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Artificial Intelligence and Sociology: Challenges of Professional Transformation

Health Sociology as an Epistemic Observatory: Artificial Intelligence and the Transformation of the Regimes of Knowledge

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Introduction

The current sociological debate on Artificial Intelligence (AI) has the tendency to develop along two main threads. The first considers AI as an object of analysis, intended as a set of technologies that transform work, communications, economic organization, governance, cultural production and contemporary forms of inequality. The second considers AI as a tool for research, addressing its possible relevance in data analysis, scientific writing, hypothesis formulation, education and the public communication of sociology.

However, a third dimension remains less explored, although it may be equally significant: Artificial Intelligence as both a transformative indicator and instrument in the regimes of knowledge production. More specifically, we consider the importance of examining how AI intervenes in those conditions that make the understanding of the social world possible. The emergence of computational infrastructures that select data, produce classifications, detect correlations and orient selection criteria raises, as a matter of fact, a distinct sociological question: *What happens when the tools used to understand the world actively contribute to the definition of what can be known?*

This contribution argues that Artificial Intelligence does not only represent a new research tool, nor simply a new object for sociological analysis. Rather, it signals a broader transformation, characterized by the emergence of regimes of knowledge production in which computational infrastructures participate in the processes that make social reality observable, classifiable, interpretable and recognizable as legitimate knowledge. Health sociology provides a particularly valuable vantage point for analysing this transformation because it has long examined how knowledge, classification and professional authority shape what becomes observable, legitimate and actionable within social life. This longstanding engagement with the conditions through which knowledge is produced and authorized makes it especially well-suited to investigating the epistemic effects of AI. The challenge AI poses to sociology surpasses the theme of simple automation of certain professional or methodological practices. It concerns the epistemic conditions in which sociological knowledge is produced, validated and made legitimate.

This argument becomes particularly visible when viewed through the sociology of health. Since its origins, it has examined the relations between knowledge, classification and power through which social reality is produced. Health, illness and cure have not been analyzed as given identities once and for all, but as objects that acquire meaning, visibility and legitimacy within specific knowledge practices. From Parsons (1951), who highlighted the role of professional competence in the social regulation of illness, to Freidson (1970), who showed how medical power rests on the ability to define what has to be recognized as a health problem, to Foucault (1963), who analyzed the link between classification, visibility and production of medical truth, and finally to Mol (2002), who emphasized the practical and situated character of health-care realities. These contributions indicate the sensitivity this field has reached towards those processes that confer the authority and definitional power of reality.

The centrality of health care professions, the role of medical institutions and the ongoing entanglement between knowledge and power have made health sociology a fertile terrain for the observation of a transformation that nowadays involves sociology in its entirety. Rather than being treated as a specific empirical field, health sociology is here considered a theoretical tradition particularly attentive to the processes through which classifications, evidence and forms of epistemic authority contribute to shaping social reality. This choice becomes more significant since the contexts of health and care represent those domains in which the integration of algorithmic systems and computational infrastructures is particularly advanced. These contexts provide a privileged standpoint from which to observe the transformations affecting the production, circulation and legitimation of expert knowledge.

The Transformation of the Regimes of Knowledge Production

If the sociology of health allows us to observe the relationship between knowledge, classification and power, the next step consists of addressing the transformations that

currently affect the conditions under which knowledge is produced and diffused. Every knowledge regime organizes specific modalities of observation, selection and interpretation of reality, establishing which phenomena deserve attention, which information can be considered reliable and which categories are adequate in describing the social world. Knowledge does not emerge from an immediate relation with reality; rather, it is shaped due to a multitude of mediations that allow its construction, circulation and use.

In the field of health, these mediations have historically been embodied by medical professions, scientific institutions and health systems. Expert knowledge has exerted its influence through the ability to diagnose and cure, but also through the definition of those categories that identify illness, describe it and transform it into an object of intervention. The sociology of professions (Freidson, 1970; Abbott, 1988) has shown that competence does not represent a mere ensemble of specialized knowledge, but a form of social organization of knowledge that establishes who may legitimately interpret certain phenomena and which procedures should be adopted to make them knowable. From a different but complementary standpoint, Bourdieu (2001) has highlighted how knowledge production is developed within the scientific field, a relatively autonomous space in which actors and institutions compete to define validity criteria, and proof standards and recognized forms of epistemic authority. These reflections lead beyond the problem of professional and scientific authority. As a matter of fact, Berger and Luckmann (1966) introduced a new perspective that invites us to consider knowledge as part of those processes that contribute to the construction, objectivation and sharing of social reality. Classifications do not simply describe the world, but play their part in its stabilization, making some interpretations more plausible than others and transforming certain meanings into shared references for action. Attention is therefore focused on the material, organizational and symbolic conditions that allow knowledge to acquire social consistency and orient practices.

At this level, the novelty introduced by digital and computational infrastructures becomes evident. Traditional forms of cognitive authority continue to play a fundamental role but increasingly operate within socio-technical environments in which platforms, classification systems and automated procedures participate in knowledge production. Their role is not merely to support the work of experts; they also shape the conditions under which information becomes available for interpretation and analysis. This transformation can be observed concretely in the researcher's own work. When the researcher explores digital archives, platforms, or databases, the empirical material does not present itself as a neutral set of information. It has already been organized, classified and made visible through criteria embedded in computational infrastructures that contribute to making some phenomena more visible while rendering others less readily recognizable as potential objects of sociological knowledge. The ongoing transformation cannot be interpreted as a simple replacement of professional authority by a technical one. Rather, it

entails a reconfiguration of the mediations that sustain the production, circulation and operationality of knowledge.

Bowker and Star's (1999) observations on the classification system assume an important role in this respect. Every classification constitutes a social infrastructure that organizes the world, distributes different forms of visibility and structures what is recognized as significant. Nowadays, these classifications are increasingly embedded in technical architectures that operate on unprecedented data volumes and produce orders that are difficult to trace back to the action of individual professionals or institutions. The transformation of the regimes of knowledge production concerns the growing centrality of these infrastructures in the relationship between knowledge and reality. AI represents the most advanced expression of said transformation, since it shines light upon the evident role computational mediation has in defining the forms through which the social world is organized, interpreted and transformed into an object of analysis.

Artificial Intelligence and the Construction of the Objects of Sociological Knowledge

Sociological interest in AI does not stem from its technological uniqueness, but from its ability to make observable the broader dynamics concerning contemporary modes of knowledge production, organization and legitimation. From this perspective, generative systems constitute one of the most visible expressions of these transformations and make it possible to examine the processes through which some phenomena become recognizable as objects of sociological knowledge. The emergence of an object of sociological knowledge does not coincide with the mere existence of a social phenomenon, but with the processes through which it becomes recognizable and analytically significant within practices of knowledge production. It is within this space that Artificial Intelligence becomes sociologically significant. Rather than introducing new objects of inquiry, AI becomes part of the mediations through which some phenomena are selected, classified and organized in ways that make their sociological thematization possible. In this sense, the issue extends beyond the field of health and concerns more generally the ways in which contemporary sociology constructs its objects of knowledge in contexts increasingly shaped by computational infrastructures.

Throughout its history, sociology has often constructed its objects of knowledge from phenomena that, in the early stages of their emergence, lacked both a shared definition and a stable position within existing interpretive frameworks. As Becker (1998) suggests, much sociological research begins with situations that appear marginal, ambiguous, or difficult to classify and that, precisely for this reason, make it possible to challenge established interpretive categories. The construction of the objects of sociological knowledge takes shape within this space, where scattered signals, uncertain forms of

experience and fragmentary empirical materials are recognized as clues of broader transformations.

Sociological evidence does not coincide with the mere presence of empirical data, since it requires a process of analytical construction that gives certain experiences theoretical consistency and explanatory ability. A significant part of sociological work develops precisely from engaging with phenomena that do not yet fit neatly into available interpretive frameworks and that, for this reason, help reveal their limitations and shortcomings.

The integration of Artificial Intelligence into knowledge-production processes makes it possible to observe these dynamics. Generative systems and computational infrastructures now take part in activities that organize, categorize, synthesize and prepare empirical material for analysis, thereby helping to redefine the conditions that facilitate the emergence of certain phenomena as meaningful objects of knowledge. Their functioning, based on the identification of linguistic regularities, statistically plausible associations and discursive recurrences, tends to privilege what exhibits greater semantic continuity and a more stable formal structure.

From this perspective, AI brings to light an epistemological tension of particular interest to sociology: the more processes of information organization are based on the identification of semantic regularities, recurrences and continuities, the more relevant it becomes to address the analytical fate of materials characterized by ambivalence, discontinuity and interpretive instability. In narrative, visual and interpretive research, where meaning emerges from indirect details, images, hesitations, silences, metaphors, or associations that are not immediately codifiable, this tension becomes particularly clear.

The reflections of Mayer-Schönberger and Cukier (2013) help situate this shift within a broader transformation of contemporary regimes of knowledge. The expansion of big data gives increasing authority to forms of knowledge based on the identification of correlations, the detection of patterns and the possibility of producing prediction-oriented inferences. The strength of these modes of knowing lies in their ability to process enormous amounts of information and generate operational representations of the social world, aimed at supporting decisions and actions in highly complex contexts. At the same time, their effectiveness contributes to redefining the criteria that make a knowledge-based outcome reliable, convincing and socially useful.

Classification, correlation and prediction tend to acquire increasing epistemic authority. The sociological interest of this process concerns the effects these modalities produce on the mechanisms that allow for recognizing, describing and transforming social phenomena into objects of knowledge. While some dimensions of experience are more easily translatable into data, comparable and processable, others may occupy a less visible position while continuing to raise central questions for the comprehension of the social

world. This dynamic invites us to investigate the possibility that the construction of objects of analysis tends to privilege what appears recurrent, whereas phenomena that require interpretation, contextualization and attention to unstable forms of meaning become more difficult to thematize.

The analyses of Beer (2017) and Pasquale (2015) also align with this perspective, showing how algorithms – which operate to organize information, assign priorities and establish criteria of relevance – are often opaque or difficult to access. The transformation of the contemporary regimes of knowledge, therefore, also concerns the thresholds that define a phenomenon's access to the realm of sociological thought. One of the most significant aspects of AI for sociological reflection lies in its ability to reveal the constructed nature of evidence and the fragility of the processes through which certain phenomena acquire analytical substance. The growing participation of computational infrastructures in the organization of empirical material makes it necessary to address the criteria that guide the selection, thematization and transformation of certain experiences into objects of knowledge.

The implications of this transformation become more tangible when observed in concrete contexts.

One illustration can be found in contemporary healthcare. The integration of clinical information originating from different moments, contexts and sources within digital and computational infrastructures makes it possible to bring together fragmented information that, when considered in isolation, would be unlikely to acquire a coherent clinical meaning. What changes is not simply the capacity to analyse larger volumes of data, but the conditions through which particular clinical situations become recognizable and emerge as objects of clinical attention.

A similar transformation can be observed in sociological research, where the integration of digital archives, scientific databases and computational tools for organizing the literature makes it possible to bring together contributions, concepts, and findings from different research traditions, rendering visible connections that would otherwise remain difficult to identify when these traditions are considered separately. Here too, the crucial issue is not merely the expansion of the information available, but the redefinition of the conditions through which certain phenomena acquire analytical relevance and emerge of sociological knowledge.

The Epistemic Reflexivity of Sociology

Artificial intelligence occupies an internal position within the processes through which contemporary societies produce knowledge, assign value to information and construct representations of reality. Understanding this transformation means examining, at the same time, the social world and the categories used to describe it, since a significant part

of the current changes concerns the conditions that make the production, validation and legitimation of knowledge possible. These transformations also carry important implications for sociological practice. Alongside the interpretation of empirical material, contemporary sociological research increasingly requires critical attention to the computational infrastructures involved in its selection, organization and preparation for analysis. As a consequence, routine sociological research increasingly includes reflection on the epistemic mediations through which research materials become available, visible and analytically relevant for sociological inquiry.

The epistemic reflexivity prompted by these transformations is particularly important for a discipline that has built a significant part of its cognitive capacity on its attention to phenomena that initially lacked a shared definition. Marginal experiences, emerging processes and dimensions of social life that are still difficult to name have often served as the starting point for new sociological questions and new ways of understanding reality. Sociology develops through its engagement with what does not yet have established categories, dwelling with ambivalences, discontinuities and provisional forms of meaning.

The sociological interest in AI lies in its ability to make observable the conditions that facilitate the emergence of certain phenomena as objects of analysis. The growing participation of computational infrastructures in the organization of empirical data and the construction of the informational foundations of research draws attention to the criteria that guide the selection of phenomena, facilitate their thematization and contribute to determining their centrality in the processes of knowledge production. The focus thus shifts to how specific aspects of the social experience acquire analytical substance, while others remain more difficult to identify, interpret and problematize. This leads to a crucial awareness for sociology: what is readily available does not necessarily coincide with what requires understanding.

The transformation of the contemporary regimes of knowledge, therefore, points to a responsibility that directly concerns the discipline itself. In a historical phase characterized by the growing presence of computational infrastructures in the production of knowledge, sociology is called upon to exercise a form of reflexivity that addresses both its objects of study and the conditions that make their construction possible. What characterizes this reflexive exercise is the attention to the forms of selection, organization and thematization that shape the configuration of the objects of analysis and define their centrality within scientific research.

One of sociology’s most important functions continues to lie precisely in this attention to the processes that make the social world knowable: expanding the horizons of sociological understanding and keeping open the possibility of recognizing transformations that have not yet assumed a fully defined form.

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Hsiang-Chieh Lee

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