "trusted editors" need him to be approved, in order to become an anonymous biography writer.

Although Wikipedia has developed three core content guidelines: "non-original research, neutral point of view, availability for verification", technical details are used to retain details of all historical revisions and to implement "retreat but three principles", while using robotic programs to clean up zombie account and other means to avoid sabotage and "edit war" outbreak, but the effect is not ideal. In fact, the war on the wiki has never stopped. This is a struggle between exclusionism and inclusiveness. It is also a conflict between expert editors and democratic editors. When people struggled with the complexity and chaos of the reality of Utopia, we had to re-examine the complex effects of the network on human knowledge production. The German sociologist Jürgen Habermas discovered the existence of "risk of objections" when studying human interactions: the more arguments rational arguments provide, the more they are challenged to generate objections. At risk, the debate will continue uninterrupted, and the communication will be in a state of collapse. Specifically, for Wikipedia, if the two parties cannot form a consensus in the "editing war" for a long time, it will cause an embarrassing situation of "stop when close, start again when open". The crisis faced by Wikipedia is rooted in the possibility of human cooperation and consensus, but the Internet has undoubtedly exacerbated this crisis.

III. COLLABORATION AND CONSENSUS

Collaboration is only one way to reach a consensus. Consensus can also be achieved through power, voluntary or compromise. This article only discusses the possibility of achieving consensus in the context of network collaboration, but the realization of possibility is still affected by many real factors. Collaboration is the process by which people who share common goals and follow the same guidelines engage in a job. It is a means of coordinating the relationships among members and their work in order to achieve the desired goals. The purpose of collaboration is to make full use of all resources (including capital, equipment, manpower, technology, information, etc.) to achieve goals that are difficult for individuals to achieve. In network collaborative knowledge production, this goal is to reach consensus and produce knowledge.

The key to answering the question of whether consensus in cyber collaboration is possible lies in how to understand the exact meaning of the two terms "consensus" and "reached." First of all, what kind of "consensus" is reached (what is the object of "reached"?), and what degree and scope can be referred to as "reached" (What is the standard of "achievement")? In simple terms, a consensus among many people can be called a consensus. The content can be anything. We only examine the consensus in the production process of multi-person collaboration knowledge, that is, consensus based on knowledge. Knowledge is a knowledge of certain topics. It should have features that can be proved or believed and has the potential to be used for specific purposes. Only a certain understanding can form knowledge. Vague, uncertain, disorderly understanding is not conducive to accumulation and dissemination. It cannot guide practice effectively and it is difficult to form knowledge. Therefore, the process of knowledge production is the process of generating certain beliefs, or knowledge, which is universal. It is a human understanding based on consensus. Therefore, the universality of knowledge is the basis of consensus.

Consensus may also be possible because language-based understanding is possible. First, the universal use of language and the commonality of the symbol system itself is the objective basis for understanding. "The minimum meaning of the term 'understand' is that at least two subjects with linguistic and action abilities understand a linguistic expression in unison." In other words, the two interacting subjects understand each other. The other party expresses the meaning of the language and accepts the conditions on which the other party is based. The recognition of the connotative meaning of the language symbol ensures the effectiveness of human communication. Second, the human interaction activities have the commonality and always follow a certain common standard. This background basis is the fundamental reason for understanding and reaching consensus. Habermas agrees with Weber's view that human behavior is not a simple physical movement, but an intentional action; it is always in a certain degree. Activities in the sense of a rule or guideline embody the expectations of a community of society, which is expressed by members' acceptance of norms. "If anyone wants to understand, he must abide by common standards. According to this common standard,

participants must. It can be decided whether consensus can be reached. "As long as consensus or disagreement is measured on the basis of standards that both parties follow, it is based on what the participants envision or actually exist. Such consensus or disagreement is based on each other. Therefore, follow the three principles of effective communication that Habermas called: the truth validity claim for the objective world (truth validity claim), the sincerity of the expression of the subjective world (sincerity validity claim), and the justification for the expression of the social world (rightness validity claim), it is possible to achieve consensus among different subjects.

Robert Aumann, the Nobel Prize winner in economics, published a short but profound paper *Agreeing to Disagree* in 1976, using mathematical logic to indicate: "If two people having the same prior knowledge, and their posterior knowledge for a given event A is common knowledge, then these posterior knowledge must be equal, even if their posterior knowledge is based on the basis of different information, in this case, this is also true. In short, it is impossible for people with the same prior knowledge to reach inconsistency." In other words, two rational and sincere people will reach a consensus inevitably. If the consensus cannot be reached, then one of them must be irrational or hypocritical. The "prior knowledge" referred to by Professor Orman refers to knowledge that can be obtained without empirical or empirical evidence. Specifically, it is knowledge that can be obtained through logical reasoning. "Post-inspection knowledge" means that it must be learned by experience or the knowledge that empirical evidence can obtain is a summary of experience and evidence. "Common knowledge" refers to knowledge that all people know and agree to. We can compare Prof. Auermann's conclusions with those on Wikipedia: on the wiki, people with the same "prior knowledge" refer to rational and sincere people, only the discussion among these people is meaningful that can be carried out. "After knowledge" is the result of the discussion. "Common knowledge" refers to rules and operating guidelines developed by Wikipedia. The founder of Wikipedia, Jimmy Wales, is also convinced that a consensus between rational and sincere people is inevitable. He once said: "The real difference is not between the right and left, but between a group of thoughtful people and a group of stupid people."

IV. THE SIGNIFICANCE OF OPPOSITION

In Jimmy Welsh's view, it is possible and even necessary to reach a consensus between rational and rule-abiding people. The objection is generated simply because the two sides or one of the parties to the discussion are not rational (not smart or "stupid"), but it is very difficult for the two parties in the debate always maintain absolute rationality and sincerity. Participants actually are often affected by many factors, and they cannot be completely rational and sincere, and dissent then arises. In the situation where the ideal discussion conditions are difficult to meet, the public debate becomes the norm in the Internet debate. This requires us to re-examine the relationship between objections and consensus.

First, dissent and consensus are not antagonistic relations. Disagreement is of great significance to reaching consensus. Wikipedia operates through web collaboration. The ultimate goal of the term editor's argument is to form a consensus to "converge all human knowledge". In order to ensure the purity of this goal, Wikipedia has developed rules to avoid "Want to be famous, advertise, and destroy of the prankster". Excluding irrelevant factors, the generation of dissent in the wiki is still inevitable. This stems from the fact that people may have multiple views on the same issue. If the two parties do not agree with each other and both believe that their own views are truth, they will always be unable to reach a consensus. One of the key issues is how to understand the concept of truth. Traditional truths conform to the view that there is objective truth, and when the proposition matches the fact, it is called truth. The reason for this disagreement is that both parties have differences in their understanding of the facts. Because the objective facts are unique, once everyone understands is in accordance with the facts, there will be no further objections. However, after experiencing the skepticism of Descartes and Hume and the answers of Kant and Hegel, the fusion theory and practical theory of truth provide us with different perspectives. One of the shifts of contemporary philosophy is that objective truth gradually turns to subjective truth. The criterion for judging truth is no longer whether the proposition is close to "the reality of the world" but links the truth to the individual who is trying to grasp the truth, the subject. For example, Dewey proposed the instrumentalist conception of truth. He believes that truth is only a process of operation, not a solidification of constant knowledge. "Truth is utility" is an operation process that can lead people to success, that is, a confirmation process. Faced with the subjective crisis of philosophy, Habermas put forward the theory of communicative rationality, emphasizing the importance of human communicative behavior. He believes that discourse is more characteristic of interpersonal communication, which is embodied in concrete conversations and arguments. It is in the conversation that we have promoted the growth of rationality. This rationality is not an abstract system, but something dynamic and evolving. He said: "The non-forced forces that demonstrate better arguments in the discourse prevail." The theory of communicative behavior breaks through the traditional rational "subject-object bisection" model and completes the conversion of subjectivity to intersubjectivity in order to re-implement Rationalization provides a new perspective. The achievement of consensus depends on communicative behavior, that is, people need to understand each other through discussion, arguing, negotiation, and compromise so as to form a common point of view. Consensus is always achieved under certain conditions, and may change with time, space, scope, subject and other conditions. In this process, the occurrence of objections is unavoidable and prevalent. It is an important part of communicative behavior. Therefore, we can regard consensus building as a dynamic process rather than a static goal. In this process, the production of objections is no longer disturbing, but rather a necessary form of communication.

Second, the existence of dissent is the embodiment of the interaction and diversity of the online community. Its

significance even surpasses the consensus itself. In Habermas's view, "ideal communicative behavior" is an equal and free dialogue without any mandatory conditions. Obviously, the network provides the best platform for such dialogue. Alex Pentland, director of MIT Human Dynamics Laboratory, put forward the concept of "Idea Flow" based on the full use of Internet (especially mobile Internet and social networking) and big data technology. He thought that through society participation and promotion of ideas to flow, and then give birth to new ideas, is an important driver of social construction. The "flow of thoughts" Pemente said is not the convergence of ideas, but the flow of ideas and the interaction of ideas. The "stream of ideas" is not a huge pond, but a galloping river. The key to the birth of this great river is social learning, and diversity is the soil from which ideas come into being. Pentland even asserted that "it is important to participate, not what is said." He believes that full interaction between members is conducive to strengthening their social relations, and strong social ties are conducive to the flow of ideas, thereby bringing about the positive forces of social collaboration. From this point of view, Wikipedia is undoubtedly the best example of "idea flow". The principle that "Voting cannot replace discussion" adhered to by Wikipedia fully demonstrates the importance attached to interaction and participation. Therefore, the emergence of objections is an important manifestation of the good interactivity of online communities. The more intensely controversial and diversified the community is, the more likely it is to generate a good "Idea Flow". The continuous wisdom and controversy among the members contributed to the emergence of collective wisdom. When individuals in the community accept new ideas, they will also make better decisions than their own decisions. This fully reflects the dialectical relationship between individual rationality and collective rationality of the online community.

V. CONCLUSION

The wiki's crisis is rooted in what Habermas called "the destruction mechanism based on the ability to say no." In any era, the two sides of technological progress will appear. In terms of collaboration alone, the emergence of the Internet has made the cost and difficulty of group activities ever lower. This has enabled us to explore more freely the new ways of doing things together than in any other era. In these new ways, multi- personal collaborative knowledge production has become an important force for the advancement of mankind, and the significance of dissent in constant controversies and compromises has become apparent. In the final analysis, consensus cannot be reached through blockade, avoidance, and hegemony, but it must rely on full participation and exchange.

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