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The Promises and Perils of AI for Sociology

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Abstract

This article argues that in an age of artificial intelligence (AI), sociologists have not adequately thought about the challenges posed to their work and pedagogy. Drawing on examples from Hong Kong, we foreground the challenges that AI poses to sociological education, student success, and working conditions, amid the marketization of higher education and broad shifts in funding toward STEM disciplines. We then suggest four tactical strategies for sociology to respond and live with AI: (1) incorporating computational training into sociological education; (2) incorporating AI into instrument design for sociological research; (3) incorporating AI into models of inference; and (4) incorporating AI into classroom and campus design. We contend that, in doing so, we may rethink the repertoires of professional sociology with new frontiers for AI applications and modalities of student education.

Keywords: artificial intelligence (AI), universities, politics of method, sociological education, sociological research

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Introduction

Fifteen years after Savage and Burrows' (2007) prognostication of the perils that Big Data portended for empirical sociology, we are now witnessing new challenges from artificial intelligence (AI) interfaces. From ChatGPT to DeepSeek to Grok, the promise of a golden grail for productivity has ignited a new race to develop AI tools. Universities have been subsumed into this AI race, observed as much in the creation of technology transfer offices to incubate start-up companies powered by faculty and student research, as well as licensing and royalty agreements from a growing number of university-industry partnerships (Hoffman, 2021).

The incursion of AI today brings concerns about the existential challenges it poses to higher education, at a time when universities suffer funding cuts and degrees are being marketized. In the context of Hong Kong, the Hong Kong government (2025) announced a $1 billion investment in a new institution for AI research, while cutting over $10 billion in university funding and student grants and reducing student intake quotas for non-STEM programs. As funding and organizational capacity collect around AI and STEM subjects, sociology risks becoming marginalized in new degree offerings, student outcomes, and instructors' time and resources required to develop more reflective forms of learning. The marketization of higher education has also transformed degrees into commodities and intensified competition internationally, leading students to rely on AI as a short-cut to complete their assignments and maximize degree completion speed. AI risks being used as a substitute for original, critical thinking, and even in computer science, as a substitute for coding and debugging fundamentals to be learned in basic courses. The challenges of overrelying on AI for coursework is compounded in sociology, given that courses have fewer practical components and lack a

pathway to the labor market compared to STEM education, a core part of which is internships in firms that recruit students during their studies for skills development.

How should sociology respond? Extending Savage and Burrows' (2007) intimation of an empirical crisis from Big Data, we open dialogue on how to live with AI and mitigate its threats. We suggest four tactical strategies to incorporate AI into sociological education, research, and classroom settings and contend that doing so may rethink the repertoires of professional sociology with new modalities of student education and frontiers for AI applications.

(1) Incorporating computational training into sociological education. We propose deepening the methodological training in sociology by building closer connections between sociology and computational disciplines, such as jointly taught courses and programs. These programs could balance courses focused on programming skills, sociological curricula, and combining the two foci to develop courses focused on the ethics, outcomes, and regulations pertaining to AI, a glaring dearth in current advances in AI.

By learning coding, students will better understand the infrastructure of AI, allowing instructors to develop more creative assignments with a broader purview of use cases. In particular, we believe AI in sociological education will pave way for a new horizon of social analytics, drawing on computational methods to process social outcomes. More specifically, we anticipate significant space for public stakeholders, including government bureaus and policymakers, to not only adopt AI as methodology, but as a subject of inquiry in assessing its impact on social outcomes such as wellbeing, inequality, misinformation, and job market access.

Sociology remains one of the few disciplines most theoretically and empirically focused on studying social inequality, one of the grand challenges facing advanced economies worldwide. Social class, race/ethnicity, gender, education, age, residential location, household

registration or citizenship, and type of workplace have each been replete with sociological studies of their influence on inequality. This creates unique demand for sociological analysts who are not only well-versed in AI skills, but theoretical and empirical underpinnings of inequality as it manifests in grassroots populations, the structural determinants of unequal resource distribution, and the behavioral choices that sustain them.

New sources of demand from the public sector for AI skills would create new modalities of education in sociology, namely, internships. Internships have the practical benefits of allowing students to hone their analytical skills in modern workplaces with real-time, evolving conditions while honing their information acquisition and communication skills. Internships have the added benefit of enabling students to develop specialized expertise and reduce their egocentric uncertainty enough to secure a job after graduation. Students with more practical experience would better recognize the limits of AI and avoid overrelying on it. Many modern work settings that use AI, for instance, do not even offer the contexts that programmers need to know to use ChatGPT, which would force students to adapt and develop their own solutions to real-world problems.

We identify two examples in the context of Hong Kong. In the private sector, students would be equipped to secure internships in the Greater Bay Area. The Greater Bay Area was established in 2017 as an integrated economic area extending across nine large cities in mainland China, as well as Hong Kong and Macau. The Area has been modelled after the nation's Special Economic Zones on a larger scale, offering preferential tax policies for tech companies and subsidies for start-ups and research. In addition, the Area has extended the recognition of credentials to a wide array of professions, loosened multiple entry visas for non-Chinese Hong Kong residents, and established a series of Youth Entrepreneurship programs. These policies

incentivizing technology investment have contributed to a wellspring of thousands of jobs in tech firms, including internships.

In the public sector, we contend there are existing roles that would benefit from newly trained AI sociology interns, such as an executive officer class within the government responsible for providing administrative services across nearly all bureaus and departments. This role would benefit from a new class of internships that integrate social analytics with inequality in policy evaluations. AI sociology student interns would be well-poised to not only apply their research expertise in developing samples and processing datasets, but also their theoretical backgrounds in assessing how policy revisions might be experienced differently across different socioeconomic groups and thus predicting policy successes and failures.

(2) Incorporating AI into instrument design for sociological research. We contend that AI can address important limitations in surveys and interview analysis. For one, it overcomes a core challenge for both methods: removing biases. Researchers have typically striven to address their own preconceived notions about their participants by tabling their positionalities and involving multiple coders for the data. AI offers a way of doing both. Based on large language models informed by billions of user data points, AI offers a powerful tool for methodological triangulation and for reflexivity. Similar to how AI has been used as a therapy tool, AI can track decisions made during data collection and analysis, conduct behavioral analysis (including sentiment analysis) of researchers' decisions themselves, and simulate conversation with researchers to reflect on possible latent biases in real-time. This would similarly be useful for incorporating into methodology courses to help students reflexively evaluate their own biases.

If AI is integrated into existing survey respondent pools, it can devise personalized questions that are more responsive to respondents' individual needs, desires, and feelings.

Survey and interview questionnaire platforms integrated with AI can also process respondent questions in real-time. Rather than just using a pre-existing template of questions, sociologists can now experiment with developing personalized questions in real-time tailored to each respondent's response to previous questions. Trained on a mass of statistical, case study, and qualitative research datasets, AI is additionally familiar with common patterns in instrument design and its language. Sociologists can thus use AI to benchmark their research findings, question and instrument design, and measure them against the consensus to detect discrepancies.

(3) Incorporating AI into models of inference. We also note the revolutionary data source that AI offers access to. The sample survey is the core methodological resource of sociology, in light of its ability to tap into behaviors on scale. Surveys lend for inferential statistics with which we can develop an understanding of human behaviors in aggregate. Savage and Burrows (2007) sagely described the advances of payment algorithms designed by Big Tech firms like Amazon that superseded this basis of inference. Amazon, for instance, has data on past user purchases, useful for inferring what they are likely to purchase in the future.

AI, however, has the unique ability to supersede even this basis of inference by soliciting the voluntary and direct input of what users think and feel on personal matters, as more and more users turn to ChatGPT and DeepSeek for personal advice on job applications, counselling, and beyond. This offers an even more granular and intimate level of inference than survey and algorithm data. Just as Google search histories have become material for subpoenas and court rulings, AI input offers an even more granular and intimate level of data than payment algorithms and transaction data. While many of these algorithms were inaccessible to researchers and thus posed a "crisis for empirical sociology" (Savage & Burrows, 2007), new AI models like

DeepSeek have purported moved to open-source code. Open-source code enables researchers to view, modify, and distribute the code to replicate AI models for context-specific purposes.

As social network scientists, we believe that AI is capable of analyzing social networks on a larger scale than previously before. We imagine, for instance, improvements in agent-based and graph modeling to simulate interactions between individuals and groups, which lend for predictive modeling of complex contagion (behaviors, such as public opinion attitude formation) and simple contagion (information, such as job openings). This would revolutionize the network study of contagion, where most studies have been retrospective, rather than predictive.

(4) Incorporating AI into classroom and campus design. We believe AI could be applied in a similar manner to improve teaching and student dynamics in the university. Predictive diffusion models could detect the transmission of information among students within and beyond the classroom. By processing large-scale behavioral data, AI could sustain more complex simulations of how individuals and groups change their behaviors in response to new stimuli. For instance, we could improve group-based learning and collaborative projects for students by detecting their communication patterns, similarities in student knowledge and where they learn it, and benchmarking their performance. On a meta-level beyond the classroom, this behavioral data could additionally help detect student clusters, lone students excluded from networks, and trace the likelihood and transmission of other student behaviors, such as depressive symptoms. In Hong Kong, where depressive and anxiety symptoms are prevalent among over 50% of students (Lun et al., 2018), this would be a welcome initiative in improving students' university experience and preventing outbreaks of mental health crises.

In closing, we recognize the challenges that AI can pose if used liberally by students as a replacement for original work, amid higher education funding cuts and the marketization of

degrees. However, we contend that by incorporating AI into sociological education, we can develop more creative assignments that illustrate new use cases of AI, build internship models that improve practical learning and reduce reliance on AI, and improve students' classroom experience. By taking an interest in AI applications, social analytics, and new models of inference, we can also rethink the repertoires of sociology for research and carve out advancements in AI applications and educational models.

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