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Society 5.0, Digital Humanities, and Indology

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Abstract: The so-called Society 5.0 features Information Technology (IT), particularly Artificial Intelligence (AI). However, it inevitably involves various academic fields including humanities. Also within each sepcialized field of humanities, IT plays an increasingly important role today. In this paper, I attempt to explore how digital humanities should be studied, with special reference to one of the fields of humanities, Indology.

What is Society 5.0? This might be an unfamiliar term to people residing overseas. It is a concept proposed by the Japanese government of "a future society that Japan should aspire to." According to the webpage of the Cabinet Office (*Naikakuhu*), Society 5.0 is a "human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space." It is a system where big data collected in physical space "is analyzed by artificial intelligence (AI), and the analysis results are fed back to humans in physical space in various forms." Society 5.0 is so called because it "follows the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0), and information society (Society 4.0)." Although this definition is quite clear, the idea of numbering human society similar to a Windows OS is not very agreeable to me.

  I would like to point out two important issues regarding Society 5.0 within our current context. First, Society 5.0 seems to focus only on the economic and physical affluence of society. Upon careful consideration, however, it turns out that this is a one-sided understanding. Within a process where the analysis of big data is "fed back to humans in physical space," ethical, historical, cultural, social, psychological, and religious factors among others should be taken into consideration. That is, social problems cannot be solved only through information technology (IT) and artificial intelligence (AI), but must involve various academic fields. This suggests that Society 5.0 entails the mental maturity of society. Second, the process of analyzing big data necessarily requires a number of empirical and even instinctive judgements by choosing, synthesizing, prioritizing and sometimes discarding relevant knowledge and information, a process that can never be perfect without human analysis. For instance, when AI collects and analyzes data concerning patterns or tendencies of human activities, it can hardly link this data with the above-mentioned diverse factors as well as their multiple combinations. It is only through collaboration between IT and the human brain that we will be able to elucidate why and how such patterns or tendencies exist and to find solutions to improve society. Just to be clear, I am not an anti-digital Luddite. What I want to stress is that we should understand in which processes, for what purposes, and to what degrees we should collaborate with IT or AI. The best "combination ratio" of IT/AI and the human brain depends on fields of study at different levels (human

science, engineering science, medical science, natural science, humanities, etc.; within humanities: history, philosophy, philology, linguistics, sociology, etc.) and purpose of use (research, education, simple reference, etc.).

This observation is true for all the academic fields mentioned above. Broadly speaking, collaboration between humanities and IT is referred to as "digital humanities." For decades, IT has remarkably enhanced the comprehension of specialized fields in the humanities. In my field, Sanskrit philology or Indology, most of the major Sanskrit texts and dictionaries have been digitalized and made accessible to users all over the world. One can download or view on websites the whole attestation of Sanskrit words one is searching for, enabling the user to see how frequently, in which texts, and in what kinds of contexts they are used. This can be done in a flush, without having to spend an entire lifetime crawling in the vast ocean of printed texts. However, neither a computer nor an AI device would be able to analyze this data without the expert knowledge of Indology and its relevant fields and to draw convincing conclusions. It is within this process that *human* scholars can make full use of their expertise and rich experiences. This process is also where scholars can show their unique viewpoints and original ways of thinking, which heretofore have brought about the creativity needed to promote developments of each field. For instance, one only has to wait a few seconds for a computer to fetch all the examples of the Sanskrit word, *satyá-*'true; truth.' However, it would not be possible without *your* brain to elicit the delicate connotation of this word from the analysis of the data. Namely, careful examination of the word by previous Indologists has made clear that this word not only means truth in general, i.e. "the fact as it was or is in past and present," but also the idea of truth in the future, i.e. "what will or should be true." The latter meaning can be paraphrased as "what one should realize in the future" and is therefore related to the concept of vow. We can imagine how important this result is to understand the ancient Indian worldview and its Indo-European background, because *satyá-*, just as the cognate Greek philosophical term *ousía* 'essence, substance,' is a derivational form of the present participle of *as* 'exist, be', which is attested in all Indo-European languages, classic and modern, e.g. Sanskrit *ásti* (3rd person singular form), Gr. *estí*, Lat. *est*, Fr. *ést*, Germ. *ist*, Engl. *is*. While this was an example from Indology, the same or similar situation is valid for other specialized fields.

The combination ratio of IT and the human brain also varies depending on its purpose. For example, we Indologists have a text data service that provides the desired text with a detailed gloss for each word appearing in it. This is beneficial for laypersons or scholars of other fields with no or poor knowledge of Sanskrit but who desire to grasp the rough meaning of the text. On the other hand, such a service is not recommended for beginners of Indology, who are encouraged to read the text on their own. This is also the case with digital dictionaries. They are indeed very useful for non-experts and will even save Indologists an enormous amount of time that can be allocated to more professional research. However, they do not help beginners so much, because such ready-made information on a specific word deprives them of the opportunity to encounter unknown or related words in a dictionary or put bookmarks in it for several words appearing in the same sentence

to quickly turn over pages as they see fit. This is why I usually say to my students, "Don't take the easy way out! Use your hands and look it up in a dictionary, write down the text with a pencil!," although this may sound a little old-fashioned.

I could mention innumerable similar cases where the combination ratio of IT and the human brain varies depending on the fields of study or purposes of use. What is important again is that we should have an eye to judge which ratio is needed for each case we are faced with. I would say that this is the most important knowledge and skill for the digital humanities. I am one of those who do not believe that AI will perfectly replace the human brain in the near future. I hope that the time *won't* come when we have to write down with our signature at the end of our paper stating, "I'm not a robot."

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In the international seminar held at Osaka University in October 2022, we had two talks by specialists of digital humanities and six presentations by eight young scholars. As is seen in the program, not all of these presentations relate to digital humanities or Society 5.0. In fact, there are not so many students specialized in this area in the Graduate School of Humanities or School of Letters. This is why the seminar also provided young scholars with opportunities to read papers on their own research. We expect all the speakers to take this opportunity to discuss and consider the best utilizing method of IT and the possibilities of digital humanities for each of their specialized fields.

It is a pity that the two guest speakers could not contribute a paper of their talks to this proceedings. But, I hope that the summaries of their talks included in Preface will suffice to get an outline of their talks.