

A SOCIOLOGICAL STUDY OF HR PROFESSIONALS' DISCOURSES IN REGARDS TO THE DIGITAL TRANSFORMATION OF HUMAN RESOURCES PRACTICES

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ABSTRACT

In order to understand how algorithmic recruitment works, a sociological point of view is needed, especially when it comes to the problematic of inclusion and exclusion in terms of gender and social categories. With the most common view of technology as being objective and fair in treating job candidates, it is still unknown how often and thorough algorithms are verified in order to prevent bias and unfair representation. The present study aims at finding how algorithmic recruitment is perceived and discussed by hiring managers and software vendors of digital applications via two journals, specialized in the human resources field, one published in Romanian (*HR Manager*) and one in English (*HR Tech Outlook*). Through a comparative analysis, I compile and deliver a detailed list of professional representations of risks and benefits in digital recruitment. In contrast with the common view, both literature review and the data from the current research showed that technology can be just as biased as socially organized human beings.

Keywords: gender, discrimination, algorithms, digitalization, human resources.

INTRODUCTION

Recruiters play an important part in the social life because their choices can have a massive impact on individuals. Having a good, satisfying, well-paid job is one of the markers of a fulfilling life. With the rapid changes that are occurring in the fast-paced world of today, having the “dream job” is self-fulfilling, but it can also be exhausting. For both the candidates and the recruiters, the process of

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adapting and then performing properly is mandatory. Finding the best candidate for a position as quickly and efficiently as possible is becoming a necessity for recruiters.

In the world of recruiting, the use of algorithms is considered to be a major breakthrough. Firstly, the candidates are provided with the promise that they are treated in a fair way, objectively and with respect. Secondly, a tremendous burden is being lifted off the recruiters' shoulders by giving them the chance to no longer be questioned in regards to their subjectivity. With the help of what is promoted as a mathematically objective, neutral algorithm, they may feel relief and comfort that their choice is backed up by a technical and methodical measurement. Thirdly, the legal system is being given the hope that the battle against discrimination can be won.

Nevertheless, gender and other forms of bias can be an important downside in hiring practices based on digital tools, besides other risks such as those related to privacy, or to displacement of human expertise. Algorithms could transform a current practice into a radically transformed tool for recruiters and human resources workers: the costs and benefits, the risks and opportunities of this transformation need to be thoroughly examined and taken into account within the professional community.

RESEARCH QUESTIONS

The main research question that this paper seeks to answer is the following: *Are the professionals' discourses of HR cultivating attention and awareness to types of bias, or are they cultivating a broad discourse of neutrality and gender blindness?* My main focus is to see if the professional discourses in HR, that resonate with and inform professionals' practices, address gender discrimination and other issues concerning the quality of the recruitment process, and whether there is a systematic reflection on assessing bias in algorithmic and machine learning HR systems.

A secondary research question is: *How are professionals of HR representing the balance between risks and benefits of digitalization in their discourses?*

THEORETICAL GROUNDING

A sociological view on gender as a social institution might settle not on its timeless and rational spirit, but on the personally-relevant and historically-changing versions of shifting forms of inequality (Williams, 2013). As soon as an individual think s/he has an idea of how gender manifests itself, the institution of gender transforms, as time and society redefine its edges.

In its intersection with social categories such as with race / ethnicity, class, and age, gender is a primary frame through which we perceive individuals, make assumptions and understand behaviors. We use pre-established boxes to make sense of the differences between self and others. This type of categorization happens almost instantly and says as much about us as it does about our perception of others, in regard to sex, race or age. Gender norms and expectations also give us a hint on how to behave in certain situations or how to make sense of others' behaviors, or to estimate someone's capacity in a specific field (Ridgeway, 2009).

Defining the concept of a social institution can be challenging. The idea of an institution involves rules and procedures. But if we talk about gender as a social institution, it is difficult to find a series of generally accepted rules in which to fit it. However, gender should not be viewed from a micro, individualist perspective, but needs to be classified as part of society (Martin, 2004). Thus, the concept of gender becomes collectively and institutionally specified, along with family, politics and economy. The gender is constantly built socially through day-to-day practices of social actors, which makes it a fluid and valid product of society at one time, both in other institutions (such as family, school) and independently of them.

Viewing gender as a comprehensive social structure is foundational for a sociological approach. R.W. Connell (1987) presented a social theory of gender as forming representations of masculinity and femininity and therefore, defining the mutual dynamics that follow. A structure of power, based on gender and sex roles, can regulate other social areas, such as political theory. Throughout her work, Connell aimed to provide a methodical framework to analyse gender and sexuality, as no universal description can prove to be sufficient.

With all the changes that technology brought, the distinction between private and public is fragile and continuously changing, but most important, individually given. People have their own ideas about their personal data and what they want to share with others. Some might consider that their full name, phone number or address are public information and thus, can be shared with an unknown number of people via social media or online CVs. Others are more skeptical in regards to personal information that can lead strangers to their front door. And so, when referring to personal data and privacy issues in the *online* life of today's society, we have to consider multiple facets of the same diamond.

Throughout her work, Nissenbaum makes a clear distinction between surveillance and monitoring. Although they have a similar meaning, she states that she prefers using the term *monitoring and tracking* because *surveillance* is usually associated with government and political mischievous assumptions (Nissenbaum, 2009). Authorities can make use of a wide range of technology for social control or law enforcement. When people act or move on public grounds, they are aware that someone or something might be watching over, as they are observing and noticing their surroundings. As Nissenbaum said in her book, everything that happens on public grounds can be used by anyone in any way they want.

However, the mastermind that developed the concept of *surveillance capitalism* is Shoshana Zuboff, who dedicated her work to studying information technologies and the changes brought by the digital revolution. In 2019 she published “The Age of Surveillance Capitalism”, in which she talks about the digital services of companies such as Facebook, Amazon or Google, suggesting that they conduct their business based on a new form of capitalism – user-based information. She makes a case against online digital services, saying that as free as they say they are, the price we still pay is our personal data, our likes, dislikes and personal choices. Every click, like, tweet, google search, text, photo, location or online purchase is collected into what is usually referred to as *data exhaust*. What is interesting to notice is that she makes a thought-provoking argument out of the term exhaust, as the meaning of it refers to a used resource. She continues by stating that if this new asset is molded through surveillance, then it could be called a *surveillance asset*. Hence, having an asset leads to figuring out a way to generate income out of it – and we have arrived at the concept’s connotation of *surveillance capitalism*.

Therefore, in the world of recruiting, algorithms are creeping in like a savior solution. Kleinberg (2019) said that “we often refer to anything that involves data and the resulting prediction as an algorithm”. In the discussion about algorithms, it is important to clarify that there are actually two algorithms involved. One of them is called *the screener* and uses the characteristics of a person (potential candidate, credit applicant, student application) and reports back with a prediction of that individual’s potential in meeting the organizational requirements. The second algorithm, which it is called the *trainer*, proceeds and makes the decision. The trainer algorithm involves all the past reports, what predictors to use, which outcome is of interest, which is basically incorporated into the screener.

Knowing that there are actually two algorithms involved in the decision-making process helps to a better understanding of the human’s impact, since he / she is the one who decides how to construct the trainer and what to take into consideration, in order for the screener to work: “we have in mind situations where the decision we are examining is made many times, so that the training algorithm has enough cases to learn the relationship between the candidate predictors and the specified outcome. This means that algorithms will be better for micro-prediction tasks, such as hiring, than for macro-prediction tasks, such as who will win a presidential election” (Kleinberg, 2019).

In the same way, digital ranking might cause debate in the near future, personal scores might go public (Sussking, 2018). Individuals could be categorized by algorithms depending on personal traits such as attractiveness, number of friends, IQ score, body strength or anything that makes sense from a scoring and ranking perspective. The quest for popularity could be real, so it is always best to be at the top of the list.

A similar idea is debated in the book written in 2019, by Caroline Criado-Perez, called “Invisible women. Data bias in a world designed for men”. She talks about a male-based world, in which everything is built either favoring men or having a male prototype at its core, thus ignoring women and their needs: “no one meant to deliberately exclude women. It’s just what may seem objective is actually highly male-biased” (Criado-Perez, 2019). Although at first the exclusion of women may not seem deliberate, counter arguments are later debated. From too-big-for-a-women’s-pocket smartphones and voice recognition, to the logistics of public transportation, Criado-Perez makes a thorough analysis on gender discrimination and algorithmic bias. She posits that algorithms are taught to ignore women and to favor man, learning from previous cases or the actual coding. Her main concern is that when it comes to algorithms, it can be very hard to detect and correct bias.

In an article from 2018 called “Science Career Ads Are Disproportionately Seen by Men”, Dina Fine Maron discussed the algorithms behind job ads, as seen on Facebook and other social media channels. Administrators can’t assume an algorithm will impartially distribute ads – even if a campaign is explicitly planned as gender-neutral. She said that jobs regarding science, technology, engineering and mathematics, usually referred as *STEM*, are viewed less by women than by men. A possible explanation for this could be that the number of men who are currently occupying positions in this field exceeds the number of women. So, by learning from past knowledge, the algorithm is making, unintentionally, a prejudgment based on gender, which can be incorporate even in the screening step. Maron’s main argument is that the female eye is more expensive, since women do most of the shopping for a household. In order to catch the eye of a woman, hiring companies need to invest more in their marketing algorithms (Lambrecht, 2019). At the end of the day, numbers play an important part in any area of the social life, and even more in the professional sector.

When it comes to building an assessment setup, vendors have to bear in mind the client’s specificity and needs. Some are interested in performance reviews; others care about retention or work ethics. An assessment can be successfully built upon past or current employees. But the question of what makes a good employee can result in a biased choice. Plus, for an accurate prototype, the number of current employees might not be relevant and the batch of past employees might not be representative. A certain profile can fit in a certain team or match a certain client type; therefore, assessments need to be carefully designed and a lot of variables need to be considered: “IO psychologists have designed assessments based on their research-driven knowledge that certain traits correlate with desirable outcomes. To some extent, machine learning attempts to automate this process by discovering relationships (e.g., between actions in a video game and personality traits) instead of quantifying known relationships” (Raghavan, 2019).

Still, why the need for an online assessment? If the purpose is to conduct an efficient recruiting, many hiring managers are opting for online assessments, which can be done before the actual interview. Therefore, the recruiter can have a wider picture on the candidate and can better modulate the interview scheme.

Among the most reliable and valid predictors of an applicant's job performance, his / her cognitive ability and IQ quizzes are top of the list (Dattner, 2019). But it was found that these types of tests can be discriminatory towards certain protected groups or disabled people, unless the employer proves that the assessment procedure is attuned with the job requirements: "a growing consensus has formed around the idea that while assessments do have some predictive validity, they often disadvantage minorities despite the fact that minority candidates have similar real-world job performance to their white counterparts" (Raghavan, 2019).

What may come as a conclusion is that online assessments need to find a baseline because they are a part of the hiring decision and therefore a major influence for the people involved. A homogeneous way of conducting these evaluations must be identified in order to avoid unnecessary litigation.

METHODOLOGY AND DATA COLLECTION

The thematic analysis, alongside with the content analysis, are used for analyzing qualitative data, with a primary focus on written language, such as texts or interview transcripts. Although the two methods are often used interchangeably, they represent different approaches and should be treated accordingly: "in spite of many similarities between content and thematic analysis, for instance cutting across data, and searching for patterns and themes, their main difference lies in the possibility of quantification of data in content analysis by measuring the frequency of different categories and themes, which cautiously may stand as a proxy for significance" (Vaismoradi, 2013). In conducting a thematic analysis, the researcher needs to identify a set of common themes in the analyzed data, such as topics, concepts, repeated patterns and actions. For this research, the case study based on qualitative content analysis was the best option, its primary aim being that of analyzing narrative materials from online articles, product presentations and other relevant resources, in order to identify relevant patterns in algorithmic recruitment.

Based on the essential keywords for my research (such as bias, algorithmic recruitment, privacy issues), I created the table below, to illustrate the correspondence between the main themes (left) and some suitable examples from the analysis (right).

Table 1

Identifying themes

Bias and gender discrimination	<ul style="list-style-type: none"> – <i>“equity plans and values”</i> – <i>“transparency, seriousness and fairness shown by the employer in the selection and employment process”.</i> – <i>“Just like in personal life, and in professional life, people want to belong to groups with which they share the same values, have the same approach and with which they can achieve more than on their own”.</i>
Privacy issues	<ul style="list-style-type: none"> – <i>“The lack of regulated solutions is caused by the perpetuation of a legislative vacuum”.</i> – <i>“anyone can rely on these legal matters to seek protection”</i> – <i>“but it is mainly an intertwining of values and practices, often informal, agreed upon by most employees”</i>
Time framework	<ul style="list-style-type: none"> – <i>“freeing up their time – and brains – to think more creatively”</i> – <i>“how many clicks does it take for a candidate to get to the job application? If you have four or less clicks, you are doing great!”</i> – <i>“If we linger in reluctance, resistance and conservatism, the future will begin without us”</i> – <i>“the systems used make their activity easier, becoming faster and more efficient”</i>
Uncertainty in using algorithmic solutions	<ul style="list-style-type: none"> – <i>“HR and IT must work together to create the ideal team to champion”</i> – <i>“we need to make applying for a job easy to do!”</i> – (...) <i>“encounter mainly two reactions, which, although at extremes, often combine in different dosages: enthusiasm and fear”</i> – <i>“not everything goes flawlessly when it comes to digital transformation”</i> – <i>“will my job go away? will I be able to keep up?”</i>
Apps and digital systems	<ul style="list-style-type: none"> – <i>“tools supporting organizations in making logical decisions in even more complex situations”</i> – <i>“The Colorful.hr solution ensures the automation of key HR processes”</i> – <i>“Automated processes and internal systems, applications and robotics help and contribute to professional autonomy to a point”.</i>
Using machine learning – pros and cons -	<ul style="list-style-type: none"> – <i>“digital tools provided a transparent view”</i> – <i>“greater impact on work and organizations”</i> – <i>“technological development forces organizations to rethink their strategic business plans based on digital processes”</i> – <i>“Humans are not allowed to turn into machines, just as robots are not allowed to turn into humans. Cars provide information, people provide wisdom”.</i> – <i>“the best decisions are the ones where we combine really good data and really good human gut and experience”</i>

Data collection process was based on finding two online magazines, focused on HR topics and recent HR news. Both magazines are similar in design and content, as they both present the newest topics regarding HR and future conferences and events. All the necessary translation and interpretation, from Romanian language into English, were done by me. HR Manager is the first search result on Google, using the key words “HR” and “magazine”. As for HR Tech, its

title being suggestive enough, it is the structural equivalent of HR Magazine, as it gives a comprehensive overview on HR topics, especially on technological advances. I noticed that it is published into three separate regional magazines, one for US, one for Europe and one for the Asia-Pacific region (APAC). As expected, the US is the most extended version. This paper will only analyze articles from the European division.

In choosing the articles, I searched the title or the abstract for keywords related to my research, such as bias / gender / diversity, privacy issues, digital systems, apps, digitalization, automation of work, algorithmic recruitment, artificial intelligence, machine learning. In addition, I only considered articles no older than two years, as to still be relevant for the current technological advancements. Therefore, I selected a total number of 50 articles, 25 articles from each journal.

For an easy source track, by writing 1 in brackets I have referred to the Romanian journal (available at <http://hrmanageronline.ro/>) and 2 for the European journal (<https://europe.hrtechoutlook.com/>). Whenever I quoted from or discussed one of my online sources, I would mention the journal and the number of the article (for instance: 1–12 refers to the Romanian journal, article 12).

EMPIRICAL FINDINGS AND ANALYSIS

The first research question asked was concerning bias and gender discrimination, as it could be present at any level of an organization, starting from gendered bias in the recruitment process or in the upper-management decision. It was important to see if gender issues were discussed in the print and online media and to understand how people perceive and cope with gender discrimination, at the workplace or in their managerial roles.

As I examined professional discourses about online and offline recruitment, I noticed how seldom gender (or belonging to any other protected group based on race, age or sexual orientation for that matter) is debated. Gender issues have become a taboo subject, as it has become clear they could lead to legal problems. There is systematic discursive work of using gender-neutral terms. A good example is an extract mentioning work-life balance and how companies are taking active steps trying to ease the process of childcare: “*Although parents sometimes feel pressured to choose between career and child, this supposed alternative can often be bypassed*” (1–14). As women are the main caregivers and it is a common and known fact that they are often struggling with the pressure of work and family, by using the term *parents*, the social pattern of discrimination and bias is being neutralized.

In my analysis, I have not found any reference for the public display of femininity or masculinity in the workplace or as one of the criteria in the hiring process. However, one of the articles discussed the HR profession altogether, as more often than not it is considered to be a job for women:

“The HR profession has long been perceived as suitable for women. The ladies from HR, as they used to say, a long time ago. Maybe because it was seen as a soft, empathetic profession, oriented towards the employee relations, maybe because the strategic link between HR and business was overseen.” (1–23)

As women are perceived as “soft” and more caring than men, it was only natural to consider them more appropriate for a business dedicated to caring for people. In the respective article, the author was interviewing a HR manager, a man, asking how it feels to be the leader in an environment filled with more women than men. Still, his discourse was past-oriented, as the matter has now changed and gender is not relevant anymore in the professional world.

“So why don't we find more men in HR teams? Because we have strong women. We are probably still struggling in stereotypical ways. There are still business leaders and especially employees who perceive the profession as a soft one. In Romania, unfortunately, there are still no clear studies showing the percentage of men in HR teams, but it is easy to see in the dedicated events that the halls are mostly populated by ladies. Nothing wrong with that, just talking about diversity and gender balance is normal to ask where are the gentlemen in HR? There are also men, but not in large numbers, which is true.” (1–20)

Recruiting is often correlated with a good set of soft skills, including empathy and interpersonal abilities. In order to gather as much data about an individual, one needs to connect on a more personal level. Thus, women seem to be better at listening and asking the right questions. In this case, bias would appear if hiring managers should only take women into consideration for a position in their human resources department or if these managers would consider a man as not being good enough or even detrimental for the team altogether.

Another gender reference I found in the form of organizational diversity. What was interesting to observe was that managers were talking about diversity as a trend, not a normality or a necessity within a company:

*“Diversity hiring is a process of recruitment based on merit without any biases related to candidate's age, race, gender, sexual orientation, religion, and other personal characteristics that are unrelated to their **job performance** (...) For companies, diversity hiring is a trending topic, and including it is a top priority for companies.” (2–8)*

The necessity appeared when hiring managers realized it could be profitable in terms of money and performance, as teams with different backgrounds and experience might bring added value to the whole organization. Competition between companies can begin on any ground and it can be fierce and sometimes even destructive.

“With ethnic and cultural diversity, top-quartile companies are most likely to outperform their competitors on profitability by 33 percent. Less diverse companies are losing money. (...) Organizations with less gender and ethnic diversity perform 29 percent lower than their competitors.” (2–8)

In addition, the public image of the company is enriched if it is perceived as tolerant and inclusive. A diverse environment can be as good for business as it can be good for employers. The topic of discriminatory behavior was under scrutiny the last few years and companies are doing everything in their power to prevent any legal actions or even rumors in regards to their internal policies regarding protected groups.

“Organizations that adopt diversity hiring create and grow their talent pool. Vacancies in such companies will attract a more comprehensive range of candidates with different backgrounds. Hired employees, regardless of their gender, age, ethnic origin, are happier for being accepted and appreciated for who they are, and a cheerful workforce is more productive.” (2–8)

By having happier and more engaged employees, in a diversified team, the company benefits even further when it comes to hiring new workforce through algorithmic recruitment. As algorithms are programmed to learn from past experiences and personal preferences (people like other people with similarities in behavior or background), it is best to have a wider range of examples. Encouraging companies to disregard gender or other discriminatory criteria was found as a common practice in both journals.

When it comes to gender diversity in managerial positions, opinions might vary. Some companies might consider women too emotional for a leadership role (1–10), while others consider a balanced gender combination to be a blessing for the company’s profitability, culture and overall fairness:

“According to a report published by Catalyst, in 2018, women accounted for 4.8 percent of Fortune 500 CEOs and less than 11 percent of Senior Management leadership roles (...) According to Kelly, the problem is often attributed to the company culture, policy, or the lack of understanding of the balance that a company needs with gender in their leadership team.” (2–16)

Once the fact that gender diversity might be a key element for a good performance, companies might begin to take active steps in this direction:

“The complementary programs that we’ve created to help organizations transform their culture, and senior leaders to recognize how to be more inclusive of women, are also going to play a crucial role in helping organizations succeed.” (2–16)

On the other hand, the lack of diversity can lead to algorithmic bias that can be harder to detect or correct: “41 % believe that the lack of gender diversity in the area of talent can create bias in machine learning” (1–24) or it might even produce “group-thinking” (2–12). Professionals are talking from their own experience what measures they have taken in order to secure their procedures and to enrich their talent pool. Both internal or externalized training or workshops (2–4, 2–16) might help monitor and improve the overall development. Not only do employees work better with similar people, but also clients might be more satisfied if they connect personally with the worker.

“Combating algorithmic bias starts with more diversity and inclusion training and initiatives. Organizations can and should also implement clear governance practices for robust monitoring and transparency and they can extensively test their algorithms, so that any bias that slips past the development teams can be weeded out in the testing stage.” (2–4)

Given the fact that there were no other markers for bias or for gender discrimination in the articles included in the analysis for the two journals, I conclude by saying that in the professional discourses of workers in HR, gender was not a frequent issue to debate upon, either because not much attention is given nowadays to the problematic of gender or because their online reputation prohibits further inquiry. Individuals might censor their discourse as to prevent suspicion of discrimination. The absence of gender issues from debates or from spoken experiences does not necessarily mean it does not exist; it could indicate that the problematic is still being hidden from the public eyes.

Another interesting finding was that there is still some difference in pay based on gender:

“Perhaps the more direct counter argument of pay transparency is: to many people pay information is a personal information and should be treated as confidential, disclosing personal pay information will be viewed as violation of privacy, regardless of the impact to overall organization.” (2–17)

On the other hand, employees might not disclose internal policies because of the confidentiality agreement they signed or because they are afraid of further repercussions (e.g. getting laid off, lawsuits):

“The concept of forced resignation is not known in Romanian law. Consequently, the provisions of the Civil Code apply. They stipulate that a consent is vitiated when it is given in error, caught by deceit or snatched by violence.” (1–5)

More often than not, laws are not clear enough in Romania and people do not know their rights or what is the best legal action to take in a certain situation.

Therefore, problems like sexual harassment or forced resignation don't always undergo a clear path and people tend to avoid any complications. In addition, it can be really hard to prove that discrimination based on gender occurred, as biased language is almost never used in job ads.

GOING DIGITAL

The biggest complaint against using digital systems or algorithms is that data is not properly handled. People fear their personal information might go *into the cloud* – a way of saying it will be out of control, in a remote, third-party place. Since GDPR and other European or international policies, companies became more aware of this shared anxiety and started to pay more attention to private data or sensitive personal information (1–11, 1–12). In the era of digitalization and big data, privacy regulations are mandatory. The need for transparency and responsibility has been expressed by the majority of managers, as it is a sensitive topic in today's society. Data is being collected from almost every electronic device, social platform or google search, therefore individuals long for the feeling of security and protection. Thus, companies are constantly improving their policies in order to meet their demands and function within the legal boundaries:

“In addition to ethics and integrity, I think we need to talk about responsibility. Companies need to incorporate all of them into a set of values and principles. It needs to develop internal processes that make people accountable. They should govern the practices of corporations and transparently highlight the commitment to an ethical approach to AI and all AI-related practice.” (1–12)

People's privacy needs to be directly addressed and ensured by companies from an early stage in the recruiting process. Asking for consent and respecting some boundaries in terms of discretion are binding rules for the employer-employee relationship.

In regards to some basic HR processes being digitalized, I found multiple references to algorithmic usage in the screening phase or in other HR departments, such as payroll or personnel administration. Some managers consider digital systems and apps a necessity as *“traditionally HR has been a bit of a bureaucratic dinosaur (...) But the digital age has gone to the roof with people's expectations for access and immediacy” (2–1)*. When it comes to arguments favoring the transition to the digital world, time is frequently invoked (1–7, 1–13, 2–2, 2–21). Indeed, the recruiting process is consuming time and resources, as nowadays it can be pretty simple to apply for a job. In the screening stage, recruiters may benefit from digital help to sort and filter applications by predefined public criteria in order to get a sense of fairness.

“Digitization is no longer just a dream, but an everyday reality. The world is changing and with it the universe of work is transforming. The dispute between technology and humanity is like the creation-evolution controversy (...) In business, digital transformation and AI are intensely promoted, but of interest are also digitization, virtualization, robotization, automation, augmentation, disintermediation. Change has no exact beginning and no end.” (1-9)

<p><i>“Technology is a new resource in the HR department, which has almost unlimited computing capabilities, does not get tired, responds at any time and is always impartial. TotalSoft has developed a virtual personal assistant (chatbot) who will act as a ‘colleague’ from HR responsible for providing quick answers to questions such as time management, issuing certificates and other standard HR documents, personal data management, internal procedures or access to contact details of colleagues.”</i></p> <p><i>“Technology can be humanized, adapted to human behavior.” (1-11)</i></p>	<p><i>“I was interviewed by a practicing student about the future workforce – Generation Z. We were amused when we both realized that she was using a single device to take notes, ask questions, and record me while I was in front of a laptop, a phone and a diary.”</i></p> <p><i>“There have been many studies that have shown that people, alone, or cars, alone, are not as valuable or valuable as when we all work together. At Flex we talk about co-bots, industrial robots that assist our employees, whether they pick up materials at a workstation, or we talk about advanced software and “analytics”, which helps us find a quick answer.” (1-12)</i></p>
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The automation of work became necessary when computers and other technological developments started to creep in every aspect of life. Starting with the usual telephone and email, recruiters began using advanced software for a complete background check or chatbots to make their candidates feel important and unique from an early point in the recruitment process

A chatbot is a computerized personal assistant that can increase efficiency in the early stages of the recruitment process by keeping in touch with all the candidates at the same time. It can be programmed to answer or to ask simple questions – *“even at midnight or on any Sunday (...) immediate responses when they need them.” (2-18)* – to filter responses based on pre-established criteria, to post updates regarding the status of the process or to schedule next meetings. What is great about chatbots (or *co-bots*) is that they can offer recruiters personalized help without the candidate knowing s/he is talking to a machine. Thus, the company’s general image will be improved by its care for future employees.

Overall, the purpose is to bring digitalization closer to the people, within each level of the organization and to ease the global processes: *“digitalization means, in addition to bringing technology into the hands of every employee, a profound cultural change, a change in the way we relate to the use of technology, information security, the various levels of access to information, decision-making and communication in teams and between teams.” (1-22)* Having more people in

the decision-making loop might be more helpful altogether, as employees feel included and the internal flow is more fluid (2–13).

Speaking of what can be considered trendy and up-to-date in regards to the recruiting process are the online assessments. As appealing as they are to younger generations, they have to be sustained by user-friendly apps on common electronic devices, such as mobile phones or tablets. Consequently, the overall hiring experienced might be improved:

“A trend that is emerging more and more often in Romania in the HR industry is the gamification in the processes of recruitment, evaluation and selection, but also training, supported by mobile friendly solutions. Gamification aims to offer another experience to candidates or employees, more pleasant, more fun, to captivate them more, especially young people who have grown up with the virtual reality of the game.” (1–25)

Technology and digitalization also bring environmental advantages, as paper is being saved (1–17), since documents, CVs or even contracts of employment are now signed online (1–11), via email or other platforms. There are now specialized companies that provide exactly this type of service – such as the online signature (1–10). It is as if the whole world is moving “in the cloud!”

By all means, *“studies reveal that 80 percent of the world’s digital workforce is still remaining unused. This means the real digital revolution is yet to arrive”* (2–21), meaning that further developments are to be awaited. As in other businesses, human resources workers have to adapt in order to evolve and survive. In my research, I found some references to HR and IT as a unified force (1–18). Therefore, a good HR professional must improve its knowledge of the digital world, as well as constantly work on his/her interpersonal abilities and communication skills: *“In recent years, there is more and more talk about this new HR function, which is at the intersection of mathematics, behavioral science, psychology and technical knowledge.”* (1–18) Recruiters might face bigger challenges in the future, such as the artificial intelligence and how to incorporate it in their internal procedures, personal routines and daily tasks.

CONCLUSIONS AND FURTHER DISCUSSION

This article aimed to provide a comparative analysis on the discourses of professionals, who are active in the human resources field, in regards to the digitalization and how technological revolution impacted the process of recruiting.

Moreover, gender was brought forward in regards to organizational diversity as an adequate solution to algorithmic bias. To provide a good talent pool for future candidates in the hiring process, a starting point for coding the algorithm is to select an equal number of women and men, of different ethnicities and races, of

various ages. Organizational diversity could also prove to be beneficial for the company's public image and overall profit.

Both online journals that I analyzed offered a rather positive perspective in regards to the technological development and digital tools used in the human resources department. For product vendors, with a selling agenda and bonuses to gain, a public relations-oriented discourse was expected. What was interesting to notice is that, in their articles and interviews, HR professionals presented a highly optimistic view on digitalization and the future of work for recruiters, although digitalization and artificial intelligence might be the end of the hiring business, at least as we know it now, putting their own careers in jeopardy. Moreover, the quality of recent employees is not fully discussed, nor the trouble that human recruiters would encounter if all digital systems would collapse due to a malfunction. The amount of lost data could put a serious strain on the general flow of a company.

From a sociological point of view, debating the problematic of inclusion or exclusion, primarily in terms of gender and other fundamental social categories, is crucial to understand how algorithmic recruitment works. Little has been said on how well algorithms are verified and regulated against bias and unfair representation, as it is so hard to detect disruptions. The most common view on technology is that it has an objective and justified perception on us and it treats us fairly, irrespective of personal background, race, gender or social status. However, both the literature review and the concluding data from my paper show that technology can be just as biased as socially organized human beings.

Given that the professional discourses of the HR experts, at least in the studied journals, do not problematize gender bias and other possible sources of gender inequality, from data to algorithmic decision making (Criado-Perez, 2019), there is a risk that such bias will further become consolidated in algorithmic HR processes, thus reproducing gender inequality through the medium of digitization.

The overall technology-optimistic tone of the analyzed journals may signal just the fact that HR is at the beginning of its use of algorithmic process of candidate selection, or it may signal a wider propensity of the HR profession in relation to digital tools, particularly algorithmic processes. For sociologists, it is important to continue the study of HR professionals' awareness of bias and errors in their decision-making and the relationships between current technologies and practices of hiring, as they constantly reshape the labor market.

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