# Public relations and artificial intelligence: It's not (just) about robots

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A B S T R A C T

Organizations of all kinds, as well as their in-house or agency public relations teams, increasingly co-opt Artificial Intelligence (AI) to enhance their capabilities. This paper examines a relatively new topic that has received little scholarly attention: the growing relationship between AI and public relations. It outlines several key roles that AI may play in future, based on trends in other industries, and considers the implications for public relations practitioners, their clients and employers. It therefore launches a dialogue about the diversity and extent of AI's uses in public relations practice. The paper argues that, to date, commentators have placed too much emphasis on AI's potential for task automation; AI's broader technological, economic and societal implications for public relations warrant greater critical attention. This does not imply that practitioners need become expert technologists; rather, they should develop a sufficient understanding of AI's present and potential uses to be able to offer informed counsel.
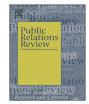
## 1. Introduction

AI is raising challenges for public relations that are new, but its origins are old. The roots of AI (as well as other mechanical beings) can be traced back to Greek mythology, as well as stories told in ancient cultures, including Egypt and China (Nahodil & Vitku, 2013). However, it is only since World War II that advances in computational technologies have made it possible to write programs capable of performing difficult tasks (AAAI, n.d., para. 2). The term 'artificial intelligence' dates from 1956, a productive year in which the first running artificial intelligence program was demonstrated (Nilsson, 2010). AI has been through "winters" since the 1970s; now, it is arguably in another of its "boom phases" (Chace, 2018, p. 10). It is attracting increasing attention in the promotional industries (public relations, marketing and advertising) as practitioners – and, somewhat belatedly, scholars – recognize its productive potential. At the same time, AI's growth is prompting concerns from individuals both inside and outside technology-based industries who question the impacts of the technologies, especially on jobs.

This paper argues that, in the public relations-focused literature, AI-enabled task automation is given too much prominence; broader technological, economic and societal implications in the field deserve more critical attention. With the development of new analytical techniques to help public relations practitioners, AI applications will extend to the whole context within which professionals operate. Isolating particular uses for AI and its related technologies runs a reductionist risk of obscuring broader perspectives. These wider viewpoints include considerations about whether, for example, AI-supported systems will narrow, or enhance, the zone of influence within which practitioners seek to advance their clients' agendas. Of course, this binary division over-simplifies a more

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complicated scenario in which new technologies work with more familiar approaches to public relations implementations. However, it does highlight broader perspectives to consider.

The public relations academy provides little scholarly material on the relationship between public relations and AI, though this situation is beginning to change. For example, for the first time, a recent international public relations conference offered three presentations on AI-related topics (Barcelona Critical PR Conference, 2018). Other scholars have touched on AI matters; however, their discussions have often been brief and tangential to their central arguments. For example, in examining the consequences of different technologies on public relations practitioners' work, Pavlik (2007) briefly discusses AI's use in monitoring news media coverage through systems employing natural language processing. Tilson (2017) interrogates AI in exploring the moral compass of public relations, arguing that AI entities and other automata will challenge the field's foundational concept of publics. In discussing public relations planning, Yaxley (2018) suggests viewing AI strategically as a tool that can free up practitioners' resources, allowing them to focus on other activities.

Yaxley's argument underlines the fact that task automation is a central theme in practitioner commentaries. Their subtext seems to be simply, "AI will make our lives easier," by simplifying chores such as media coverage analysis (see, for example, Kopp, 2017; Marx, 2017). Such commentaries cloud the prospect that, over time, AI may well dramatically change the entire landscape of practice, not merely selected contours of it. As Gebert (2018, para. 2) argues:

> Despite its broad appeal, the assessment that human-machine interactions are, and will continue to be, exclusively about augmenting humans or teams of humans and machines is short-sighted and underestimates the transformative potential of AI.

The augmentation of human capability is, perhaps, a less scary prospect than one in which machines dominate to the point where they might evolve beyond human control (see Bridle, 2018). Yet a truly transformational outcome for public relations may well be many years away, partly due to an "asymmetric" development process that is lopsided because "a few companies have disproportionate access to data and to the AI experts" (Sikka, in Knowledge@Wharton, 2018).

The remainder of the paper has seven sections, the first of which conceptualises AI in public relations contexts. This leads, in the second section, to a discussion of AI applications in PR, with a particular focus on moving the topic beyond robotization. The third section examines the notion of 'AI anxiety', which provides the basis, in the fourth section, for an appraisal of the relationship between AI and the professional context. The fifth section examines various roles and perceptions of AI in public relations highlighted in current popular public relations commentary, while the sixth section outlines several potential significant roles for AI based on key developments in other industries. The conclusion draws these points together with regard to theory development and professionalism, and suggests avenues for future investigation.

## 2. What is AI?

As AI is defined differently in different contexts, it is vital to conceptualize it in public relations terms. It is out of this paper's scope to detail the varying ways in which AI has been defined since the term's first use in 1956 (see Press, 2016). Recent descriptors include:

- "the ability of machines to perform tasks that typically require human-like understanding" (Knowledge@Wharton, 2018, para. 1),
- "a collection of advanced technologies that allows machines to sense, comprehend, act and learn" (Daugherty et al., 2018, p. 22), and
- "[a] sophisticated application of technology whereby a machine demonstrates human cognitive functions such as learning, analysis and problem solving" (Valin, 2018).

Drawing on these definitions, we conceptualize AI in public relations contexts as: technologies showing humanoid cognitive abilities and performing humanoid functions in undertaking public relations activities, independently or together with public relations practitioners. Discussions of 'synthetic Intelligence' – a concept that refers to systems that "incorporate and 'synthesize' information from multiple sources at scales that are not fully perceptible to humans, and therefore beyond their direct control" (David & Endicott-Popovsky, 2017, p. 311) – are outside the ambit of this paper; however, we recognize that this high-powered harmonizing could become important for public relations in future.

Various examples show a range of current AI applications. For example, Marx (2017) notes that some public relations agencies have started to use AI for tasks such as monitoring social media and predicting media trends. Practitioners also employ widely available AI-based tools such as Buzzsumo, Trendkite and Hootsuite for social media analysis, while others are developing their own AI tools. Jeske (in Dietrich, 2017) explains that his firm, a Search Engine Optimization agency, has created an app that uses AI and machine learning to undertake client work, including outreach and publicity. It has trained its software to score HARO (Help A Reporter Out) requests based on factors such as the desirability and authority of a media outlet and the likelihood of a particular journalist or outlet including a follow link. The app also analyzes a site's data and mines it to find promotional opportunities based on the site owner's goals.

## 3. Beyond robotization

While AI will – and, indeed, has already begun – to play varied roles in public relations, many practitioners' thinking still appears to revolve largely around robotization. Debates about the robotization of professional occupations like public relations are important

(see e.g. Meltzer, 2014); however, they can ultimately become distracting. Robots do often come to mind when one hears about AI, and especially 'machine learning'. These 'intelligent' machines can now undertake everything from some surgical tasks in hospitals to room service delivery in hotels. However, it is necessary to distinguish AI from robotization and machine learning. As Marr (2016) clarifies, AI is the broader or umbrella concept that (in line with the definition in the previous section) describes machines' execution of tasks in ways that mimic human intelligence. Machine learning is a more specific application of AI based on enabling machines to access data and learn for themselves. Popular discussions of AI often (erroneously) encompass both concepts.

The rise of AI – and, specifically, robotization – has led to fears not only about potential job losses, but also about ethical issues and a possible future in which humans are, to some degree, controlled by technologies supposedly smarter than they are. Such anxieties need calming; the more realistic scenario is that "automation will eliminate very few occupations entirely in the next decade" and, instead, will "affect portions of almost all jobs to a greater or lesser degree, depending on the type of work they entail" (Chui et al., 2016, para. 2). Public relations practitioners are unlikely to interact directly with robots, or even to be replaced by them; a 2018 Chartered Institute of Public Relations report suggests that only a minority of public relations tasks are susceptible to automation (Valin, 2018).

One need not look far to find the varied roles that AI is already playing in public relations activities. Organizations are rapidly looking beyond robotization and using AI-based technologies for storytelling and subscriber analysis, while AI-enabled workflow management systems and platforms for managing visual assets already help organizations and their clients (Sennaar, 2017). Augmented Reality (AR), Mixed Reality (MR) and Virtual Reality (VR) all use AI, too; however, these increasingly sophisticated technologies require separate critical evaluations and, therefore, are not discussed further here.

AI's future evolution, and its use in public relations, is likely to be quite disparate. AI development will probably parallel the continued application and enhancement of older technologies; however, in some areas, progress is blindingly fast. For example, the research company Gartner, Inc. predicts that, by 2022, 80 per cent of smartphones will have on-device AI capabilities: a stunning rise from 10 per cent in 2017 (Gartner, 2018, para. 2). AI integration with mobile devices, in particular, already serves functions such as photography, image recognition and basic decision support; Apple Inc. reportedly sees its mobile devices as a major platform for AI (Yu, 2017, para. 1). As the technology matures, more advanced capabilities employing heuristics to support users' decision-making will impact public relations. Arguably, a more sophisticated Siri, Google Assistant or counterpart might either limit public relations' ability to fulfil its persuasive mission or, alternatively, expand its persuasive repertoire. Should its repertoire be enlarged, practitioners' responsibilities for using the technologies ethically will also expand, and educational courses and materials will need to help learners come to grips with these new responsibilities. We may be three or four years away from being able to identify outcomes in this area with any confidence.

Nevertheless, public relations practitioners do not need to become expert technologists. Rather, they should develop a sufficient understanding of AI and related technologies to be able to offer informed, workable advice to clients. Unfortunately, they may find little guidance in theories; internally, the domain of AI itself remains a "paradigmatic mess" (Chandrasekaran, 1990, p. 14). While Kuhn's theory of paradigm shifts (Kuhn, 1962) and Rogers' diffusion of innovation theory (Rogers, 2003 [1962; Rogers, 2003 [1962]) are helpful in assessing AI's present state and its possible future, thus far, there is no unified theory that draws together the varying perspectives on AI development. In public relations, Ledingham and Bruning's (2000) explication of public relations as relationship management is not a sovereign remedy, even though Ledingham (2009) has presented it as a general theory of public relations.

Education (self-initiated, or otherwise) will be key to helping public relations practitioners remain aware of the latest developments. In the short term, practitioners should seek training about the key aspects of artificial intelligence and its uses. In the long term, they should build on this foundational knowledge and ask critical questions about the roles that AI will play. One such vital question will be: will stakeholders, in future, care whether they interact with, or form a relationship with, a human or with a human-like machine? There are indications that, at least in areas such as customer service delivery, people are somewhat agnostic. One start-up company claims that its conversational analysis tool delivers "real-time emotional intelligence" and increases customer satisfaction by 28 per cent (Walker, 2018, para. 17). But will a machine, even though it can accurately record a conversation and "remember" a customer the next time that she or he calls, be able to go farther and generate a non-task-related interaction that could help cement a meaningful connection? The answer might well be "yes".

## 4. AI anxiety

Commentary about the future impacts of AI on public relations points to the 'AI anxiety' that many individuals, including practitioners, have begun to recognize. This phenomenon refers to the "fear of the stability and the capabilities of AI" (Johnson & Verdicchio, 2017). Gregory (in "Eminent professor", 2018) has tapped into this concern by raising questions, especially ethical ones, about "the impact of artificial intelligence and the robotization of the PR and communication professions". She asks: "What do they mean when the robots take over. Do we have a code of conduct for robots? How do we teach them ethical behaviour?". Yet a Chartered Institute of Public Relations study found that 59 per cent of public relations skills are "predominantly not candidates for AI" (Valin, 2018, p. 7).

In this light, it is arguable that worries about robotization are, at least for public relations, less significant than the profession's more immediate need to acquaint itself with broader societal and economic AI impacts. The outcomes may affect both client and employer *modus operandi* and practitioners' ability to offer informed counsel. In 2015, a McKinsey team showed that even then-existing technologies could automate 45 per cent of paid activities, while "about 60 per cent of all occupations could see 30 per cent of their constituent activities automated" (Chui et al., 2016, para. 4). The authors (para. 7) also noted that:

Even when machines do take over some human activities in an occupation, this does not necessarily spell the end of the jobs in that line of work. On the contrary, their number at times increases in occupations that have been partly automated, because overall demand for their remaining activities has continued to grow.

Totalizing approaches to AI can be misleading. As McGeady (2017, para. 3) notes, "this whole AI conundrum [is] about the collaboration of human and machine, not the supersedence of one over the other". Notwithstanding, public relations needs to accept that AI is not only here, but also that professional consequences are coming, whether we are all ready or not.

## 5. Professional context

Engaging with AI and its ramifications, present and putative, in the professional context is a non-trivial exercise, involving a range of complex factors. In the case of public relations, these elements are related to the fact that practitioners must deal with "ill-defined or wicked" problems "best solved by the support of a cooperative problem-solving approach [that combines] knowledge-based systems and innovative human-computer communications techniques" (Fischer & Nakakoji, 1991, p. 15). (On public relations and wicked problems, see, for example, Brunton & Galloway, 2016.) Using AI to analyze large datasets may help with scoping wicked problems, but – as Fischer & Nakakoji (1991, p. 192) point out with reference to design – the key issue is to understand the nature of the problem itself, a comprehension that may develop only in iterative steps. As they explain:

In many cases, humans are initially unable to articulate complete requirements for ill defined problems. Humans start from a partial specification, and refine it incrementally, on the basis of the feedback they get from their environment.

This analysis suggests that an expanded role for technology support might help public relations specialists in tackling wicked problems. It could do so by providing a more comprehensive review of available data and its implications than individuals can manage on their own. As a pointer to some of the possibilities, and in view of the scarcity of academic analyses, the following section collates several of the key themes and ideas about public relations and AI offered by the non-scholarly literature.

## 6. Roles for AI in public relations

This literature contains an assortment of perceptions and prognostications about AI and its role in public relations. Some are supportive, while others are cautious.

- Public relations relies on establishing relationships between brand and stakeholders through "personable interaction": something that Scott (2018, para. 9) asserts is absent when AI delivers messages. He argues that the result can be "lower perceptions of transparency and authenticity" from publics.
- If public relations is "the discipline which looks after reputation" (CIPR, n.d., para. 5) and reputation is linked to trust (see, e.g., Dolphin, 2004), it can be argued that: "Humans build trust with humans – not bots" (Ristic, 2017, para. 10).
- Supervised learning algorithms with solid training data might be able to manage some social media promotion, thereby allowing some social media engagement to be scaled (Lynch, 2018, para. 15).
- Lynch (2018, para. 16) also suggests that AI may be able to search for clues about "the sentiment of earned media coverage, sending alerts about negative stories the minute they appear so PR professionals can respond more quickly".
- Valin (2018, p. 7) notes that while human critical thinking abilities "will be least impacted by AI", other skills – such as those to do with basic research, content development, program evaluation, issues tracking and many work processes – already feature some AI.

One of the common themes in the popular literature is the notion that AI cannot replace human creativity. For example, Ristic (2017, paras. 8 & 10) contends that:

PR requires creativity, the type of thinking that machines, not yet at least, are capable of superseding—such as ensuring tone of voice or messaging of written communications or executing a creative stunt … A bot can't lay claim to emotional intelligence, a cornerstone of all PR work.

However, Amos (2016, para. 7) challenges the idea that creativity is "a uniquely human endeavour that cannot be deconstructed and replicated by machines". He argues that "it's simply not true. Computational creativity is one of the most vibrant areas of AI research, and algorithms have been developed to in- dependently compose music, write poetry and develop new recipes" (2018, para. 8). Indeed, the increasing use of algorithms – that is, mathematical instructions or equations that "directly govern the behaviour and function of data" (Lash, 2007, p. 70) – has led Collister (2015a, 2015b) to characterize contemporary public relations as 'algorithmic public relations'. This, he argues, is a field in which "computational processes play a central – and largely invisible – role in the identification, determining, analysis and dissemination of strategic communication" (2015b, p. 7). However, algorithmic public relations is not without its perils. Collister (2015b, p. 19)Collister, 2015bCollister (2015b, p. 19) points to the possibility of bias occurring in the use of algorithms to sort and rank data that function as indicators for a variety of factors relevant to public relations; as he points out: "The reputational status (and financial performance) of an organization is arguably directly affected … by algor-ithmically-driven ranking systems such as those used in crowd-sourced review systems on sites such as Amazon, TripAdvisor and Yelp."

AI can also help public relations practitioners deal with individuals' emotions as they plan implementations. Mcstay (2018) argues, with reference to emotional intelligence, that media technologies' increasing ability to interpret feelings, emotions, moods, and intentions results in 'emotional AI', a technological form of empathy. This form of AI is suitable for many uses, among them improving services, enhancing health, developing new forms of entertainment, and managing workplaces. All of these functions depend on the 'capturing' of emotions; however, as McStay points out, capturing can also refer, more sinisterly, to something being taken into possession by force: a significant issue that both AI developers and users of the technologies will need to confront.

## 7. More roles for AI in public relations

The assortment of roles that AI can play in public relations listed in the previous section is only the tip of the iceberg. An even greater range of roles can be identified by examining the most significant parts that AI is currently playing, or will soon start to play, in other industries.

Based on the fact that AI is now being used in fields such as defence and security to make sense of seemingly incipient and volatile phenomena – such as predicting the size, geographic distribution and timing of attacks in warfare – the technologies could also be used to help organizations manage their reputations and engage in issues monitoring more successfully. This activity would draw on AI's unique capability to provide deep insights; as Gourley (2018, para. 6) comments: "[t]he most interesting thing about Artificial Intelligence is not its ability to mimic human intelligence, but its ability to see the world differently than us." Therefore, AI could process and identify patterns in enormous volumes of seemingly disparate data that would help organizations act on potential risks and looming issues that could affect their reputations.

In view of IBM's newly-released technology – titled Project Debater – that enables machines to argue with humans (Kelleher, 2018), it is plausible to suggest that AI could support public relations managers in their roles as organizations' counsellors. An AI tool would do this, for example, by acting as a sparring partner with the manager, taking on the role of a devil's advocate, and helping the manager prepare for the types of discussions and arguments that she or he will have with the senior leadership team of an organization. AI 'discussants' could also aid public relations practitioners in a variety of other areas: for example, in preparing for media conferences, as well as campaign planning sessions involving any kind of brainstorming or debating among participants.

AI is likely to play a role in teaching public relations. As educational commentators such as Matthews (2018) point out, AI is already being used effectively to help teachers complete relatively straightforward tasks, including answering basic questions during lessons, tracking individualized learning, marking assessments, and even setting work. Additionally, although AI is presently ill-equipped for "teaching the nuances of Shakespeare" (Matthews, 2018) – and, by the same token, teaching the nuances of public relations – its use in basic teaching processes can help free teachers to focus on so-called 'soft skills' (such as social intelligence, resilience, character and negotiation skills). Such soft skills are now recognized as one of the essentials for a successful career in public relations (see, for example, Kane, 2017).

Given that AI is already used to help tackle pressing environmental problems, the technologies could also be enlisted to help organizations deal with issues and crises more effectively. As Harris (2018) reports, AI is being employed, along with drones, to detect significant areas of plastic pollution in oceans. In the same way that AI is distinguishing marine life (such as jellyfish) from plastic, it could also be used to identify the causes or contributors of particular issues and crises facing organizations, by undertaking, for example, real-time analysis of shifting social media sentiment.

In addition to these specific roles, AI would play the more general part of making public relations practice more efficient and affordable, thereby improving an organizations' bottom line. This is certainly the situation in other industries. For example, AI is expected to benefit healthcare by minimizing inefficiencies, and ensuring more streamlined and cost-effective health ecosystems. Currently, between 20 per cent to 30 per cent of healthcare spend is wasted globally each year, due to preventable and rectifiable system inefficiencies, including improper care delivery and over-treatment (Bernaert, 2018). Similarly, AI could help the public relations industry identify points of inefficiency and minimize wastage of different kinds.

## 8. Conclusion

Given AI's relative nascency, it is not yet possible to reach definitive conclusions about the depth and breadth of this set of technologies' impacts on public relations. Concerned practitioners, commentators and researchers' warnings are appropriate as the profession charts this unexplored territory, even as it may struggle to grapple with AI's implications for how professionalism is to be understood in the coming years. For example, if a given public relations activity is essentially performed by automated systems, who (or what) is to be held accountable for the outcomes? At the same time, the optimism of those who foresee the benefits that AI will bring to individuals, organizations and to the field itself remains valuable.

AI may also affect public relations theory development. Until recently, humans have been the sole originators of messaging, and theory has revolved around understanding how their activities take place and which barriers prevent effectiveness, among other considerations. The advent of AI now means that humanoid-like technologies can operate for extended periods without human intervention, making their own decisions and acting independently. The technologies will also be able to employ advanced analytics to optimise message reception and retention. Therefore, at the very least, public relations theory will need to encompass the role of AI-driven systems in augmenting human communication. Such developments deserve recognition in public relations curricula *now*, in the face of accelerating AI implementations both within and outside the public relations field, with their attendant demands for informed public relations counsel.

One development is certain: as this paper has argued, it is important to realize the multiplicity of roles that AI is beginning to play

in public relations, and will play in coming years. These roles extend well beyond task automation. They also generate a host of technological, economic and societal implications that public relations should begin to consider. This paper has outlined some of the different roles and their implications for public relations – both positive and negative – drawing on current knowledge and research. It has also, based on developments in other industries, highlighted major several areas in which public relations practice could exploit AI in future.

Examining present and potential AI developments opens many avenues for future scholarly developments. As importantly, it launches a dialogue about the extent and diversity of AI's uses in public relations practice, and the likely resultant impacts. In the coming years, it will be imperative to determine the extent to which the technologies are being put to public relations-linked uses – or, indeed, to identify other uses – and to understand their impacts. This will entail close scrutiny of industry and practitioner developments as they emerge. It will also be vital to understand better how practitioners can make full and effective use of the new tools at their disposal, and to identify the features of good and best practice of AI in public relations. Scholarship will benefit from interpretive and rhetorical studies that help us understand, for example, how practitioners discuss and perceive AI, and what symbols and meanings are associated with the technologies. Critical studies are also required to help the profession understand how AI contributes to existing power imbalances and forms new ones. Such studies could also help identify how practitioners – and which ones – could resist, and work to change, the unequal power dynamics that AI can engender.

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