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New Institutional Theory and AI: Toward Rethinking of Artificial Intelligence in Organizations

Abstract

Purpose. In this theoretical article, we introduce new institutionalism as a framework through which business and management researchers can explore the significance of AI in organizations. Although the new institutional theory is a fully established research program, the neo-institutional literature on AI is almost non-existent. There is, therefore, a need to develop a deeper understanding of AI as both the product of institutional forces and as an institutional force in its own right.

Design/methodology/approach. We do it here following the top-down approach. Accordingly, we first briefly describe the new institutionalism, trace its historical development, and introduce its fundamental concepts: institutional legitimacy, environment, and isomorphism. Then, we use those as the basis for the queries to perform a scoping review on the institutional role of AI in organizations.

Findings. Our findings reveal that a comprehensive theory on artificial intelligence is largely absent from business and management literature. The new institutionalism is only one of many possible theoretical perspectives (both contextually novel and insightful) from which researchers can study AI in organizational settings.

Originality/value. We use the insights from new institutionalism to illustrate how a particular social theory can fit into the larger theoretical framework for artificial intelligence in organizations. We also formulate four broad research questions to guide researchers interested in studying the institutional significance of AI. Finally, we include a section providing concrete examples of how to study AI-related institutional dynamics in business and management.

Keywords: *new institutional theory, isomorphism, legitimacy, organizational theory, artificial intelligence, AI*

In the end […] there will be nothing that cannot be simulated. And this will be the final abridgment of privilege. This is the world to come. Not some other. The only alternate is the surprise in those antic shapes burned into the concrete.

—Cormack McCarthy, *The Passenger*

Introduction

Artificial intelligence is certainly not a new buzzword. As an area of scientific inquiry, it has been around for decades (Muthukrishnan et al., 2020). As a set of practical tools at a distance of a mouse click, available for basically everyone and with the lowest barrier of entry, it is, however, recent (Wu et al., 2023). The reinvigoration in the popularity of AI in academia is, therefore, far from unwarranted and surprising. What is surprising, though, is how little has been said so far about the societal (including organizational) impact of the technology beyond mere considerations embedded in the technical core of what constitutes the so-called "artificial intelligence." To address the issue, we argue for a more solid theoretical perspective to understand AI in organizations. Accordingly, in this article, we introduce new institutional theory as a useful lens to improve our ontological and epistemic framing of the role of artificial intelligence therein.

The research program of new institutionalism is relevant given the two trends. First, the proliferation of discourses on artificial intelligence is unprecedented. Currently, generative AI is allegedly threatening creative industries, and the rise of AI gurus on social media mirrors the recent cryptocurrency craze. Then there are the promises of completely functioning self-driving cars, Industries 4.0, 5.0, and, according to some authors, 6.0 (Duggal et al., 2022), radical changes in healthcare, education, customer service, and even the integration of human brains with artificial intelligent agents (Panuccio, 2016). Hence, the proverbial separation of "the [AI] chaff from the [AI] wheat" has never been more challenging. Second, it has been our perception—albeit substantiated by our previous work in the field—that business and management researchers have mostly emphasized either technical aspects of AI or futuristic speculation on its implications for the future of work while paying little to no attention to the underlying theoretical issues.

The muddled state of AI research in business and management is not surprising. Artificial intelligence is a vague concept that simultaneously denotes the research area and the related technological outcomes. More generally, it refers to the simulation of human intelligence in machines (Iwuanyanwu, 2021). The leading textbook in the field defines artificial intelligence

as "the study of agents that receive precepts from the environment and perform actions" (Russell & Norvig, 2010, p. 7). Irrespective of the definition, the notion of agency appears to be central. It is precisely a hypothetical human-like agency that makes AI different from traditional means of production (Rudko et al., 2021). Indeed, within the organizational context, artificial intelligence can be conceptualized as a sort of hybrid between labor and capital: a self-sufficient agent capable of independent human-like thinking (Bashirpour Bonab et al., 2021).

AI researchers have often emphasized the role of rationality. For example, Russell and Norvig (2010) situate artificial intelligence on four (somewhat) contradictory dimensions: agents who think like humans, act like humans, think rationally, and act rationally. This focus on rationality transcends academia and is further magnified by the market and industry. The notion that human mentation is frail and flawed, however, can lead to irrational choices that fail to consider the broader structure of alternatives (Zuboff, 2019). For instance, even if generative AI is years away from matching human creativity and idiosyncrasies in the form and thematic breadth of writing, one can easily foresee Hollywood studios starting using the algorithm to generate thousands of variations of the same screenplay and then simply selecting the most "successful" alternative. We argue that, even in the best-case scenario (when the resulting work is flawless and the process is inexpensive), the supposed rationality of the process is deeply flawed. In a strictly Weberian sense (Ritzer, 1996), the tension here is between substantive rationality (considering value postulates appropriate for the given time and place) and mere formal rationality (a means-ends calculation outside a reasonable system of values). In our hypothetical scenario, the former prevails, leading to potential job losses across the entire industry and, more importantly, the further devaluation of the creative human endeavor. As a result, the bars of the Weberian "iron cage" get tighter, and the vicious cycle is set in motion.

Given this vague (and often unreasonable) promise of intelligent algorithms to tame the human tendency to be irrational (Burrell & Fourcade, 2021), the institutional elements appear to be deeply embedded in the organizational "mythology" of AI (Caplan & Boyd, 2018). For this reason alone, we believe the new institutional theory represents a proper theoretical lens through which the role of AI in organizations can be understood. Yet, to the best of our knowledge, organizational scholars have applied the institutional framework to artificial intelligence rather infrequently.

In order to address the shortcomings of contemporary AI research in business and management, we first introduce the new institutionalism, emphasizing its historical development and briefly outlining its key themes and topics. Then, we critically assess the sparse literature on the institutional role of AI by means of a scoping review. According to the

results of the review and the broader insights of (new) institutional theory, we argue for the need for a more nuanced ontology of AI in social sciences, including business and management research. In the remaining part of the article—and mainly for illustrative purposes—we outline a plausible theoretical framework for AI in organizations that encompasses new institutional theory and aims to integrate heterogeneous theoretical perspectives on artificial intelligence on different levels of analysis. We conclude the article by formulating four general research questions in line with the suggestion of Hatch and Cunliffe (2013). We argue that a deeper understanding of the institutional dynamics of AI in organizations warrants conclusive answers to the proposed questions. We also substantiate our reasoning by providing concrete examples of operationalizing and measuring AI-related institutional dynamics in business and management research.

Goals, research process steps, and methods

This article is mainly theoretical, as our primary goal is to argue for the importance of a more solid conceptual perspective on AI in organizational research. We do it here by 1) focusing on a particular well-established theory (new institutional theory) and emphasizing how the insights from neo-institutionalism can be applied to study artificial intelligence in business and management; 2) advocating for a more general integrative framework for AI in organizations and showing how the neo-institutional view on artificial intelligence could fit the said framework. As a theoretical article, our work is not grounded in empirical data or an experiment. Hence, instead of reasoning in terms of research questions, it is more appropriate to frame our article as a sequence of research steps (RSs) toward formulating and presenting convincing evidence for the necessity of more substantive theorizing for AI in organizations. These are:

RS1: Introducing the new institutionalism as a valuable perspective for understanding the complex dynamics AI introduces in organizations.

RS2: Outlining the state of the research on AI in business and management (in general) and within the neo-institutional paradigm (in particular) through a scoping review.

RS3: Showing how a new institutional perspective could fit a broader theoretical framework for AI in organizations, advocating for the need to develop a said framework, and reflecting on how it could be plausibly structured in order to stimulate discussions and give impetus for future research in the charted direction.

RS4: Providing concrete examples of how the institutional dynamics of AI in organizations can be operationalized and measured.

Regarding the RS2, a more nuanced review of the methodology is, nonetheless, warranted. In particular, we rely on the methodological tool of scoping review to emphasize the scarcity of research on AI within the neo-institutional perspective and the lack of a comprehensive theoretical framework for AI in organizations. According to Mun et al. (2018), a scoping review is an ideal tool for determining the coverage of a body of literature on a specific topic. It also highlights the emerging evidence when specific research questions remain vague (Munn et al., 2018). Here, we use it appropriately to identify a not-so-known research domain that, regardless of the maturity of the neo-institutional program, is still in the nascent phase of development, but also to showcase the potential of novel and valuable insights on AI in organizations offered by new institutionalism.

New institutionalism: An overview of the research program

While our approach might strike as overly pedantic, before proceeding to the main topic (i.e., the institutional role of AI), we want to dedicate a section of the article to reviewing and summarizing the main concepts and critiques of new institutionalism. We do it mainly for two reasons. First, new institutional theory concepts and themes are at the core of our theoretical contribution. Nevertheless, we suspect not all AI researchers, including those working within social sciences domains, are equally and adequately familiar with it. Second, as authors and communicators, we struggled to find a summary of new institutionalism that is both brief but also comprehensive and exhaustive. Hence, we decided it would be easier to provide one ourselves. In this regard, the current section stands on its own, and those interested in new institutionalism will find it valuable regardless of their curiosity about AI.

Historical roots and early development

New institutional theory is rooted in a century-long tradition of institutionalism. The related literature distinguishes between early writers, such as Weber (Ritzer, 1996), and new institutionalists, further divided into "early" school (frequently referred to as simply "institutionalism") and "late" school from the 1970s and onwards (also known as "proper" new institutionalism or neo-institutionalism) (McAuley et al., 2007).

From its beginnings, the institutional theory was primarily concerned with intangible norms, values, rituals, and organizational myths that shape behaviors and organizational structures

(Daft, 2012; Ritzer, 1996; Selznick, 1984). The new institutionalism of the 1970s expanded on the notion of institution, as developed by the early school of the mid-20th-century American institutionalism (Barkanov, 2016; Selznick, 1984), combining it with insights from behavioral scholars (Ishiyama & Breuning, 2014) and, thus, emphasizing the role of individual actors in addition to larger institutional forces.

Neo-institutionalism developed primarily in the United States in the 1980s (Ishiyama & Breuning, 2014). Since then, it quickly spread across the Atlantic, becoming one of the prominent schools of thought within organizational studies (Alvesson & Spicer, 2018). It is also worth noting that the endeavor of most early neo-institutionalists was to develop alternative explanations to the functionalist theory of organizations, which spread in American sociology mainly through the writings of Talcott Parsons (McAuley et al., 2007; Ritzer, 1996). Today, new institutionalism is a transdisciplinary research program crossing the boundaries of political science, economics, organizational behavior, and sociology (Ishiyama & Breuning, 2014).

James G. March and Johan P. Olsen are often considered two of the most influential theorists of new institutionalism. Of particular relevance is their 1983 article "The New Institutionalism: Organizational Factors in Political Life," exploring possible directions for theoretical research within the developing research program (March & Olsen, 1983). However, it was the 1977 article of John W. Meyer and Brian Rowan that, for the first time, revised the definition of "old" institutionalism, emphasizing the concept of institutional isomorphism as the main opposing force to the process of formal rationalization (Meyer & Rowan, 1977; Ritzer, 1996). Elaborating on Selznick's (1984) idea that organizations reiterate the values of the broader society, the other two influential figures in the field—Paul J. DiMaggio and Walter W. Powell (1983)—argued that organizational competition is not only for resources and customers but also for institutional legitimacy. In addition, Richard W. Scott defined new institutionalism as "the process by which actions are repeated and given similar meaning by self and others" (Scott, 1987, p. 496). Hence, the emphasis of new institutional scholars shifted from the result (the institution) to the process of institutionalization.

The idea of institutions as recurring patterns of actions gave social constructionism prominence within the neo-institutional school of thought (Hatch & Cunliffe, 2013). According to Hatch and Cunliffe (2013, p. 75), "When shared meaning becomes crystallized in repeated actions […] then institutions […] are transfigured into institutional actors, just like any other organized entity." Hallett and Ventresca (2006) are of the same view, arguing for a more solid interactionist methodology for new institutionalism. However, deterministic interpretations remain the most prominent within the field (McAuley et al., 2007). Conversely, some

contemporary neo-institutionalists integrate both micro and macro perspectives, and the importance of micro-political processes of institutionalization is increasingly relevant.

Institutional environment and legitimacy

The institutional perspective (both "old" and "new") is mainly externalizing; thus, the role of the organizational environment is of primary importance. The emphasis is on the congruence between an organization and the expectations from the environment (Daft, 2012), especially its task environment, including customers, suppliers, and competitors. From the institutional perspective, the best way for an organization to increase its legitimacy is to imitate the goals, structures, cultures, and norms of successful organizations in its population (Jones, 2010; Tolbert & Zucker, 1983). However, the broader institutional environment is also essential and should not be neglected. According to Scott (1987), it comprises all social agents capable of imposing values, norms, rules, and beliefs on an organization: government agencies, regulatory structures, laws and courts, professions, public opinion, and interest groups. In other words, the institutional environment of an organization reflects all things important, necessary, and valued by the greater society (Daft, 2012).

The institutional perspective does not reject the importance of the technical dimension. The latter, however, is frequently governed by norms of formal rationality and efficiency (Daft, 2012; Ritzer, 1996). Instead, the institutional dimension is governed by the expectations of other institutions and people from within and outside an organization (Daft, 2012; Meyer & Rowan, 1977). Accordingly, an organization also seeks legitimacy, defined as "the general perception that an organization's actions are desirable, proper, and appropriate within the environment's system of norms, values, and beliefs" (Daft, 2012, p. 207; Suchman, 1995).

The importance of institutional insight lies in recognizing the potential trade-off and, consequently, the antagonistic relationship between efficiency and legitimacy (Daft, 2012). Taken-for-granted rules and norms that define how an organization should operate "are not necessarily based upon a clear link to organizational performance" (McAuley et al., 2007, p. 210). Therefore, according to Meyer and Rowan (1977) and Scott (1987), at the core of institutional logic is myth-making: taken-for-granted, powerful, albeit socially constructed beliefs of what constitutes a "good organization," regardless of the evidence of their immediate efficiency. As a result, alternative modes of organizing become smeared upon, proscribed, or simply unthinkable (McAuley et al., 2007).

One example of an institutional myth is the "too big to fail" argument—never tested objectively but unquestionably invoked on behalf of big banks during the 2008 financial crisis

(Hatch & Cunliffe, 2013). Another example, in line with the stated research steps, is how academia and the broader public perceived the occupational threat of AI in the first decade of the 21st century compared to how researchers perceive it now. Indeed, for a period of time, the emphasis was on the danger of AI potentially replacing humans in the workplace (the so-called "de-jobbing" narrative). Nowadays, such an argument seems to have fallen out of fashion and was promptly replaced with the "de-tasking" narrative (i.e., intelligent artificial agents will most likely take away only the tedious tasks from our jobs) (Rudko et al., 2021).

The core of institutional reasoning is well-aligned with the contingency theory logic: those who adopt and communicate the practices of a "good" organization increase its legitimacy in the eyes of stakeholders and, as a consequence, increase the organization's ability to survive and prosper (Daft, 2012; Jones, 2010). Legitimacy is not conferred because the organization makes more profits or is more technologically efficient but because it follows accepted conventions of the society in which it operates (Hatch & Cunliffe, 2013). Furthermore, the lack of objective performance criteria means that institutionalized organizations are not accountable to society except in a strictly superficial sense (Hatch & Cunliffe, 2013).

Isomorphism

Another fundamental concept of new institutional theory is isomorphism—popularized by DiMaggio and Powell in their seminal article, "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." Like Meyer and Rowan (1977), DiMaggio and Powell (1983) contrast the Weberian notion of rationalization (Ritzer, 1996), suggesting that forces different from formal rationality may also govern the dynamics of modern capitalist organizations.

Institutional isomorphism describes the move towards the similarity of organizational structures, routines, norms, and cultures once the industry (task environment, field, organizational population) becomes established (Daft, 2012; DiMaggio & Powell, 1983). Indeed, an organization directs many aspects of its culture, norms, structure, and behavior toward environmental acceptance instead of mere technical efficiency. As Tolbert and Zucker (1996) put it, the structure is often like a façade disconnected from technical aspects—a façade through which an organization obtains legitimacy and support.

While emphasizing that their taxonomy is purely theoretical and other types of isomorphism may exist, DiMaggio and Powell (1983) identified three ideal types of institutional isomorphic processes: coercive, mimetic, and normative. Coercive isomorphism results from the formal and informal pressures that any organization is subject to (Daft, 2012; DiMaggio & Powell,

1983). Pressures can come from the government in the form of regulations and threats of sanctions. One example of coercive isomorphism is when organizations are forced to adopt nondiscriminatory equitable hiring practices because they are proscribed to do so by law (Jones, 2010). Coercive isomorphism can also be indirect and informal, for instance, when the organization adopts the values and norms of organizations upon which it depends (Jones, 2010). Therefore, coercive pressures are closely related to the power distance (Daft, 2012).

Mimetic isomorphism typically occurs when an organization intentionally copies and imitates successful organizations in its population to increase legitimacy (DiMaggio & Powell, 1983; Jones, 2010). According to Hatch and Cunliffe (2013, p. 75), "mimesis has become the normative activity of best practice." As a result, practices and techniques such as outsourcing, teams, balanced scorecards, Six Sigma programs, and brainstorming are frequently adopted without clear evidence of improved efficiency and effectiveness (Daft, 2012).

Normative isomorphism consists of pressures to reach commonly established standards of professionalism and adhere to practices and techniques recognized by the professionals within the field (Daft, 2012). Norms and values are usually acquired indirectly through normative isomorphism in a circuitous way, for example, by recruiting managers from other companies in the industry or through membership in trade and professional associations (Jones, 2010).

DiMaggio and Powell (1983) identified several conditions leading to increased institutional isomorphism. Chiefly, higher resource dependence relates to coercive isomorphism; goal ambiguity and technological uncertainties relate to mimetic isomorphism; common training, schooling, and professionalization lead to normative isomorphism.

The expression "iron cage" in the contribution of DiMaggio and Powell (1983) is frequently misinterpreted as a warning that all organizations may eventually become identical due to isomorphic pressures. A more nuanced interpretation emphasizes "agentic and often creative ways in which organizations inculcate and reflect their institutional environments" (Suddaby, 2010, p. 15). Such processes constitute the core of the so-called institutional entrepreneurship (McAuley et al., 2007; Suddaby, 2010). However, although organizational isomorphism can help new organizations establish legitimacy, it has its drawbacks, mainly the reduced incentives to experiment and innovate and the increased risk of becoming obsolete due to organizational inertia (Jones, 2010).

New institutionalism of today: state of the research program and its critiques
Today, new institutionalism is a well-developed research program in the stage of late maturity (Alvesson & Spicer, 2018). A recently re-published homonymous handbook (Greenwood et al.,

2017) is a testimony to its complete maturation. As a consequence, new institutionalism is not immune to the typical pitfalls of a well-developed school of thought. Willmott (2015), for example, suggests that early symptoms of exhaustion and breaking up of the "institution" of the institutional theory are starting to appear. Alvesson and Spicer (2018) identify five such symptoms: overreach, myopia, tautology, pseudo-progress, and "re-invention of the wheel." The authors claim that neo-institutionalism is now facing a "mid-life crisis": while remaining one of the dominant paradigms of organizational studies, it can no longer produce insightful and novel conceptualizations unless prominent scholars within the field "limit the range of the concept, sharpen their lens, avoid tautologies and problematize the concept" (Alvesson & Spicer, 2018, p. 199).

Given its scope and relevance for organization studies, new institutional theory is also subject to substantial outside criticism. For example, McKinley and Mone (2003) point out the ambivalent role of rationality. On the one hand, a neo-institutional view emphasizes the antagonistic relationship between rationality and legitimacy. On the other hand, the emphasis on legitimacy as necessary for organizational survival can be perceived as entirely rational (McAuley et al., 2007). An additional issue is the absence of solid micro-foundations and the reliance on determinism (for instance, the belief that legitimacy automatically ensures organizational survival) (Hallett & Ventresca, 2006). Finally, the emphasis on stability in DiMaggio and Powell's (1983) seminal article resulted in the successive decrease of scholarly attention to the issues of power and the informal organization, fundamental to Selznick's (1984) "old" institutionalism (McAuley et al., 2007).

Looking at AI in organizations through the neo-institutional lens: state of the art and re-definition of the concept

The institutional role of AI in organizations. A scoping review

Two types of studies are common within the neo-institutional paradigm: those concerned with further developing the theoretical corpus and substantive works applying institutional logic to a particular phenomenon or issue (McAuley et al., 2007). An example of the second type is the study of McKinley et al. (1995) on downsizing, in which the authors show how the practice became institutionalized in Anglo-American organizations despite a lack of evidence that it indeed increases profitability.

Regarding the topic of AI, using (new) institutional theory to understand the related organizational dynamics perfectly fits the "substantive works" category. Indeed, irrespective of the research program's maturity, new institutionalism can offer a fresh perspective on the role

of AI in organizations. According to Alvesson and Spicer (2018, p. 209), one of the signs of the "mid-life crisis" of neo-institutionalism is that "despite the enormous amount of work which has already been done, institutional theorists always seem to find something new to say, or at least something new to other institutional theorists." On the contrary, when it comes to AI, the risk of "re-inventing the wheel" is minimal. To the best of our knowledge, the institutional role of artificial intelligence is an under-researched subject, and there have been little to no prior efforts to properly organize and systematize the related neo-institutional insights. In this regard, ours is one of the first studies aiming to do so.

In order to 1) identify and map the research area and 2) analyze the apparent knowledge gaps (Munn et al., 2018), we opted for the scoping review approach. It is important to emphasize that while relying on the "toolbox" of a systematic literature review, the scoping review's objectives are fundamentally different (Mak & Thomas, 2022) and are more in line with the goals of knowledge synthesis and gap-spotting implicit in the RS2 of the article (see 'Goals, research process steps, and methods' section).

For this purpose, we assessed two academic search engines. We used Scopus as a general-purpose and high-reliability search engine (Gusenbauer & Haddaway, 2020) suitable for a proper systematic literature review—from which scoping review "borrows" its procedures and presentation (Mak & Thomas, 2022). Following the suggestion of Gusenbauer and Haddaway (2020), we also used Google Scholar to complement the results and ensure that no relevant articles were excluded from the analysis.

Following the top-down approach, we started with the broadest possible question: What is the state of AI research in business and management? By searching for all the academic documents with "AI" or "artificial intelligence" in titles, we found around 80000 results on Scopus (as of 12/09/2023). When we restricted the query to the domain of "Business, Management and Accounting," only 2363 scholarly documents were identified[1].

Figure 1 shows the co-occurrence map of the most used keywords across the 2363 articles. In particular, through Scopus, we downloaded the complete metadata of the identified scholarly documents, including all the abstracts and keywords. Since Scopus does not allow the download of more than 2000 document information entries at a time, we performed two downloads and then merged the resulting Research Information Systems (RIS) files in Zotero (version 6.0.30). We then imported the compound RIS file in VosViewer (version 1.6.19) and performed a co-

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[1] (TITLE ("artificial intelligence") OR TITLE ("AI")) AND (LIMIT-TO (SUBAREA , "BUSI")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (LANGUAGE , "English"))

occurrence analysis of keywords. We opted for a full-counting method by assigning an identical weight for each co-occurrence of keywords across documents. Given the substantial size of the dataset, we set a minimum number of occurrences to five to avoid including keywords of only marginal relevance (for the field) in the analysis. Of 9976 keywords, 520 met the threshold. The keywords *artificial intelligence* and *machine learning* were excluded for better presentational clarity, as their size and centrality in the network made the initial graph less intelligible. Overall, the analysis resulted in six macro-thematic clusters. Of these, the cluster of articles closest to the neo-institutional perspective is the blue one (at the top), centered on ethics, philosophy, privacy, transparency, and law. However, none of the most frequently used keywords explicitly relates to the two central topics of new institutionalism—legitimacy and isomorphism.

Figure 1. Knowledge structure of AI research in business and management
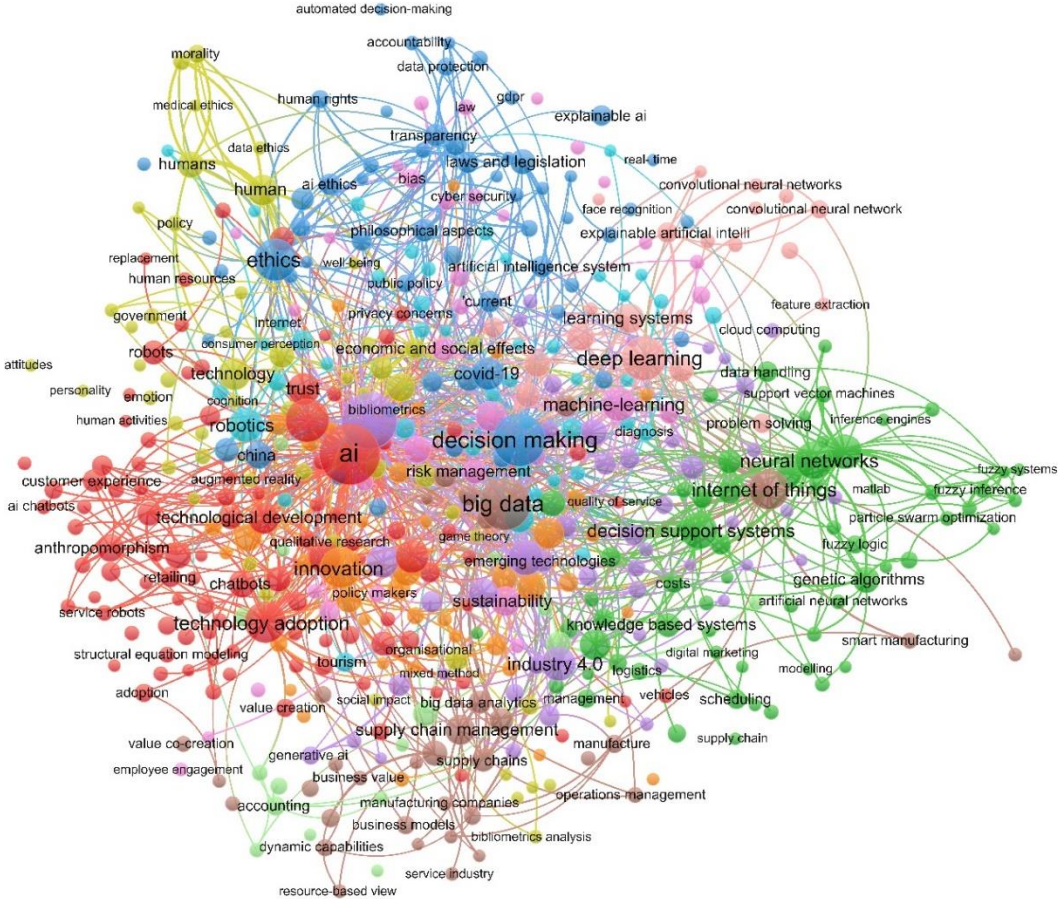
Source: Co-occurrence analysis of keywords in VOSviewer 1.6.19

Overall, the apparent lack of solid theoretical foundations upon which academics base their research on AI in organizations is puzzling. Indeed, as we already mentioned in the

Introduction, most current-day AI research in business and management delves into topics that are either of a technical nature (e.g., *data mining, big data, neural networks, forecasting, fuzzy logic* in Figure 1) or more futuristic and centered around technological forecasting (e.g., *technology adoption, robotics, future of work, industry 4.0* in Figure 1). Moreover, some researchers also focus on topics that are mainly applied and domain-specific (e.g., *healthcare, fintech, marketing, education* in Figure 1). However, nothing in a knowledge structure (Figure 1) hints at the interest in buttressing the organizational research on AI with solid theoretical insights, as keywords denoting fundamental theoretical perspectives, frameworks, and concepts dear to the entirety of social sciences are largely absent from the graph.

While it is true that such a generalization can not be derived exclusively from the visual exploration of the co-occurrence network (provided here mainly to showcase the state of the field at its broadest), we have arrived at identical conclusions by looking more closely at the abstracts of the identified articles. Indeed, a thematic analysis of the abstracts in the qualitative data analysis software (MAXQDA) (Mak & Thomas, 2022), performed both manually (open coding approach) and then through AI-assisted summary tools, showed inadequate theoretical support for most AI-related articles in the field.

When it comes to the neo-institutional perspective, in applying theory to the analysis of a specific organization or phenomenon, one must consider (1) how it adapts to the institutional environment, (2) how institutional myths shape the decision-making processes, (3) and how legitimacy is gained within a specific institutional context (Hatch & Cunliffe (2013). To understand how well these questions are answered with regard to AI in organizations, we ran a more restricted and domain-specific Scopus query[2]. We identified the keywords for the query by looking at the main themes and topics that had emerged from the assessment of neo-institutional literature in the previous section. In determining the keywords, we also followed the guidelines of Mak and Thomas (2022) on conducting a scoping review. As expected, the query resulted in a limited number of documents (thirty-eight), thirty of which were published in the last three years (Figure 2).

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[2] TITLE (("artificial intelligence" OR "AI") AND ("new institutionalism" OR "neo-institutionalism" OR "neoinstitutionalism" OR "institutionalization" OR "institutionalisation" OR "institutionalising" OR "institutionalizing" OR "institution" OR "isomorphism" OR "isochrones" OR "isopraxis" OR "isotypism")) . AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "SOCI")). We have also integrated the Scopus results with articles from a similar search on Google Scholar, according to the suggestion of Gusenbauer and Haddaway (2020).

Figure 2. Articles on the institutional role of AI by the year
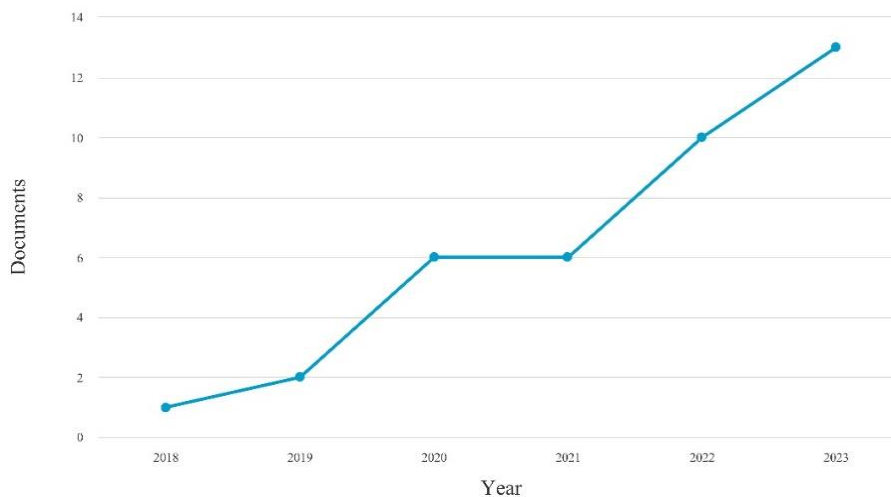
Source: Scopus

Among the analyzed articles, several investigate the institutional role of artificial intelligence in the military (Chedrawi & Atallah, 2021; Maas, 2019; Rosert & Sauer, 2021). In particular, Chedrawi and Atallah (2021) conclude that adopting customized "Narrow AI Applications" can help avoid institutional isomorphism in the defense sector. One article focuses on the institutional role of AI in smart city discourses (Schintler & McNeely, 2022). A review article touches upon the institutional influence of artificial intelligence in the medical field (S. H. Park et al., 2019). Notably, the authors discuss transparency issues in research studies on AI in medicine (S. H. Park et al., 2019). Another article elaborates on the increasing usage of service robots by service industries and the related notion of institution-based trust (S. Park, 2020). In addition, Seeber et al. (2020, p. 9) propose a research agenda to investigate "socio-technical systems where machine teammates collaborate with human teammates to achieve a common goal." Based on a survey of sixty-five collaboration researchers, the authors identify institution design (including responsibility, liability, education, and training) as one of three design areas worthy of investigation when innovating for AI team collaboration (Seeber et al., 2020). Likewise, several articles indirectly bring up the institutionalization of AI in companies (Sivash et al., 2020; Wagner, 2020), judicial systems (Dator, 2000; Gaivoronskaya et al., 2021), and society at large (Burrell & Fourcade, 2021).

Overall, we may conclude that, so far, only a few researchers have explicitly acknowledged the institutional role of AI in for-profit organizations. Indeed, only two articles (among those analyzed) directly apply neo-institutional logic to AI usage in businesses (Caplan & Boyd, 2018; Iwuanyanwu, 2021). In the most recent one, Iwuanyanwu (2021), through the analysis of questionnaires distributed to 330 randomly selected companies in the US, concludes that

institutional factors play an essential role in the adoption of AI in the American business context. Specifically, mimetic factors appear to play a crucial role, followed by normative and coercive factors. Moreover, results show that the application of AI significantly benefits organizational competitiveness (Iwuanyanwu, 2021).

The logic is somewhat reversed in Caplan and Boyd (2018). The authors identify AI as the driver of institutionalization, examining how intelligent algorithms can induce similarity across an organizational field (Caplan & Boyd, 2018). To achieve this, the authors introduce the concepts of algorithmic legitimacy and algorithmic isomorphism (Caplan & Boyd, 2018). The authors use the example of Facebook to illustrate their points. In particular, they analyze how the media industry was reshaped due to the emergence of powerful algorithmic intermediaries. According to the authors, neo-institutional definitions of intelligent algorithms should mainly "examine the role [algorithms] began to play as mediators of macro-political processes" (Caplan & Boyd, 2018, p. 3). For example, Facebook's News Feed algorithm exerts intense coercive pressure on media organizations using the platform as the intermediary (Caplan & Boyd, 2018). As Facebook and other digital intermediaries began to take on a "larger role in the distribution of journalism and other news media content," the media industry started to incorporate metrics and analytics into their own newsroom cultures; therefore, the institutional mimicry occurred (Anderson, 2011; Caplan & Boyd, 2018). Consequently, as online metrics and other data-driven processes have become the new standard (Anderson, 2011), normative pressures continue to aliment organizational isomorphism in the field (Caplan & Boyd, 2018).
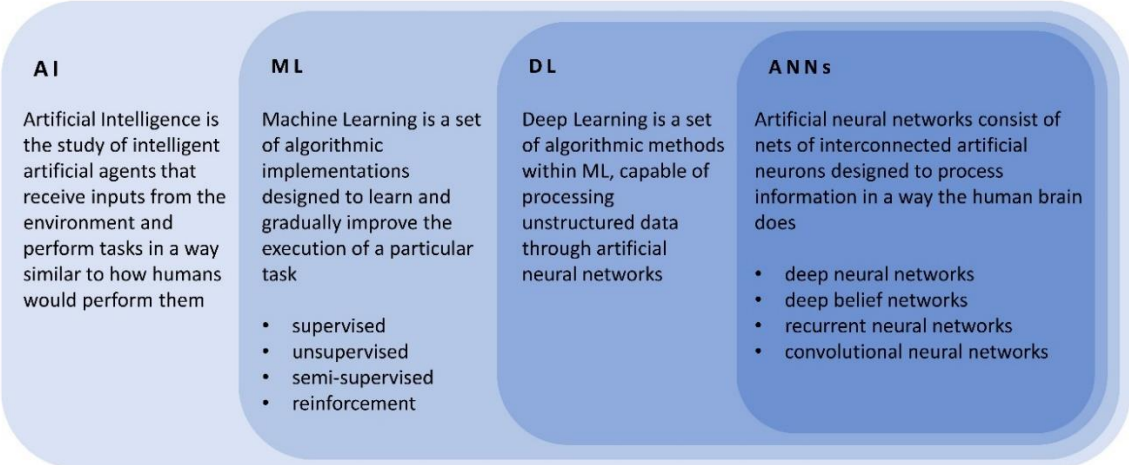
Neo-institutional view of AI in organizations: broadening the definition of AI for business and management research

According to Burrell and Fourcade (2021, p. 213), "the pairing of massive data sets with algorithms written in computer code to sort through, organize, extract, or mine them has made inroads in almost every major social institution." Indeed, scholars readily recognize AI as a critical technology and a potential key enabler of the forthcoming digital revolution (Brem et al., 2021). Sci-fi films and books on the topic also abound—not to mention mass media periodically creating waves of moral panic on issues such as out-of-control job automation and AI-assisted mass surveillance (Fleming, 2019; Shackleton, 2018). Given the disruptive role that society designates to artificial intelligence (Iwuanyanwu, 2021), it is essential to recognize the institutional risk of it becoming "over-hyped" beyond its current technological reach (Burrell & Fourcade, 2021).

The ontological difficulties in defining AI suggest that a more precise definition would necessarily require narrowing the scope of inquiry. One way to delineate AI ontology is to set aside theoretical arguments and view artificial intelligence solely as an existing class of algorithms with specific mathematical properties (Figure 3).

What we outline in Figure 3 constitutes a so-called technical core of AI. Two are the main objections to this categorization. First, not all researchers share the "matryoshka doll" view of artificial intelligence. For some, AI research has strayed away from its fundamental intentions, and most of the current machine learning implementations, albeit "artificial," are far from "intelligent" (Liu, 2021). Second, we believe that the technical core of AI is necessary but insufficient to understand the technology's importance from the business and management perspective.

Figure 3. A narrow definition of AI

AI

Artificial Intelligence is the study of intelligent artificial agents that receive inputs from the environment and perform tasks in a way similar to how humans would perform them

ML

Machine Learning is a set of algorithmic implementations designed to learn and gradually improve the execution of a particular task

- supervised
- unsupervised
- semi-supervised
- reinforcement

DL

Deep Learning is a set of algorithmic methods within ML, capable of processing unstructured data through artificial neural networks

ANNs

Artificial neural networks consist of nets of interconnected artificial neurons designed to process information in a way the human brain does

- deep neural networks
- deep belief networks
- recurrent neural networks
- convolutional neural networks

Source: Own elaboration

More so than with any other technology (and likely due to its "black-box" nature), the technical core of AI is hidden from the general public—but, alas! from most social science researchers—under strata upon strata of discourses, interpretations, forecasts, predictions, meanings, stories, anecdotes, sensationalistic media takes, fears, anxieties, futurism, and speculations (Figure 4). All those, we believe, are equally relevant and influential categories endowed with structuration capabilities. A narrow definition of AI cannot account for nuanced and idiosyncratic interpretations given to the technology by the broader public, as well as managers and other stakeholders of contemporary business organizations. Interpretations that—by their very nature—carry the potential for shaping and orienting our views on the future workplace, including the institutional trends concerning organizational design, culture, and norms.

Unlike the "matryoshka doll" view of artificial intelligence, the outlined broad perspective (Figure 4) acknowledges the preoccupations of those scholars who consider some modern-day machine learning algorithms as non-AI (Liu, 2021). From this point of view, being a machine learning implementation is neither a sufficient nor necessary condition to be categorized as a "proper" artificial intelligence. This, however, is merely a technical consideration. The institutional perspective primarily emphasizes the socially constructed elements of innovation—i.e., innovation is something that is perceived as such (Rossi, 2018). Hence, regardless of whether we share the preoccupations of those AI scholars who criticize the common view of AI (as outlined in Figure 3), both machine learning and its sub-categories (deep learning and artificial neural networks) are still a part of the "artificial intelligence" conceptualization within the proposed "broad" perspective, even if these are mere "statistical brutes" solving complex tasks in a manner substantially different from a way a human brain would do.

Figure 4. A broad definition of AI
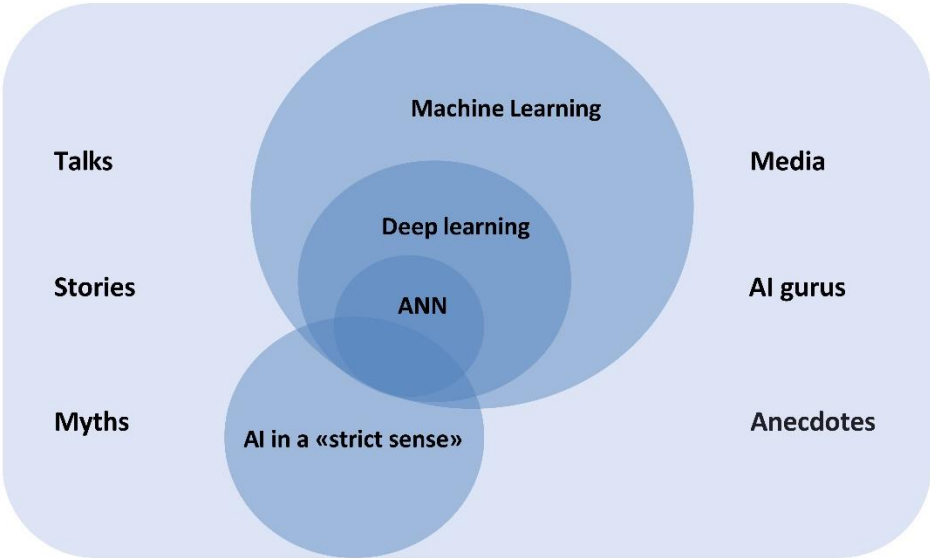
Technical considerations aside, the outer layer is what sets the "broad definition" of AI apart from existing classifications. A perfect metaphor for understanding the importance of the outer layer is that of biofouling, i.e., the tendency of sea life, including barnacles and other sea species, to cling to and accumulate on ships' hulls. Indeed, the amount of sea life attached to the underwater part of a ship eventually becomes so impactful that it substantially affects the vessel's efficiency (Bixler & Bhushan, 2012). In a way, the living mass attached to the hull

becomes a fundamental part of a ship, affecting its tonnage, speed, and other characteristics. Similarly, from the institutional point of view, the meaning we attach to the concept of AI, the way we talk about it, how we frame it, what we think of it, and how we think it will impact the future of the workplace, all substantially influence how it effectively influences our day-to-day work life in terms of measurable and operationalizable outcomes. Furthermore, as social scientists, we might as well argue that such outcomes can sometimes become even more influential and important than those related to the technical capabilities of the actual technology (Orlinkowski, 1992).

For instance, the proliferation and acceptance of socially constructed beliefs about AI's influence on the future of work can increase the likelihood of mimetic isomorphism. The "myth" of job loss (or de-jobbing) due to artificial intelligence has been gradually replaced by the "myth" of de-tasking, advanced by some AI and organizational scholars (Brynjolfsson et al., 2018; Johnson et al., 2021). This line of reasoning has then trickled down to the industry. Already in 2017, a Deloitte report stated that "instead of taking away jobs, AI will take away unnecessary and monotonous tasks out of jobs" (Walsh & Volini, 2017). Hence, it is possible to think of an organization that blindly imitates its successful competitors in the field already using AI to de-task specific jobs—even if mere efficiency reasons do not justify such imitation.

According to Iwuanyanwu (2021), the proliferation of algorithms can initially contribute to increased diversity and more competition in the field. However, the insights of the new institutional theory suggest that, in the long run, isomorphic tendencies eventually prevail. Uncertainty is, after all, closely linked to legitimacy and isomorphism (Burrell & Fourcade, 2021; DiMaggio & Powell, 1983). From the managerial point of view, uncertainty mainly relates to the lack of complete or correct information about the organizational environment (Bordia et al., 2004). As a disruptive technology, artificial intelligence introduces such uncertainties within and across organizational fields (Brem et al., 2021). Therefore, some institutional mimicry may be necessary to cope with AI-related environmental ambiguity.

Institutional myths linked to the further development and adoption of AI in organizations can also influence and shape decision-making processes. For instance, "myths" of rationality and algorithmic agency can exert normative and coercive isomorphic pressures on particular markets and industries (Caplan & Boyd, 2018). Besides, the more general tendency of algorithms (not only of AI variety) to homogenize organizational processes has been widely recognized by scholars. One may think, for example, of an "algorithms-as-institutions" argument by Napoli (2014) or the concept of "algorithmic assemblages" by Ananny (2016).

Two clarifications are necessary at this point. First, within the context of the article, the word "myth" bears a strong institutional connotation. Artificial intelligence may undoubtedly increase productivity, contributing to the technical (i.e., formal) rationalization of the workplace—in a strictly Weberian sense of the term (Ritzer, 1996). Additionally, the algorithmic agency is increasing with computational power and the amount of available data. Both algorithmic agency and rationality are turned into "myths" (in the institutional sense) when the structural and normative repercussions of technological development become, in the words of Selznick (1984, p. 17), "infused with values beyond the technical requirements of the task at hand."

Second, as mentioned before, no universally accepted definition of artificial intelligence exists—more so in social sciences (Zuboff, 2019). Hence, the fundamental challenge (not only within the neo-institutional perspective) is to establish an agreed-upon epistemology and ontology of AI in order to build a solid basis for further research agenda development. As an illustrative example of how this can be accomplished, in the next section, we outline a theoretical framework for AI in organizations integrating major ontological and epistemic perspectives and concerns of social theories. We also would like to emphasize that this is done mainly for illustrative purposes and without the pretense of the framework's empirical validity—something that only future studies in the field can (dis)confirm.

Towards an integrative theoretical framework for AI in organizations

The institutional role of artificial intelligence in organizations has been explicitly acknowledged only by a handful of researchers. In particular, Caplan and Boyd (2018) have recently elaborated on the concepts of algorithmic isomorphism and algorithmic legitimacy. However, the authors have investigated isomorphic processes related solely to social media platforms. They have also over-emphasized the intrinsic capacity of data-driven algorithms to make organizations homogenous. Conversely, we suggest that AI could increase the similarity within and across organizational fields by both directly and indirectly influencing the preexisting mimetic, normative, and coercive isomorphic processes (Daft, 2012; DiMaggio & Powell, 1983).

People's perception of artificial intelligence has considerable structuration potential (Burrell & Fourcade, 2021; Giddens, 1984). One of the likely outcomes of the ongoing "dialogue" between humans and AI is the growth of the institutional significance of artificial intelligence and, as a result, AI's increasing contribution to organizational dynamics beyond the implications of formal rationality. Yet, organizational scholars have rarely investigated artificial intelligence outside mere futuristic speculations, overly specific application domains,

or an emphasis on AI's technical capabilities. A bird-eye view of the academic literature on AI in business and management (Figure 1) hints at the dire state of the epistemology and ontology of artificial intelligence therein. Solid theoretical foundations are, indeed, largely absent.

Conversely, individuals, organizations, and society at large make sense of AI in ways that go far beyond the mere technical characteristics of existing technology. Meaning and connotations are attached. Technological outcomes are idiosyncratically interpreted. Organizational myths of rationality, algorithmic agency, job replacement, and task replacement are created. The AI "mythology" is then socially re-produced (Norton & Katz, 2017) by brochures, tech news, and AI gurus. As a result, similarly to other disruptive technologies—but maybe even more so—the comprehensive definition of artificial intelligence significantly exceeds its technical core (Figure 4). Not accounting for those socially constructed dimensions of artificial intelligence is a severe crime of omission.

Just like in the case of motivation and blockchain, marketing and organizational gurus have long "hijacked" the topic of AI from researchers, especially concerning how and who communicates AI-related topics to a broader public. In this regard, we believe that a solid theory of AI in social sciences could help bring it back to academia. Furthermore, it can tame the heterogeneity and incoherence with which organizational scholars approach AI-related topics today.

Figure 5 shows one of the possible theoretical lenses through which we can comprehensively frame the topic. According to the results of the scoping review, the theoretical corpus on AI in organizations is still slim. As a result, the proposed theoretical framework is somewhat speculative. However, this is not to say it represents an outcome of mere intellectual guesswork. On the contrary, the framework is firmly rooted in integrative sociological tradition, relating macro- and microanalytical levels of analysis through the concepts of processes (Tsoukas & Chia, 2002), practices (Reckwitz, 2020), and routines (Feldman & Pentland, 2003), and agency vs structure dilemmas through the notion of structuration (Giddens, 1984). Overall, our goal here is not to provide a definitive answer to the issue of theoretical scarcity but to show that such a framework is 1) possible, 2) can holistically accommodate more nuanced theoretical takes on the topic on different levels of analysis, including the neo-institutional perspective on AI, and 3) can be of interest to business and management researchers aiming at the more profound understanding of AI in organizations.

Figure 5. An integrative theoretical framework for AI in organizations
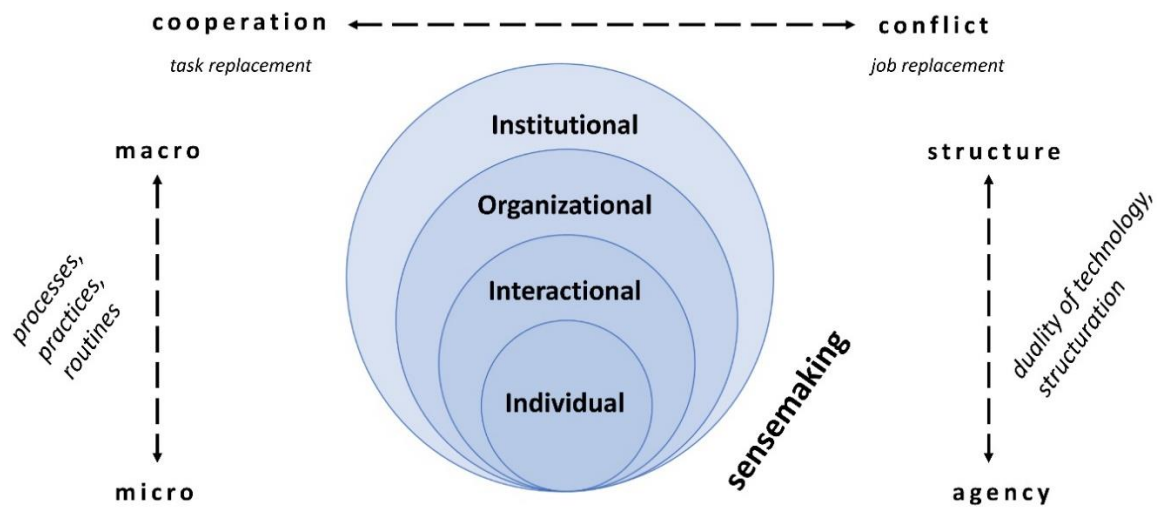
Source: own elaboration

At the framework's core is the Weickian distinction between organization and organizing (Weick, 1979). Sensemaking (Weick, 1995) is fundamental for the latter and central to understanding how social agents, comprising employees, managers, organizational departments, organizations, and the entire organizational fields, create and socially re-produce their understanding of AI (Scarbrough et al., 2024). Hence, in the proposed framework, the conceptualization of sensemaking goes beyond the individual level of analysis and integrates dyadic, organizational, and institutional factors (Nardon & Hari, 2022).

The framework tackles the separation between possible macro (e.g., systems theory, structural functionalism, economic determinism) and micro (e.g., rational exchange theory, personality psychology, decision-making) perspectives on AI in organizations by linking them through the concept of practice—that is, a set of actions informed by knowledge (Hatch & Cunliffe, 2013). Additionally, practices are closely related to organizational routines, which, unlike the common understanding of the term suggests, are far from inflexible in the sense that they are never performed in the same manner twice (Feldman & Pentland, 2003). Processes are also similar insofar as they focus on flux, emergence, movement, and change—contrary to structures, entities, and end states typically dear to modernist organizational theory (Tsoukas & Chia, 2002).

The distinction between agency and structure (the second vertical dimension of the model) may seem identical to that between micro and macro (the other vertical dimension). It is, however, distinct. The difference lies not only in the geography of the two traditions (micro vs.

macro is more "new world" while agency vs. structure is embedded in European sociological thought) but also because both agency and structure can refer to either micro-level or macro-level phenomena (Ritzer, 1996). For example, Burns holistically envisions social agents as comprising "individuals […], organized groups, organizations, and nations" (Burns, 2006). When it comes to AI, however, its agency is fundamentally different from that of a human employee. Besides, AI is unlike traditional means of production, as it combines the attributes of both labor and capital (Bashirpour Bonab, 2021).

To integrate the two views, we rely on Anthony Giddens's structuration theory—possibly the most articulated attempt to reconcile agency and structure (Giddens, 1984). Here, the model focuses on the theoretical particularization of Orlinkowski, who adapted structuration theory to understand the role of technology in organizations. Orlinkowski summarizes the "duality technology perspective" as rooted in two premises. First, technology exhibits duality: it is both the product and the object of organizational dynamics. Second, technologies differ in their "interpretive flexibility," which tends to increase with technological complexity and usage (Orlinkowski, 1992). For example, as AI becomes more widespread and complex and its "black box" is increasingly more difficult to decode, the variety of ways in which humans (but also organizations and entire fields) make sense of its inputs and outputs can only increase. This, indeed, is a theoretical argument in favor of diversity, contrary to the emphasis on organizational isomorphism, typical of the neo-institutional perspective at the very top of the proposed integrative framework (see Figure 5).

Implications for practice and suggestions for future research

Our knowledge of artificial intelligence in organizations is limited and flawed. A solid ontology and epistemology are lacking. On the one hand, it is understandable. AI technology is novel and fundamentally different. It is also developing rapidly. So much, indeed, that it becomes increasingly difficult to pinpoint its current state before it significantly alters in one way or another. On the other hand, the fleeting conditions of technological development call for more solid theoretical buttressing of AI-related social research.

Our primary goal with this article was to emphasize the need for a more nuanced theoretical understanding of the AI phenomenon in organizations. Hence, we geared it mainly toward other organizational researchers in the field, hoping that the insights and models we propose herein could be useful for their future inquiries into the topic. This is not to say that the outlined frameworks and concepts are foreign to the broader audience. Institutional entrepreneurship is as relevant as ever (Tiberius et al., 2020), especially in a society that is increasingly structured

by the way businesses "talk their talk" rather than "walk the walk." To be able to peer through the veil of mere technical characteristics of a disrupting innovation on the one hand and not fall prey to sensationalistic media takes on the other is crucial for long-run organizational survival. The argument becomes even more relevant considering AI's role as a key enabler of the forthcoming technological revolution (Truong & Papagiannidis, 2022). Far too often nowadays, discourses on artificial intelligence and machine learning are tainted with unquestioned enthusiasm. Instead, we call for greater managerial reflexivity in order to assess AI's role in organizations more critically. To achieve this, managers can adopt new institutional theory as a methodological tool to see through and beyond the AI "mythologies." Indeed, the new institutional theory offers insights into AI that fundamentally differ from dominant perspectives—devoid of mere admiration and futuristic speculations but grounded in a century-long sociological tradition.

New institutional theory is a well-developed research program in the stage of late maturity (Alvesson & Spicer, 2018). Nevertheless, it offers a variety of novel conceptual and methodological perspectives on AI and successfully problematizes the topic. In the article, we also discussed how it could plausibly fit a broader framework for understanding AI in organizations (Figure 5) by instantiating the said framework, especially regarding high-order levels of analyses. We are hopeful that the proposed framework could be of value to organizational researchers pondering the role of artificial intelligence in business and management. What makes it especially interesting is that 1) it offers a plethora of new ways of thinking about AI in organizations (our thematic and keyword analyses revealed the lack of nuanced theoretical outlook on artificial intelligence) and 2) to the best of our knowledge, no attempts to integrate existing theoretical perspectives on AI have been made so far.

Following the general suggestion of Hatch and Cunliffe (2013) on substantive research within the school of new institutionalism and in line with the results of the scoping review, we formulated three broad research questions useful for researchers intending to adopt a neo-institutional perspective in studying AI in organizations. These are:

RQ1. What are the mechanisms through which institutional context shapes the usage of AI in organizations and, vice versa, what are the mechanisms through which AI shapes organizations' institutional context?

RQ2. How are the decision-making processes shaped by the AI "myths" of rationality, agency, de-jobbing, and de-tasking?

RQ3. How is legitimacy gained within an AI-shaped institutional context, and what risks are associated with pursuing (algorithmic) legitimacy?

In addition, given incomplete and contradictory evidence from the analyzed literature, a fourth research question is also worthy of an answer:

RQ4. Will the usage of AI by organizations contribute to an increase in organizational isomorphism, or, on the contrary, will organizations become more diverse?

Given the origins of the theory and its historical continuity from Weber to DiMaggio and Powell, it is not surprising that the most famous works within the neo-institutional paradigm are often 1) full-fledged books rather than articles and 2) rely more on qualitative type of analyses rather than quantitative exploration and confirmation. In this regard, one way to understand if the usage of AI promotes isomorphism or fosters diversity and creativity (Orlinkowski's duality of technology perspective in the integrative theoretical framework for AI) is through an in-depth comparative case study. For instance, a researcher can compare specific organizational processes in two companies, one using AI for said processes and the other relying on more traditional factors of production. Different types of isomorphic processes within the same organizations could also be compared. Some of the difficulties here are related to the unclear ontology of AI. It is essential to determine precisely the processes' boundaries, including all agents, humans or not, responsible for the processes' implementation. If the hypothesis "the usage of artificial intelligence fosters similarity" is correct, one expects to observe clear signs of standardization and formalization of the ways humans interface with organizational processes in the case of AI usage. On the contrary, if Orlinkowski's (1992) thesis is true, reliance on AI could only lead to more creative ways of interfacing with technology. Hence, there will be more diversity and less standardization in how organizational processes unfold.

A comparative case study is not the only option. It is also possible to conceptualize a quantitative way of measuring the effect of AI on isomorphism. For example, one of the most ubiquitous use cases of artificial intelligence nowadays is generative AI, including chatbots like ChatGPT and YouChat. In this regard, an emerging strand of literature is concerned with the outcomes of using AI chatbots for the generation of sustainability reporting in business organizations (Moodaley & Telukdarie, 2023). This is not to say that a chatbot should generate the entirety of the report for it to be considered "AI generated." The person responsible for

sustainability report creation could use the chatbot to write only specific paragraphs and sections and then (retroactively) review and modify them if needed. One can also over-rely on AI-based online text editors like Grammarly or paraphrasing tools like Quilbot. In all instances, however, AI could significantly influence how the report is made and then presented (de Villiers et al., 2023). If the "isomorphism" hypothesis is correct, the usage of AI-based writing tools will surely contribute to the similarity, both lexical and semantic, of sustainability reports across organizations. Hence, one could conceptualize a within-subject natural experiment to measure the isomorphism in organizational texts by comparing those before and after the AI-based editing tools have saturated the market. More precisely, a researcher can collect sustainability reports of a set of companies (e.g., the first 100 EU companies by market capitalization) before and after 2022 (the date, of course, is indicative; one must argue for an appropriate cut-off point when AI-based writing tools became widespread). Suppose the "isomorphism" hypothesis is correct. In that case, sustainability reports after 2022 are more similar in form and substance than those before 2022. Of course, the question of the measurement remains unanswered. It is, after all, not within the scope of this article. Yet, measures of lexical diversity are numerous, and the literature on them is rich (MTLD, vocd-D, and HD-D, to name a few) (McCarthy & Jarvis, 2010).

Similarly, one could look at the entirety of scientific production within a particular area or field. One could, for example, use Scopus, Web of Science, or any other reliable academic search engine (Gusenbauer & Haddaway, 2020) to retrieve the information on all the articles, say, in the Business and Management category. Then, it would be possible to select and download two random sets of articles, one before and one after AI-based editing tools and chatbots became functional and popular. Again, we expect more lexical similarity for the second group if the "isomorphism" hypothesis is correct. Finally, both in the case of sustainability reports and academic articles, one should provide solid arguments for why there could not be other significant confounding variables that have contributed to the decrease in lexical/semantic diversity indices over time.

Conclusions and limitations

Artificial intelligence has firmly entered our collective imagination through books, films, video games, and, more recently, news segments on mass surveillance, job replacement, complete automation, and technological singularity. To a certain extent, the AI "mythology" (i.e., the product of the collective sensemaking on AI) overshadows the already impressive advancements in the field. Unsurprisingly, such ethos can shape and orient managerial views

on the future workplace, including organizational design, culture, and norms. Most scholars overlook AI's structuration capabilities, either buying into the "AI craze" or focusing on the more technical aspects of the technology. Conversely, attempts to research the socially constructed dimensions of AI are scarce.

In this article, we emphasized the necessity for a novel way to understand the role of AI in organizations. Accordingly, we first introduced the new institutional theory, describing its main concepts and outlining its historical roots, development, and recent criticisms. We then provided evidence of the literature gap and argued the need to problematize our understanding of AI in business and management. Broader considerations on theoretical scarcity aside, we have also formulated four general research questions potentially useful to AI scholars aiming to incorporate the new institutional perspective in their research. Those questions, we believe, warrant a definitive answer in order to comprehend AI's institutional role adequately.

This study is mainly a theoretical contribution. However, some of our results build on the outcomes of a scoping review. As such, those results are not immune to the limitations of the methods applied herein. It is also essential to distinguish between a scoping review and a systematic literature review. While some of the methodological tools and rigor of the latter are also part of the former, the goals of a scoping review are substantially different from those of a systematic review (Mun et al., 2018). The aim of the related section of the article was to delineate the research area and highlight the research gaps concerning how business and management scholars approach the topic of AI. Given the scarcity of scientific works on new institutional theory and AI, a full-fledged systematic literature review would still be too early to conduct. However, scientific production in the field is growing, and we expect future systematic reviews and meta-analyses to either prove or disprove our theoretical considerations.

The article mainly focuses on institutional theory and its role in explaining the AI-related dynamics in organizations. The integrated theoretical framework we outline here is just one plausible way of thinking about artificial intelligence and its broader socio-technical functions. As such, the framework represents a proposal for a "grand theory" of sorts for AI in organizations rather than an empirically validated theoretical model. Hence, we suggest readers treat it as such. We also suggest considering our article as one of the first attempts to systematize the (neo-) institutional literature on AI. Accordingly, additional empirical contributions and related reviews (both systematic and bibliometric) are expected to follow as scientific contributions in the field increase.

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