



The need for and nature of a normative, cultural psychology of weaponized AI (artificial intelligence)

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Published online: 6 February 2023
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Abstract

The use of AI in weapons systems raises numerous ethical issues. To date, work on weaponized AI has tended to be theoretical and normative in nature, consisting in critical policy analyses and ethical considerations, carried out by philosophers, legal scholars, and political scientists. However, adequately addressing the cultural and social dimensions of technology requires insights and methods from empirical moral and cultural psychology. To do so, this position piece describes the motivations for and sketches the nature of a normative, cultural psychology of weaponized AI. The *motivations* for this project include the increasingly global, cross-cultural and international, nature of technologies, and counter-intuitive nature of normative thoughts and behaviors. The *nature* of this project consists in developing standardized measures of AI ethical reasoning and intuitions, coupled with questions exploring the development of norms, administered and validated across different cultural groups and disciplinary contexts. The goal of this piece is not to provide a comprehensive framework for understanding the cultural facets and psychological dimensions of weaponized AI but, rather, to outline in broad terms the contours of an emerging research agenda.

Keywords Weaponized artificial intelligence · Normative psychology · Cultural psychology · Norms

Introduction

Work on the use of AI in weapons systems has tended to be theoretical and normative in nature, consisting in critical policy analyses and ethical considerations, carried out by philosophers, legal scholars, and political scientists (Bhuta, Beck, Geiss, Liu, & Kress, 2016; Bode & Huelss, 2022; Horowitz, 2016; Roberts et al., 2021). However, understanding the social and cultural dimensions of technologies – such as issues in value pluralism and technical systems – requires an understanding of (1) what people *actually* think about issues of right and wrong regarding the development and use of technologies and (2) how these perspectives are affected by *culture*.

To do so, this position piece describes the motivations for and sketches the nature of a normative, cultural psychology of weaponized AI. The *motivations* for this work are the increasingly global, cross-cultural and international, environments of contemporary technology, counterintuitive nature of normative thoughts and behaviors, and shortcomings within normative, principle-based approaches to technology ethics. The *nature* of this project consists in developing standardized measures of AI ethical reasoning and intuitions, coupled with questions exploring the development of norms as a conceptual alternative to values, administered and validated across different cultural groups and disciplinary contexts. The goal of this piece is not to provide a comprehensive framework for understanding the cultural facets and psychological dimensions of weaponized AI but, rather, to outline in broad terms the contours of an emerging research agenda.

Motivations

Better understanding the social and cultural dimensions of technologies requires insights and methods from empirical moral and cultural psychology. This necessity stems

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from the (1) global nature of technology and (2) counter-intuitiveness of normative thoughts and behaviors.

Global nature of technology

Technology is evermore global, spanning different cultures and countries, with peoples from diverse disciplinary, national, and cultural backgrounds working together as never before (Clancy & Zhu, 2021; Luegenbiehl & Clancy, 2017; Wong, 2021). As technology is deeply social, this presents two distinct sets of challenges for technology ethics: (1) determining the effects and implications of technology is challenging, since many individuals typically contribute to the development and implementation of technologies, but these individuals are often removed in time and space from those affected by their work (Van de Poel, 2016; Poel, 2017; Van de Poel & Royakkers, 2011; Zhu et al., 2022); (2) determining which effects and implications should be addressed becomes challenging, since people have different understandings of “ethics,” since disciplinary backgrounds, cultural commitments and socialization, and national priorities affect understandings of and attention given to the effects and implications of technologies (Dennis & Clancy, 2022; Luegenbiehl, 2010; Wong, 2021; Zhu & Jesiek, 2017). Addressing these challenges requires empirically informed, culturally responsive insights and methods.

Empirical work is needed, exploring the extent to which practices and views regarding different technologies converge or diverge across cultures and countries (Clancy & Zhu, 2021; Dennis & Clancy, 2022). This would include reassessing the centrality of values in understandings of the cultural and ethical dimensions of technology, represented by influential VSD (value-sensitive design) approaches. Counter-intuitive findings related to the nature of normative thought and behaviors – and how these are affected by culture – call into question the adequacy of value-based approaches to technology.

Counter-intuitiveness of normative thoughts and behaviors

VSD considers the roles of values in the development and employment of technologies, for instance, how technologies contribute to or detract from the realization of values among various stakeholders (Friedman & Hendry, 2019). Values are typically conceived as (1) long-standing (2) beliefs or ideas (3) about which states are worth pursuing (4) that affect one’s behaviors (Kulich & Zhang, 2012). However, work within VSD has tended to focus on limited sets of values, such as fairness and care (Clancy et al., 2022). While these values are characteristics of technology-ethics-related concerns among individuals from WEIRD (Western educated industrialized rich and democratic) cultures, this

focus is also somewhat idiosyncratic to individuals from these cultures (Henrich, 2020; Henrich et al., 2010). Non-WEIRD cultures tend to conceive of ethics in terms much broader than fairness or care alone (Haidt, 2012; Shweder et al., 1997).

Further, it is unclear that values do the work they are supposed to when considering the extra-technical, cultural and social, dimensions of technology. First, values are not especially predictive of either judgments or behaviors, since these are affected by unconscious, environmental factors (Bazerman & Tenbrunsel, 2012; Greene, 2014; Haidt, 2012). Next, values better predict behaviors among some cultural groups than others (Knafo et al., 2009). Third, values are not distinctive of cultural groups, since groups belonging to the same culture often subscribe to different values (Smith, 2010; Talhelm et al., 2014). Failing to appreciate these counterintuitive findings and the actual nature of normative thoughts and behaviors can have negative consequences.

For example, research exploring the effects of formal AI ethics guidelines and training within organizations has found that these have no effect on decision-making involving AI (Hagendorff, 2020; Rességuier & Rodrigues, 2020). This is somewhat unsurprising, since understandings of and compliance with normative guidelines are not primarily the result of rational, individual considerations. Rather, they are affected by social, cultural, and environmental factors (Bicchieri, 2016; Reiber & Garcia, 2010). Ensuring the ethical development and use of technologies requires a better understanding of normative thoughts and behaviors. To do so, insights and methods from empirical moral and cultural psychology can be usefully brought to bear on ethical considerations related to technology.

Developing a framework to study norms regarding weaponized AI

Although there are many ways insights and methods from empirical moral and cultural psychology could be brought to bear on ethical considerations related to technology, the approach proposed here consists in developing and carrying out quantitative research that captures explicit and implicit views among different stakeholders regarding (1) the development and use of AI in general and regarding weapons systems specifically and (2) how these are related to norms.

Quantitatively assessing views on the development and use of AI

Like work on the ethics of weaponized AI specifically, work on AI ethics in general has tended to be normative and theoretical in nature (Coeckelbergh, 2020; Müller, 2020).

Of the empirical work that does exist, most of it has been small-scale and qualitative in nature (Ghotbi & Ho, 2021; Ryan et al., 2021). Although useful first steps, quantitative research should supplement these approaches, addressing gaps in the current research.

For example, it is unclear if the perspectives of policymakers reflect those of the public, as well as if or how stakeholder views converge or diverge, and how these are related to national, disciplinary, and professional backgrounds. Such differences have been observed regarding conceptions of health and ethical judgments across cultures and professions (Leeman et al., 2011; Ransohoff, 2011), motivating an expectation of these differences regarding AI. However, adequately addressing these questions requires systematic inquiry, involving large, diverse samples. Such samples are difficult to acquire and analyze with interviews and open-ended responses alone. Not only are standardized surveys easier to administer and analyze, but these methods can also be used to “triangulate” research findings, confirming similar results using multiple methods.

Further, while participants can share their explicit perspectives on the development and use of AI in interviews and responses to open-ended prompts, alone these methods risk neglecting *implicit* views, views that could be better understood by forcing participants to choose, for instance, between accuracy in outcomes and transparency in processes while using AI-enabled apps. Implicit views and intuitions typically play a more significant role in ethical judgements and behaviors than explicit views and reasoning.

As a result, measures used to study ethics in these terms – such as the DIT (Defining Issues Test)/DIT 2, MFT (Moral Foundations Questionnaire), and outcome- versus process-based dilemmas (Bebeau, 2002; Graham et al., 2011; Greene, 2014; Greene et al., 2009; Haidt, 2012; Narvaez & Bock, 2002; Rest et al., 1999) – could be adapted to AI ethics specifically, for example, including items such as, “Would you prefer using an AI-assisted program that was: a. 75% accurate and could explain 25% of its decisions; b. 95% accurate and could explain 5% of its decisions?” These measures could assess the relative importance attached to different kinds of AI ethical concerns, for example, accountability, responsibility, control, and autonomy. Factors such as national, disciplinary, and professional backgrounds could be treated as input variables, helping to identify significant differences between types of stakeholders. However, this work would only help to identify AI ethical perspectives, and how these differ among groups. Additional research would be needed to understand the sources of these perspectives and differences.

Why and how to use insights and methods from norm psychology

Because of the reasons discussed above, rather than values, norms should become a conceptual focus of research within technology ethics. A growing interdisciplinary consensus between philosophy and anthropology has conceived of norms as (1) rules about which kinds of (2) behaviors are (3) required or forbidden, which are reinforced/stabilized/internalized through (4) sanctioning mechanisms that (5) facilitate cooperation.¹

On this understanding, norms are closer to and more directly concerned with behaviors than values. For that reason, they are easier to identify and measure than values, which can only be discerned indirectly, based on testimonies. Although their natures differ from culture to culture, norms are central to all known cultural groups: All groups have norms and sanctioning systems, identifying, promoting, and proscribing specific behaviors (Henrich, 2015b; Stich, 2017). As such, norms would be more appropriate candidates for cross- and inter-cultural studies than values.² Further, a focus on norms in general would help to further distinguish between formal and informal norms, relevant to weaponized AI.

The nature of formal norms and their corresponding frameworks are well represented in laws, where explicit rules and sanctioning mechanisms are clearly articulated.³ Laws/legal frameworks have tended to be the focus of work on AI in weapons systems – for instance, how these systems would (not) fit into existing regulatory frameworks, provisions to be added, and so on (Bhuta et al., 2016; Crotoof, 2015; Mauri, 2022; Seixas-Nunes, 2022). However,

¹ This characterization is based on (Bicchieri, 2016; Chudek & Henrich, 2011; Sripada & Stich, 2007). However, debate exists concerning the nature of norms/norm systems. See (Kelly & Setman, 2020) for a helpful overview. Understandings of norms in the field of international relations – in which one of the authors does most of her work – are quite different from the characterization provided above. See (Bode & Huelss, 2022) for an account oriented in scholarship on international relations.

² The importance attached to values, one could argue, results from Western-centric, individualistic biases, where the pursuit of preferred states is given exaggerated importance in decision-making, rather than, for example, expectations about what others are doing or expect one to do (Bicchieri, 2016). One might argue that expectations about what others are doing or expect one to do is indicative of a preferred value, for example, harmony or community. However, this response supposes that individuals initially stand apart from/are different from groups. *Independent* conceptions of personhood such as these are in the cultural and historical minority. Most peoples, in most places, throughout most of time have conceived of themselves in *interdependent* terms, as thoroughly embedded in communities (Henrich, 2020; Nisbett, 2010).

³ In reality, this might not always be the case. For example, international law is affected by diplomatic negotiations, which always involve a degree of ambiguity.

laws are only effective/legal frameworks only matter when they exist in and are supported by broader, informal norms and corresponding institutions. This is part of the reason so many well-intentioned international interventions and organizational policies fail – formal frameworks are unsupported by or clash with informal institutions (Acharya, 2004; Davidson & Kelly, 2018; Henrich, 2015a, b, 2020; Kelly & Davis, 2018; Wiener, 2018; Zimmermann, 2017). Such insights have resulted from a growing body of interdisciplinary work in recent years, comprised by those working in philosophy, psychology, anthropology, and economics (Bicchieri, 2016; Gelfand, 2018). Given the breadth of this work and importance of norms, these frameworks can be used to organize existing findings, as well as conduct original research on the development and use of technologies.

Unlike values, norms only make sense in communities, affected by the behaviors and views of others. For example, norms about weaponized AI should not be understood in terms of the values of policymakers alone. Rather, they would be affected by expectations regarding the behaviors and views of diverse stakeholders including allies and antagonists, political constituents, industry, and so on. This is especially true in the current global environment, characterized by growing political mistrust and polarization. Since norms concern behaviors, exploring the nature and development of weaponized AI norms would help to understand the development of this technology. This might be done by coupling questions related to the development and use of AI, described above with ones related to the development and spread of norms, for instance, “Consider the question you just answered. On a scale of 0–5 (0 = not at all and 5 = very much), to what extent do you believe others feel the same? friends __, family __, coworkers __?” This question would allow researchers to assess descriptive norms and the relative influences of different groups within reference networks (Bicchieri, 2016; Chudek & Henrich, 2011).

Conclusion

The use of AI in weapons systems raises numerous ethical issues. To date, these issues have been handled in a normative, theoretical fashion: Questions of right and wrong – what should or should not be done – regarding the development and use of these technologies have been raised by philosophers, legal scholars, and political scientists. However, adequately addressing the cultural and social dimensions of technology requires insights and methods from empirical moral and cultural psychology. This piece has (1) *motivated* the importance of this work in general

– the increasingly global, cross-cultural and international, nature of technologies, and counter-intuitive nature of normative thoughts and behaviors – and (2) outlined how this might be done – developing standardized measures of ethical reasoning and moral intuitions regarding the use of AI and weapons systems to be administered inter-culturally/-nationally, coupled with questions related to the nature and development of norms.

Funding This material is based on work supported by the US National Science Foundation (NSF) under Grant No. 2124984. Professor Ingvild Bode’s contribution to this paper was funded by the European Research Council (ERC), under the European Union’s Horizon 2020 research and innovation program (grant agreement No. 852123).

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