Power and Decision Making: New Directions for Research in the Age of Artificial Intelligence

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Abstract

Throughout history, the experience of power has occurred within the context of human-human interactions. Such power can influence decision making through at least two primary mechanisms: 1) increased goal-orientation, and 2) increased activation of social role expectations. Importantly, new advances in artificial intelligence (AI) are creating the potential to experience power in human-AI interactions. To the extent that some forms of AI can be made to seem like low-power humans (e.g., autonomous digital assistants), people may feel powerful when interacting with such entities. However, it is unclear whether feeling power over AI will lead to the same psychological consequences as feeling power over humans. In this article, we review findings on power and decision making and then consider how they may be meaningfully extended by considering interactions with artificially intelligent digital assistants. We conclude with a call for new theorizing and research on power in the age of artificial intelligence.

1. Introduction

Scholars have long sought to identify the psychological factors that influence how people form judgments and make decisions. One such factor is the degree to which a person feels powerful at the time of the decision [1]. Power is defined as a state in which a person has disproportionate control over valued outcomes [2], allowing the powerholder to influence another's thoughts, feelings, or behaviors [3]. In other words, power is a social construct, experienced within the context of one's relationship to other people. However, advances in artificial intelligence (AI) could bring new opportunities to experience power. For example, people may feel high power in relation to a humanlike autonomous digital assistant. In the present article we will examine the relationship between power and decision making in human-human interactions and then explore how perceived power over AI is creating opportunities for new research and theorizing on the psychology of power.

2. How Power Affects Decision Makers

Psychologists have provided a great deal of insight into how power shapes behavior [4, 5, 3, 6]. These findings indicate that power's effects depend on the states and traits of the decision-maker as well as their social context. In the current paper, we review how power influences judgement and decision making specifically by altering one's mindset and by introducing role-based expectations.

2.1. Power and Goal-Orientation. A wide range of studies has demonstrated that experiencing power leads to beliefs and perceptions that facilitate goal pursuit [3, 7, 8]. For example, powerful people are more likely than others to perceive rewards and less likely to be vigilant to threats and situational constraints [9, 10, 3, 11, 12]. Powerholders also tend to adopt an independent self-construal whereas the powerless rely on others and tend to be more

communal [13, 14]. Further promoting goal pursuit, the powerful experience physiological changes that facilitate action [15, 16], and enhance persistence [17, 4].

Scholars have argued that power may lead to these and other agency-enhancing effects by elevating the sense of control [18], leading to enhanced self-perception as well as agentic and overconfident decision making [19, 20, 21]. Relatedly, powerholders tend to discount advice from others [22, 23], make quicker decisions [8], and perceive that they have more time than they actually do to accomplish their goals [24, 25]. Power also leads to enhanced perceptions of social support [26, 27] and buffers against the goal conflicts that low-power actors often experience [28].

In sum, the experience of power facilitates a desire and propensity to pursue goals. As a result, decision makers who feel powerful are more likely to express and pursue goals that are salient in the moment [29, 30, 31, 7, 8, 32, 33]. Whereas such goals are often based on internal factors (e.g., personality, psychological states), in the next section we examine how features of the situation additionally shape goals for the powerful.

2.2. Power and Social Role Expectations. A social role refers to the set of descriptive and prescriptive expectations associated with a particular position (e.g., manager, secretary) or social category (e.g., gender, race) [34, 35]. Due to the desire to avoid negative judgement by others, those enacting social roles often experience pressure to fulfill their role-based expectations [34, 36]. Social role expectations have been theorized and shown to influence the judgement and decision making processes of individuals with power [37, 38, 39, 40, 41]. For example, Joshi and Fast [40] found that infusing roles with power led to increased identification with the roles as well as behavior that was consistent with the relevant role expectations.

A particularly strong expectation of the powerful involves the need to demonstrate competence [37, 1]. Competence, or the ability to influence people and outcomes in desired ways [42, 43] is often presumed to be present among those filling high-power roles [44]. Similarly, people ascribe and afford power to those who signal competence via displays of dominance and confidence [45, 46, 47, 48, 49, 50, 51]. Importantly, people expect competence among powerholders in a *prescriptive* manner as well, leading the powerful to experience ego threat and engage in various forms of compensatory defensive aggression when they are unable to meet this expectation [37, 52, 38].

It is important to note that social role expectations can have positive and even prosocial effects on power holders, particularly when they involve expectations that one provide value to one's group, take responsibility for the welfare of others, or improve the performance of those around them [53, 54, 55, 56, 41]. In this way, social role expectations for the powerful serve the function of directing their decision making and goal pursuit in ways that are beneficial to society.

3. How Artificial Intelligence (AI) Affects Power and Decision-Making

The world is changing rapidly, and artificial intelligence (AI) is already altering much of the human experience [57]. Given that power is an inherently social construct, interactions with AI-based technologies like algorithms, smart homes, and digital assistants, which can sometimes feel like humanoid agents, may also influence users' experience of power. We focus here on AI-driven digital assistants because companies are already building them with human-like capacities and they have the potential to become widely used in both organizational and personal contexts [58, 59]. Digital assistants like SIRI, Alexa, and Cortana are now readily accessible even to low-status individuals who would not otherwise have opportunities to exert power over others. Such assistants can be personalized and tailored to the user (for instance, by tracking that person's data

using their personal correspondence like emails and voicemails, their social media accounts, and even their heart rate and other biological markers). When a digital assistant is humanized, directing it to perform tasks on one's behalf may feel like possessing power over another human.

3.1. Humanizing Digital Assistants. While actually "being" human is a biological fact, *perceiving* humanness is psychological, and often subjective [60, 61]. For example, people are more likely to perceive technologies as human-like when they display mental capacities that are consistent with those of humans [62, 63]: specifically, when they appear to have agency (i.e., the ability to reason and think) and experience (i.e., the ability to feel). Thus, digital assistants that understand normal human language and communicate naturally in return are seen as more human-like [64, 65]. Similarly, communicators that use spoken (versus written) language are perceived to have stronger human-like mental capacities, such as intelligence [66, 67]. This effect is strongest when the communicator's voice sounds like a natural human voice: specifically, a voice that contains variance in paralinguistic cues like pitch, volume, and pace [68, 67]. Another means to humanize digital agents can be providing them with identifying information, such as a gender, name, or nationality [69,70].

To the degree that one perceives humanness (and attributes such as intelligence) in a digital assistant, one may also experience power over it depending on its attributes and how it is programmed to interact with the user. For instance, very deferent digital assistants may contribute more to a user's felt power. As another example, companies creating digital assistants often make the default voice female [71], perhaps because the female gender is stereotypically associated with warmth or subservience. This may serve to facilitate not only positive feelings toward the digital assistant but also a sense of power for the user. The factors in AI that influence

a sense of power for users represent an important area for future research. It is to this notion that we now turn.

3.2. Digital Assistants, Power, and Decision Making. As suggested above, interacting with a digital assistant may at times feel like interacting with another human. But a digital assistant is unique from a real person in that, although it may seem human-like, its user can remain cognitively aware that it is not, in fact, human. Furthermore, given that it is programmed to serve, it could be that the digital assistant will not be seen as a potential threat to one's position in the hierarchy. Therefore, it remains an empirical question whether and when interacting with digital agents may make a user feel powerful [72], as well as how such feelings of power might be similar to and different from power over a human. This reveals many new research questions; we focus on two here.

Digital Assistants, Power, and Goal Orientation. If the enhanced humanization of digital assistants can lead users to feel powerful, then users may likewise become more goal-oriented. Thus, it is possible that experiencing power while interacting with a digital assistant could trigger increases in action-orientation, pursuit of personal objectives, decisiveness, optimism, confidence, independence from others, and freedom from constraint. This "high-power" state may be adaptive in certain contexts but could also make users vulnerable to nudges and altered choice sets provided by the digital assistant. Given the sheer amount and depth of personal data that algorithms are capable of collecting from users combined with the potential to use power states to influence behavior, users could become vulnerable to manipulation by companies that control the digital assistants. Researchers should seek to understand the unique power-related consequences, opportunities, and vulnerabilities associated with using digital assistants.

Digital Assistants, Power, and Social Role Expectations. When it comes to role expectations, feeling powerful in relation to a digital assistant could lead to similar or different effects relative to feeling powerful relative to other humans. On one hand, feeling powerful in such a scenario may cause people to experience the same role-based expectations highlighted earlier because of the perception that they are interacting with another human. However, it might alternatively be the case that people will understand that the digital assistant is, at its core, different from an actual human and, as a result, may feel free from any role expectations typically experienced in high-power roles. This is consistent with research showing that people feel less socially evaluated and less susceptible to embarrassment when interacting with non-human technology as opposed to real humans [73]. In other words, people may fundamentally care less about maintaining their social role (e.g., behaving competently) when they know that their interaction partner is not human, even when it acts in human-like ways.

4. Conclusion

In this paper we have reviewed research indicating that the experience of power alters decision making by fostering goal-orientation and creating pressure to fulfill social role expectations. We have also argued that new advancements in AI are creating opportunities for new theorizing and research related to the effects of power on decision making. In particular, we argue that AI-based entities (e.g., digital assistants) can be humanized and, as a result, may create felt power in the user. In turn, this could trigger goal pursuit, but without the same curbing effects of social role expectations. These and a host of other important research questions await scholars' attention.

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