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Center for Leadership in the Future of Work

The funny thing about robot leadership

Summary

What we found: Recent advancements in robotics are increasingly equipping machines with social skills, even complex abilities such as humor. We describe how robots equipped with soft skills could take on leadership tasks in the future.

Why it matters: Experts often presume leadership tasks are 'safe' from automation, as well as other jobs that require more advanced social and emotional skills. But this is changing rapidly, offering new possibilities for incorporating technology at work.

What next: Rather than trying to 'save' leadership from automation, we should consider how socially skilled robots might take on some tasks to allow overburdened leaders to better focus their time.

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The Funny Thing about Robot Leadership…

Are today's employees getting "soft"? All signs suggest that employees should: soft skills may be the necessary advantage modern employees need to survive and thrive in the future of work. Recruitment experts and professional organizations alike predict that soft skills such as emotional intelligence, creativity, and social influence will increase their value in the coming years. Strengthening soft skills is touted as "one of the best investments one can make in their career." For leaders in particular, gaining soft skills is seen as essential for the future. Underlying these bold claims is the assumption that artificial intelligence (AI) and AI-powered robots cannot–and will not–approximate humans' soft skills mastery, as the same voices broadcasting the soft skills reskilling imperative for the "future of work" claim, "the rise of AI is only making soft skills increasingly important, as they are precisely the type of skills robots can't automate" and "with the rise of robots comes the rise of soft skills". But is the widespread assumption that "robots don't have soft skills" accurate? Or could robots soon step into roles where soft skills are imperative – even leadership roles?

AI-powered robots are already effortlessly taking over some management roles in notable organizations. For example, Ray Dalio, founder of Bridgewater, openly discussed the "Book of the Future" they were developing to provide employees with "GPS-like directions" throughout the day, including how they should spend their time down to details like making a phone call. Amazon already replaced their front-line managers with robots that track employee productivity and even dismiss underperformers who fail to meet their quotas. But when experts forecast that "AI will redefine management", their number one projection is AI will take over administrative tasks. In contrast to management, which includes administrative and organizational tasks, leadership implies a more dynamic process of social influence. While management features tasks such as monitoring employees and tracking their performance, leadership is more motivational, including uniting followers for a common cause and inspiring employees to perform better. This is a key distinction, because people generally agree–and overwhelmingly expect–that AI will take over management tasks (and to be honest, who *doesn't* want AI to take over their paperwork?) But while we already clearly see examples of how robots (and AI) can function as managers, could they be *leaders*: could they gain the social and influential skills necessary to take over leadership tasks?

In fact, AI-driven technology increasingly rivals people on soft skills touted as uniquely human. Take emotional intelligence. iMotions has developed an algorithm that can read human emotions through facial expressions, and Sophia, an AI-powered humanoid robot (sometimes assisted by humans) can observe and understand human emotions – and even react by expressing emotions of her own. This ability to recognize and respond to others' emotions fits the definition of emotional intelligence precisely, so these non-humans seem well on their way to developing this skill. Some efforts are exploring whether machines can master other complex soft skills such as humor. Sophia, for example, cracks jokes on the Tonight Show with Jimmy Fallon like a robot celebrity, and the company Marilyn Monrobot develops social robots like Data, the robot stand-up comedian who responds to audience feedback. Researchers have created computer programs that can generate their own humorous acronyms, parodies of song lyrics, and puns (like: What do you get when you cross a monkey with a peach? An *ape*-ricot). And just last year, computer scientists in Germany created the irony bot: a robot skilled at doling out original sarcasm. This suggests that AI-powered machines can indeed develop the sense of meaning and sensitivity to context that is necessary for skills like humor.

Why is it meaningful for robot leadership if robots get a sense of humor? Funny AI is impressive because humor requires several soft skills–creativity to combine seemingly unrelated concepts in a funny way and emotional intelligence to deploy it in an appropriate context, as well as to evaluate and respond to feedback. Unlike other soft skills such as creativity, acts of humor are inherently social, even ingratiatory and influential. Experts even pinpoint humor as key in Turing tests, or testing AI by seeing whether a person who interacts with it can determine that they are interacting with a machine rather than a fellow human. Given this, humor can be thought of as an extreme demonstration of whether robots have the socioemotional skills necessary for leadership. If robots can master humor, this suggests that they could be positioned to step into more-human roles that require exemplary soft skills, like leadership roles.

Further, robot humor should increase people's willingness to work with and even follow machines. Robot managers may risk making workers feel like they are 'just a number', but with soft skills, robots may seem more human and avoid this issue. Robot humor could also improve the results of machine leadership. If it is successful, humor enhances social influence – as we've noted, a key aspect of leadership. More generally, leaders who successfully use humor are viewed as more leader-like, they are more effective, their employees and teams are more effective, they have better relationships with their followers, and they are more likely to be selected for subsequent leadership tasks. Because successful humor exemplifies a soft skill that also requires a mastery of multiple other soft skills, it is a behavior that increases success in specific leadership tasks while also improving leadership perceptions and performance more broadly. Based on this evidence, robots that can skillfully use humor are more likely to be both perceived and responded to as leaders.

Some examples illustrate how humorous robots could effectively take over tasks from human leaders. Irony bot's designers explicitly armed their robot with sarcasm to increase its likeability and acceptance to perform its core task of delivering negative feedback–which, as irony bot might put it, is certainly one of the most prized and exciting tasks that leaders would *surely* be *devastated* to hand over to robots. In all seriousness, as giving negative feedback is one of the most difficult and emotionally draining tasks for human leaders, having humorous robots play a role in this task could be a boon. While the idea that bad news delivered with humor eases the blow seems intuitively reasonable, research also supports this idea. For example, Pete McGraw and colleagues found that negative, 1-star reviews like those on Google or Yelp were deemed more positive when made with humor. Similarly, Brad Bitterly and Maurice Schweitzer found that acknowledging a personal weakness with humor made the admission seem less genuine, protecting applicants' positive impressions from taking a hit when admitting a flaw in a job interview. So humorous robots are tapping into an effective social strategy that makes them able to handle difficult situations.

Indeed, humor is a strategy for skillfully dealing with a wide variety of situations that arise at work, including some of the most challenging ones. In the words of two humor scholars, humor can be used "to criticize without alienating, to defuse tension or anxiety, to introduce new ideas, to bond teams, ease relationships and elicit cooperation." Using humor could thus open up new doors that were previously thought shut for robot leadership: from providing critical feedback as part of an annual performance review, to confronting discriminatory comments or behavior, to arbitrating a conflict between co-workers, to employee onboarding and team-building.

What could the world look like if socially-skilled robots step into leadership roles that we normally reserve for *homo sapiens*? Let's consider some pros and cons.

Pros

1. **Cutting down leaders' to-do lists:** Socially-skilled robots don't necessarily have to *replace* leaders. Advocates of augmented intelligence propose that AI should be implemented in ways that enable humans to achieve more and complement human intelligence, rather than independently functioning and taking over human tasks. Building on this idea, robot leaders who master skills like humor could be made responsible for some of the less-desirable or less-meaningful tasks that leaders face – like our example of giving negative feedback – and help leaders to manage their consistently-too-long to-do lists.
2. **Stepping in for "bad" leaders**: We can all think of examples of people who were in leadership positions, but who lacked critical socioemotional skills or leadership training and handled situations poorly, or who didn't seem to consider themselves as leaders and failed to act as such. Leaders who act in socially destructive ways, or even who simply don't provide leadership, damage both followers' and organizational outcomes. In fact, more damage may be done by bad leaders than good is incurred by good leaders. Thus, organizations and the people they employ may make particularly notable gains if robots either step in to take over some tasks from or replace managers who don't effectively lead.
3. **Improving human interactions**: Robots lack the social inhibitions that humans often have – for example, when it comes to admitting our mistakes at work. So socially-skilled robots could act in ways that helpfully nudge humans. For example, a series of experiments found that robots who admitted their mistakes in a humorous way ("I know it may be hard to believe, but robots make mistakes too!") during a group task helped the humans in that group to communicate and collaborate more effectively with each other, and also prevented people from getting stuck during problem-solving, thereby increasing team performance.
4. **Reducing bias**: Robots and the AI that fuels them are not perfect, but they may be less biased than their human counterparts. With the proper safeguards in place, one can also interrogate particular decision processes in algorithms to investigate potential cases of bias and discrimination–an impossible feat for human decision-makers. So robot leaders may be fairer and more transparent than humans in terms of prominent gender and race-based biases, which entails advantages for leadership effectiveness. Despite its higher rationality, though, AI can also come to biased *conclusions,* for instance, if it draws on biased datasets. So in cases like this, a blend of robot and human leadership may be the optimal solution.

Cons

1. **Machines and mortals are not (yet) created equal**: Even though AI might be able to effectively engage in leadership tasks, the human targets of this leadership may not respond in the same way as to a human leader. People prefer interacting with humans over AI, and treat AI differently from humans (as long as they know about a bot's true identity). While robots may be able to objectively acquire the socioemotional skills necessary for leadership, people may not feel that these behaviors and the feelings that underlie them are authentic, but rather simple imitations of human skills. For instance, negative feedback may feel less thoughtful and considerate, and ultimately have less of an effect on employee behavior, when it's presented by a robot rather than a human. Thus, socioemotional skills may be less impactful when they are enacted by robots rather than humans, making robot leaders less influential than

human leaders. (However, there may nonetheless be a powerful role for AI as an 'invisible leader' – such as when Netflix uses algorithms to guide your choices and behaviors in a subtle and implicit way.)

2. **Making human leaders obsolete**: In contrast to the clear advantage of replacing leaders who lack socioemotional know-how, if it automates an entire profession, AI may also (inadvertently) replace leaders who have highly developed socioemotional skills and had a positive effect on followers and within their organizations. Thus, some leaders who were inspiringly effective may have to look into continuing education or re-training on more technical, hard skills to craft a relevant space for themselves within their profession.
3. **Social robots ≠ social interactions**: People are social creatures who crave interactions with other humans. So, if one's workplace represents a key source of an employee's social circle, they may particularly miss social interactions if their leader is replaced by a robot. This may particularly be the case for remote employees (due to the COVID-19 pandemic or otherwise) for whom the leader is often a primary or sole social contact, reducing a central source of social contact during an already trying time for many. Although social robots have shown success in other areas (e.g., elderly care), they are an insufficient replacement for *all* social interactions.
4. **Diminishing returns**: If robots' soft skills such as humor elicit positive effects at least in part because they are surprising–not only because they are effective–they may lose their punch over time. However, if robots are at least partially autonomous, they may continue to learn and improve their soft skills in unexpected ways with more interaction and experience. Yet again, this kind of unsupervised learning tends to lead people to distrust robots and might ultimately undermine human-robot interaction quality. Thus, only time will tell…

As robots increasingly master soft skills such as humor, they become more like humans *and* leaders. Moving forward, we should consider how these gains in soft skills can increase robots' "leadership potential," into which of leaders' (many) everyday tasks these robot leaders could fruitfully be incorporated, and how we could take advantage of these technological advances to improve the way that leadership is enacted at work.

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