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對話世界頂尖學者

On the Way to "Artificial Sociality" and the Taiwan-Russia Joint Research Project

Discussants: Dr. habil. Andrey V. Rezaev and Dr. Yu-Cheng Liu

Editor: Dr. Yu-Cheng Liu

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Abstract

In everyday life, people can no longer separate from or ignore the presence and influence of artificial intelligence technologies. These "intelligent" technologies have permeated areas such as food, clothing, housing, transportation, education, and recreation, assisting and influencing people's behavior and actions. Sociology asks the question of "how is (social) order possible?" and the development of the information society has made this question increasingly complex. Professor Andrey Rezaev is adept at comparative research, exploring topics from social inequality and social stratification to recent developments in artificial intelligence technologies. He proposed the term "artificial sociality" in an attempt to capture a new social scenario of human-machine (artificial intelligence) interaction. By a

stroke of serendipity, since 2020, under the support of the National Science and Technology Council's project, the Taiwanese team had the opportunity to embark on a three-year bilateral cooperation program with Professor Rezaev and his team, taking the application of artificial intelligence in the medical and health industries as an example for cross-national and cross-cultural comparison. In this interview, Professor Rezaev shared his thoughts and suggestions on this project, as well as how humanities and social sciences should face the applications of artificial intelligence technologies.

Introduction to Dr. Andrey V. Rezaev

Professor Andrey Rezaev is a distinguished professor of the Department of Sociology at the University of St. Petersburg, Russia, and has since retired to conduct visiting teaching and research at universities in the United States and Japan. Dr. Rezaev previously directed the TANDEM research laboratory, a joint effort between the U.S. and Russia, and continues to serve as a visiting professor at the College of Sociology at Rikkyo University in Japan. He is also currently an adjunct professor at Webster University in Tashkent, Uzbekistan. Dr. Rezaev's expertise lies in comparative social science research, immigration studies, comparative studies of higher education and human development, social interaction, sociology of everyday life, sociological theory and methodology, as well as research on artificial intelligence and artificial sociality. Dr. Rezaev has a prolific portfolio, which includes journal articles, books, and book chapters.

AVR: Andrey V. Rezaev

YCL: Yu-Cheng Liu

YCL：In the field of humanities and social sciences, how does the Russian academic circle think about AI in perspectives from institutions, society, and teaching (education)?

AVR：The progress of AI still needs to be put in the mainstream for the social sciences and humanities in Russia. Research on AI in social sciences and humanities is concentrated in several small groups, predominantly in Moscow and St. Petersburg. There are few educational programs and courses that combine perspectives on AI from different disciplines (including philosophy, law, sociology, etc.). However, in AI studies, computer scientists and mathematicians are still playing the first violin. Among those social scientists and humanities scholars who are interested in AI technologies in Russia, there are basically balanced attitudes towards them. Scholars pay attention to new possibilities that these technologies bring us and to barriers to and unintended consequences of their implementation.

YCL：Is there anything special about the development of AI in Russia in the field of humanities and social sciences?

AVR：In Russia, as in the world in general, research on AI is dominated by what we have called the "big three" actors: computer science, cognitive science／neuroscience, and philosophy. In social sciences and humanities, there is a selective reception of ideas, approaches, and methods developed in Western Europe and North America by Russian scholars. Certain areas of STS and actor-network theory are prevalent, as well as micro-sociological and ethnomethodological approaches. Several publications also discuss the problems of inequality connected with the development of AI technologies. Thus, we see international development trends in Russia, adjusted for some delays and local specifics.

YCL：What are the challenges for Russia to explore AI from the perspective of humanities and social sciences?

AVR：There are at least three challenges. First is a sluggish and rigid university curriculum that prevents the exchange of knowledge and skill among STEM, social sciences,

and humanities. Today, this kind of exchange exists in a few interdisciplinary research projects based mostly on researchers' goodwill and is slowed down by misunderstandings between scholars from different departments. This misunderstanding, however, is caused by scholars' education: by a lack of courses that provide different perspectives on AI and technological progress, as well as on the substance of human relations. We believe that both STEM students and students from social sciences and humanities departments need more courses on AI created by computer scientists, neuroscientists, psychologists, philosophers, sociologists, and so on. Graduate students enrolled in different disciplines need to have an opportunity to participate in joint research projects on AI research.

Second is a need for a more theoretical and methodological foundation for studying AI in social sciences and humanities. Some brilliant theories and methods were developed in different areas—ethnomethodology and conversational analysis, existentialism and phenomenology, communication theory, and psychoanalysis. However, these developments are used in actual empirical research in a minimal way. Another problem here is disciplinary "closures". To understand AI means understanding its similarities to and differences from a human being. Both AI and a human could not be understood from the perspectives of one discipline. That is why we need to combine theoretical and methodological developments from different disciplines. We need to rethink them to eliminate limitations posed by disciplinary conventions. This is a global problem, not only a problem of Russian science.

And the third is the need for empirical sets where scholars can research how AI technologies are actually developed, implemented, and used. This problem could be solved by building bridges between academia and business. Today in Russia, many large and small companies develop and implement different kinds of AI／machine learning technologies. Social scientists can add their visions in exploring problems that emerge during the development and implementation of AI technologies while getting some empirical material for their own research. There are some collaborations

between academia and business here, but there are quite a few.

YCL：In general, how should we think about AI from the perspective of humanities and social sciences?

AVR：We believe that the study of AI is, in principle, an "anti-disciplinary" project that should merge perspectives and methodological tools from different disciplines to solve specific research problems. It is not an exclusive domain of natural sciences, engineering, or social sciences and humanities. As a field of study, AI belongs to science but not disciplines that appeared in the course of the history of science.

We believe that social scientists and humanists have to work closely together in order to receive productive and significant results in understanding the place and the future of AI in society.

There are five essential characteristics of AI that shape the landscape of research problems that we are facing today.

First, AI is an artifice, a product of human beings, it is not something transcendental or inherently a-social. It is designed, implemented and elaborated by human beings (maybe, with the help of AIs). Also, today AI is typically created by large and complex networks of people with different professional roles, backgrounds, goals, and values.

Second, AI's essence manifests itself as a set of rational and logically formalized rules but not as an attained appliance per se. We used to think of AI as some "object"; however, in essence, its activities are determined by formalized rules.

Third, AI is a set of instrumentally coded rules. It has some instrumental goal that can be quantified (so called "utility function"). The task of translating human goals into utility functions is one of the most difficult in AI research.

Fourth, an instrumentally coded set of rules is oriented toward generating an appliance that imitates human beings' intellectual activities. That is, artificial intelligence imitates some characteristics of human intelligence (or intelligent behavior).

Fifth, emulated intellectual constructions make it possible for AI to further independently code and make intellectual or goal-oriented decisions, not necessarily with assistance or control from human beings. This means that AI can act autonomously.

From the perspectives of social sciences and humanities, it is crucial that AI be examined in relation to a new phenomenon we call "artificial sociality"—the reality of new forms of interaction between humans and machines／algorithms. It leads us to the problem of Human-Centered AI (HCAI). The fundamental idea for HCAI is to place the well-being of humans and humanity at the center of AI technologies development, to adjust technology to people, not people to technology.

We are entering the era of "interdependence" between human beings and machines, not just interactions as it was back in the early 21 century. The reality of interdependence brings new problems to reflect upon. Social scientists and humanists need to concentrate their efforts not on looking for the similarities between humans and machines. Quite the opposite is true—they must look at the differences between humans and machines. Humans and AI are fundamentally different, as was shown by philosophers (such as Hubert Dreyfus) and social scientists who belong to different theoretical traditions (such as Alan Wolfe, Elena Esposito, and Harry Collins). The real need today is to define the differences between humans and AIs and how to enrich humanity via machines and AI. And such a need is even more real when we analyze the problems of human-centered AI. It will remain essential to resolve the enigmas of human behavior in social settings and artificial sociality.

There are several critical issues in studying AI from the perspective of human society. One is the problem of capitalism. Today, many scholars claim the end of capitalism. Will AI developments help to "save" or to transform capitalism? If so, who will be the winners and the losers? The related problem is job replacement: AI can now do many things better than humans can. Thus, different scenarios are plausible, from a utopia of prosperity and leisure to a dystopia of unemployment

and loss of meaning. There is also a problem with moral taboos. We can apply AI technologies in many spheres of our social and personal lives. Should there be "AI-free" areas or situations where we agree to ban AI use? Finally, there is a problem of communication and miscommunication. AI is different from human beings, and its usage and "understanding" of language are also different. How can we make human speech and reasoning understandable for AI, and vice versa?

YCL：Currently working with academic partners in Taiwan, why do you want to cooperate with Taiwan's academic community to discuss issues in the field of AI and medical care?

AVR：First of all, I would like to use this interview as an opportunity to publicly thank our Taiwanese colleagues from Soochow University for developing and working with us on this topic. It was a very tough competition, by the way, for both teams on the way to receive support from the MOST and Russian Science Foundation.

I believe what helped us to win was the fact that we organized our teams and Project in such a way that combined our comparative and competitive advantages. We see the great potential in the Ethnomethodological foundation to study AI. And this is the approach our Taiwanese colleagues have so wonderfully and productively developed. I had a chance to participate last year at the Taiwanese Sociological Association Annual Meeting. I was impressed by the high level of qualitative studies that sociologists from Taiwan demonstrated. And this fact also stimulates our great interest in working together with our Taiwanese colleagues.

Taiwan is also a fascinating and unique "field" to study the progress of AI technology in the everyday life of society, specifically in comparison to Russia. I think what we wanted to stress in our Project was the comparative component. We would like to see the specifics of implementing AI technologies in the healthcare care systems of both countries from a strictly comparative perspective.

YCL：What are the key points of the current cooperation plan for you?

AVR：We launched and developed our joint Project in a challenging time of pandemic and

socio-economic and political disruption. Of course, all these have impacted the logic of our Project. We based a lot on Internet communication. We organized scholarly online conferences in Moscow, in Brazil (in the framework of the ISA Forum), where our Taiwanese colleagues had the opportunity to present their research's preliminary results. We developed publication projects. Just recently, we had an opportunity to organize two joint-session in Japan. One we organized in the framework of ISA RC-20 Comparative Sociology and RC-33 Social Science Methodology Conference online at the Women's University in Tokyo. The other face-to-face International Symposium for Interdisciplinary Science, "Movements in the Digital Society," was organized in the framework of Japan Science and Technology Agency, Strategic Basic Research Program in Nara, Japan, in October 2022.

I think that in the years to come, we need to organize more face-to-face meetings, conferences, and field research where we can work together in real (not artificial or augmented) life.

YCL：Is there anything special about the cooperation with Taiwan compared with your past projects?

AVR：The USA-Russia Research Laboratory TANDEM at St Petersburg State University, where, together with Peter Kivisto from Augustana College, USA, I have the pleasure of being a founding Director, was established back in 2014. Since then, our team has organized multiple international co-projects oriented toward studying AI, human-machine interactions, transnational migration, and current developments in higher education. We worked with our colleagues from Brazil, Japan, Slovenia, Sweden, and the USA. We are delighted to work with our partner team from Taiwan. As I mentioned, we always try to do our research in the light of comparative approaches. Working with Taiwanese colleagues gives us new data and new directions to see the socio-cultural and economic reality, new ways of thinking how to make interdisciplinary and comparative research happen, and how to formulate new research questions. I believe the potentiality of the Taiwanese team in doing

sociological research in tremendously high, and I am absolutely positive if we'll have opportunity to continue joint research, it will make a difference in the development of science in our countries, and we'll give a solid impact on the development of international collaboration.

YCL：Do you have any future plans or cooperation ideas?

AVR：Yes, of course. It will be both our great honor and pleasure to continue to work together and develop new research and education projects with our colleagues from Taiwan. I believe we need to continue what has been started as a study of AI progress in medicine and the healthcare system in our countries. We can go further and look in comparative perspectives what are the problems, prospects, and specificities of the development of AI in medico-biological sciences and healthcare practices in Southeast Asia and in BRICS countries. I also believe that we have all the potential to launch a fundamental research co-project that will be oriented toward studying the reality of Artificial Sociality development and the taboo areas of AI in the everyday life of a society.

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邁向「人造社會性」與台俄雙邊合作計畫
On the Way to "Artificial Sociality" and the Taiwan-Russia Joint Research Project

Discussants: Dr. Andrey V. Rezaev、劉育成 博士

Editor: 劉育成 博士

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摘要

在日常生活中，人們已經無法脫離及忽視人工智慧科技的存在與影響。這些具有「智能（intelligence）」 的科技物也進入到食衣住行育樂等領域，協助並影響人們的行為與行動。社會學探問的是「（社會）秩序如何可能？」的問題，而資訊社會的發展則讓這個問題越加複雜。Andrey Rezaev 教授擅長於比較研究，從對社會不平等、社會階層到近年來的人工智慧科技等議題之探究，提出了「人造社會性」一詞，嘗試捕捉一個人機（人工智慧）互動的新社會性場景。在因緣際會之下，自 2020 年起，在國科會的計畫支持之下，台灣團隊有機會與 Rezaev 教授共同開啟一個三年期的跨國交流計畫，以人工智慧在醫療與健康產業的應用為例，進行跨國與跨文化的比較。

在本訪談中，Rezaev 教授即對該計畫，以及人文社會科學如何面對人工智慧科技應用等相關議題給予想法與建議。

Andrey Rezaev 博士介紹

Andrey Rezaev 教授為俄國聖彼得堡大學社會系講座教授，目前已退休至美國及日本大學進行訪問教學與研究。Rezaev 博士過去曾主持美俄共組之 TANDEM 研究實驗室，也持續擔任日本立教大學社會學學院的訪學教授，目前也在烏茲別克 Tashkent 的 Webster 大學兼任教授。Rezaev 博士的專長為比較社會科學研究、移民研究、高等教育與人類發展比較研究、社會互動、日常生活社會學、社會學裡論與方法學，以及人工智慧與人造社會性等研究。Rezaev博士著作相當豐富，包括期刊論文、專書及專書篇章等。

AVR: Andrey V. Rezaev

YCL: Yu-Cheng Liu

YCL：在人文社會科學領域中，俄羅斯學術圈對於 AI 在機構、社會和教學（教育）方面的看法是什麼？

AVR：AI 的進步在俄羅斯的社會科學和人文科學領域中仍然需要被納入主流。AI 在社會科學和人文科學領域的研究集中在幾個小團體中，主要位於莫斯科和聖彼得堡。目前尚缺乏結合不同學科（包括哲學、法律、社會學等）對 AI 觀點的教育項目和課程。然而，在 AI 研究中，計算機科學家和數學家仍然處於領導地位。在俄羅斯對 AI 技術感興趣的社會科學和人文學者中，對於 AI 技術存在著基本平衡的態度。學者們關注這些技術帶來的新可能性以及實施它們所面臨的障礙和意外後果。

YCL：在俄羅斯的人文社會科學領域中，AI 的發展是否有什麼特別之處？

AVR：在俄羅斯，就像全球一樣，AI 的研究主要由我們所謂的「三大主角」所主導：計算機科學、認知科學／神經科學和哲學。在社會科學和人文學科中，俄羅斯學者會有選擇性地接受西歐和北美發展出的思想、方法和途徑。科技與社會（STS）和行動者網絡理論等領域普遍存在，同時也有微觀社會學和俗民方法學的研究方法。此外，一些出版物還討論了與 AI 技術發展相關的不平等問題。因此，我們可以看到俄羅斯與國際上的 AI 發展趨勢保持一致，但有些許滯後和當地的特殊性。

YCL：從人文和社會科學的角度探索 AI，俄羅斯面臨哪些挑戰？

AVR：我認為至少有三個挑戰。首先是大學課程緩慢而僵化，阻礙了 STEM、社會科學和人文學科之間的知識和技能交流。今天，這種交流存在於一些跨學科的研究項目中，主要基於研究人員的善意，並受到來自不同部門學者之間誤解的影響。這種誤解，是由學者們的教育造成的：缺乏能夠提供不同 AI 和技術進步視角，以及人類關係實質性的課程。我們認為，STEM 學生和來自社會科學和人文學科的學生都需要更多來自計算機科學家、神經科學家、心理學家、哲學家、社會學家等的 AI 課程。不同學科的研究生需要有機會參與 AI 研究的聯合項目。

其次，我們需要更多關於 AI 在社會科學和人文學科中的理論和方法基礎。在不同領域中發展了一些優秀的理論和方法，如俗民方法學和對話分析、

存在主義和現象學、傳播理論和精神分析等。然而，這些發展在實際的實證研究中被最小限度地使用。另一個問題是學科的「封閉性」。若要理解 AI，就必須理解它與人類的相似之處和差異之處。AI 和人類都不能僅從一個學科的角度來理解。這就是為什麼我們需要結合不同學科的理論和方法發展。我們需要重新思考這些理論和方法，以消除學科慣例所帶來的限制。這是一個全球性的問題，不僅是俄羅斯科學的問題。

第三，我們需要有實證研究，以探究 AI 技術的實際開發、實施和使用情況。這個問題可以通過建立學術界和企業之間的橋樑來解決。如今在俄羅斯，許多大型和小型公司正在開發和實施不同種類的 AI／機器學習技術。社會科學家可以通過研究在開發和實施 AI 技術過程中出現的問題，為自己的研究添加實證材料。在學術界和商業界之間已經有一些合作，但實際上仍然很少。

YCL：從人文和社會科學的角度來看，我們應該如何思考人工智慧？

AVR：我們認為，從原則上講，AI 的研究是一個「非典型單一學科式」（anti-disciplinary）的項目，應該融合來自不同學科的觀點和方法論工具，以解決具體的研究問題。它不是自然科學、工程或社會科學和人文學科的專屬領域。作為一個研究領域，AI 屬於科學，但不屬於在科學發展過程中出現的學科。

我們相信社會科學家和人文學者需要密切合作，才能在理解 AI 於社會中的位置和未來方面取得有生產力和重要的結果。AI 具有五個基本特徵，塑造了我們今天所面臨的研究問題的環境。

首先，AI 是一個人造物，是人類的產物，不是超然或固有的非社會性物品。它是由人類設計、實施和精緻化的（也許有 AI 的幫助）。此外，現在 AI 通常是由擁有不同職業角色、背景、目標和價值觀的大型和複雜的人員網絡創建的。

第二，AI 的本質表現為一組理性和邏輯形式化的規則，而不是一個已實現的產品本身。我們曾經把 AI 看作某種「物體」，但實際上，它的活動是由形式化的規則決定的。

第三，AI 是一組儀器性編碼的規則。它有一個可以量化的工具性目標（所謂的「效用函數」）。將人類目標轉化為效用函數的任務是 AI 研究中最

困難的之一。

第四，一組工具性編碼的規則旨在生成一個模仿人類智能活動的產品。也就是說，人工智能模仿人類智能（或智能行為）的某些特徵。

第五，模擬的智能建構讓 AI 能夠進一步獨立編程和做出智能或目標導向的決策，不一定需要人類的協助或控制。這意味著 AI 可以自主行動。

從社會科學和人文學科的角度來看，重要的是要研究 AI 與我們所謂的「人造社會性」之間的關係，這是人與機器／演算法之間新形式互動的現實。這引導我們關注人性為中心的 AI（HCAI）問題。HCAI 的基本理念是將人類和人類的福祉置於 AI 技術發展的中心，調整技術以適應人類，而不是讓人類去適應技術。

我們正在進入人類和機器之間的「相互依存」時代，不僅僅是像 21 世紀初期那樣的互動。相互依存的現實帶來了新的問題需要反思。社會科學家和人文學者需要將精力集中在尋找人類和機器之間的相似之處，相反地，他們必須關注人類和機器之間的不同之處。哲學家（如 Hubert Dreyfus）和社會科學家（如 Alan Wolfe、Elena Esposito 和 Harry Collins）的研究已經表明，人類和 AI 在根本上是不同的。今天真正的需求是定義人類和 AI 之間的差異以及如何通過機器和 AI 來豐富人類。當我們分析以人為中心的 AI 的問題時，這樣的需求甚至更為迫切。解決社交場景和人工社交中人類行為的謎題仍然至關重要。

從人類社會的角度研究 AI 存在著幾個關鍵問題。其中之一是資本主義的問題。今天，許多學者聲稱資本主義已經結束。AI 的發展能否幫助「拯救」或轉變資本主義？如果是這樣，誰將是贏家和輸家？相關的問題是工作取代：現在，AI 可以比人類更好地做許多事情。因此，不同的情境都是有可能的，從繁榮和休閒的烏托邦到失業和失去意義的反烏托邦。還有一個道德禁忌的問題。我們可以在社交和個人生活的許多領域應用 AI 技術。是否應該有「無 AI」的區域或情況，在那裡我們同意禁止使用 AI？最後，存在著溝通和誤解的問題。AI 與人類不同，它對語言的使用和「理解」也不同。我們如何使人類的言語和推理對 AI 可以理解，反之亦然？

YCL：就目前正在與台灣的學術夥伴進行之合作而言，您為什麼想與台灣的學術界合

作，討論人工智慧和醫療議題呢？

AVR：首先，我想利用這次採訪的機會，公開感謝我們台灣東吳大學的同事們，他們與我們一起開發和研究這個主題。順便提一下，對於兩個團隊來說，獲得台灣國科會（MOST）和俄羅斯科學基金會的支持都是非常激烈的競爭。我相信我們之所以獲勝，是因為我們以結合比較優勢和競爭優勢的方式，組織了我們的團隊和項目。我們看到了以俗民方法學為基礎研究 AI 的巨大潛力。這也是我們台灣同事非常出色和富有成效地發展的方法。去年我有機會參加台灣社會學會年會。我對台灣社會學家展示的高水準的質性研究印象深刻。這也刺激了我們與台灣同事合作的巨大興趣。

台灣也是一個迷人而獨特的「場域」，可以研究 AI 技術在社會日常生活中的進展，特別是與俄羅斯相比。我認為我們在項目中想強調的是比較的部分。我們希望從嚴格的比較角度來看兩國醫療保健系統中實施 AI 技術的具體情況。

YCL：目前合作計劃的重點是什麼？

AVR：我們在疫情、社會經濟和政治動盪的艱難時期啟動和發展了我們的聯合項目。當然，所有這些都影響了我們項目的邏輯。我們在網際網路互動溝通方面做了很多工作。我們在莫斯科和巴西（在 ISA 論壇的框架內）組織了線上的學術會議，讓我們的台灣同事有機會展示他們的研究初步結果。我們開展了出版項目。最近，我們有機會在日本組織了兩個聯合會議。其中一個是我們在東京女子大學舉辦的線上 ISA RC-20 比較社會學和 RC-33 社會科學方法論會議聯合會議。另一個是在 2022 年 10 月在日本奈良舉辦的國際跨學科科學研究計畫「數位社會中的發展」國際研討會。

我認為在未來的幾年中，我們需要舉辦更多面對面的會議、研討會和實地研究，這樣我們才能在真實（而非人工或擴增）的生活中共同工作。

YCL：和您之前的專案相比，與台灣的合作有什麼特別之處嗎？

AVR：我和美國奧古斯塔納學院的 Peter Kivisto 一起擔任創始主任，成立於 2014 年的聖彼得堡州立大學的美俄研究實驗室（TANDEM）。自那時以來，我們的團隊組織了多個國際合作項目，旨在研究人工智慧、人機互動、跨國移民和高等教

育的現狀。我們與來自巴西、日本、斯洛文尼亞、瑞典和美國的同事合作過。我們很高興能與來自台灣的合作夥伴團隊合作。正如我所提到的，我們總是嘗試以比較的方式進行研究。與台灣的同事合作，給我們帶來了新的數據和新的方向來看待社會文化和經濟現實，新的思考方式如何實現跨學科和比較研究，以及如何制定新的研究問題。我相信台灣團隊在進行社會學研究方面的潛力非常高，如果我們有機會繼續進行聯合研究，這將對我們國家的科學發展產生重要影響，並對國際合作的發展產生實質性的影響。

YCL：您有未來的計畫或合作想法嗎？

AVR：當然有。我們非常榮幸且樂於繼續與我們來自台灣的同事們合作，開展新的研究和教育項目。我相信，我們應該繼續從比較的角度研究人工智能在醫學和醫療系統方面的進展。我們可以進一步比較東南亞和金磚國家的醫學生物科學和醫療實踐中人工智能發展的問題、前景和特殊性。我也相信，我們完全有能力啟動一個研究人工智能社會性發展現實和社會生活中的 AI 禁忌領域的基礎研究合作項目。