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Future-Proofing Justice

*Building a Research Agenda to Address the Effects
of Technological Change on the Protection of
Constitutional Rights*

*Appendix: Panel Description, Technical Methods, and
Preworkshop Questionnaire*

Brian A. Jackson, Duren Banks, Dulani Woods, Justin C. Dawson

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APPENDIX: PANEL DESCRIPTION, TECHNICAL METHODS, AND PRE-WORKSHOP QUESTIONNAIRE

This appendix presents additional detail on the panel process, needs identification, and prioritization carried out to develop the research agenda presented in the main report, *Future-Proofing Justice: Building a Research Agenda to Address the Effects of Technological Change on the Protection of Due Process and Constitutional Rights* (Jackson et al., 2017).

The Panel

The members of the panel were identified through publications, web searches, social network expertise searches, and individual recommendations seeking individuals who had experience or had researched issues of technology and its effects on due process and individuals' rights. The research team sought to include criminal justice practitioners, legal scholars, and representatives from relevant nongovernmental organizations to ensure that participants would bring a variety of perspectives to the needs identification and prioritization process.

Pre-Workshop Components

We provided the panel members with read-ahead materials that described the goals of the workshop and sought to frame the discussion of due process, individuals' rights, and how emerging technology could affect them in criminal justice activities. The materials structured the discussion using the typology of rights and the different technology categories presented in the report, with the goal of ensuring that participants would comprehensively consider the full range of issues during the discussion and ranking.

To seed the workshop discussion and provide an initial window on the issues of greatest importance to the participants, we sent the panel a pre-workshop questionnaire that presented the technologies and asked them to suggest issues that the technologies pose for different rights. The full text of the questionnaire is presented at the end of this appendix.

The workshop's moderators used the results of the questionnaire to inform their planning and as seeds for discussion during the meeting as panelists brainstormed and generated needs. The workshop discussion stepped through the different rights and issues covered in the questionnaire, using the different technology types to identify relevant issues. The agenda of the workshop is presented in Table A.1.

Table A.1. Technology and Due Process Workshop Agenda

Day 1

| Time | Activity |
|------------|--|
| 8:30 a.m. | Introduction and welcome, Review of pre-workshop questionnaire results |
| 8:45 a.m. | Panel introductions |
| 9:15 a.m. | Right against self-incrimination |
| 10:30 a.m. | Break |
| 10:45 a.m. | Right to confront witnesses |
| 11:45 a.m. | Lunch break |
| 12:30 p.m. | Right to effective assistance of counsel and to a speedy trial |
| 2:30 p.m. | Break |
| 2:45 p.m. | Presumption of innocence and right to an unbiased tribunal |
| 5:00 p.m. | Day adjourns |

Day 2

| Time | Activity |
|------------|--------------------|
| 8:30 a.m. | Final discussion |
| 9:30 a.m. | Break |
| 9:45 a.m. | Ranking exercise |
| 11:00 a.m. | Break |
| 11:15 a.m. | Wrap up discussion |
| 12:00 p.m. | Panel adjourn |

During each session, the panel discussed technology-related concerns for each class of rights or each issue, using the categories of technologies described in Table 1 of the main report to guide the examination. In each area, the topics and concerns varied, based on the views of the panel members, so while each category of rights and types of technologies were considered, not all were discussed, and those that were discussed were covered to different levels of depth.

Prioritization of the Needs

Because we expected the needs associated with this topic to include more-basic research than previous efforts to identify and prioritize needs (see, for example, Jackson et al., 2016, and references therein), we used a simpler approach to elicit the panel's views about which of the needs should be most highly ranked.

For each need, we asked each panelist to make the following two judgments:

- What is the need's *payoff*, or how valuable meeting the need would be? This ranking was intended to capture the number of defendants that meeting the need would likely affect, as well as the magnitude of the effect for any individual defendant.
- What is the need's *likelihood of success*, or the probability that an effort to meet the need would be successful? This ranking was intended to be a panelist's judgment of the probability, ranging from 10 percent (the lowest available) to 90 percent (the highest).

The product of these two rankings is an *expected-value* score for the need—that is, its payoff weighted by its likelihood of success.

Every panelist assigned ratings to each need using an online survey tool and had the opportunity to enter comments related to their judgments. The results of that round of prioritization were then presented to the full panel in hard-copy form (with histograms of the ratings and text comments). Panelists then had the opportunity to re-score the needs based on their review of the results and group discussion of the initial ratings, if desired. Due to a technical failure in the online

survey tool, this had to be done on paper, which had two consequences. First, it contributed to significant nonresponse in the second rating round at the question level (i.e., some respondents left many questions blank), and second, because the electronic data were collected anonymously to maintain nonattribution for individual panel members, the research team could not link the initial and final responses to identify and carry forward participants' initial ratings (which was the intent of the methodology).

To break the identified needs into three tiers (representing high, medium, and low priority) as done previously (see Jackson et al., 2016), our intent was to cluster the needs by median expected value after the second ranking round. But because of the significant nonresponse and our inability to identify which participants did not respond in that round, simply using the Round 2 results would not appropriately reflect the views of the nonresponders in the final ranking.

To address this problem, we adopted the following approach. Two median expected-value calculations were made, one for each round of ranking. Where the calculations differed, we incremented the Round 1 measure toward the Round 2 value, *but weighted it by the percentage of the participants who had responded for the need in Round 2*. To illustrate with a notional example, if a need had an expected value of 40 in Round 1 and a value of 50 in Round 2, how much the Round 1 value would increase would be based on the percentage of responses in the Round 2 ranking. If only 10 percent of the panel members responded for the need in Round 2, its assigned expected-value score would be 41. If 50 percent responded, the score would be 45. And if every member responded, the score would be the measured Round 2 value of 50. This approach represented the best compromise that we could identify that balanced the desire to respect the assessments made in Round 1 by participants who did not respond in Round 2, while also reflecting the updated views of the Round 2 responders.

The resulting expected value scores were then clustered using spherical clustering (the "ward.D" algorithm from the "stats" library in the R statistical package, version 3.3.0) to minimize in-cluster variance while breaking the needs into three tiers.

POTENTIAL IMPACT OF TECHNOLOGY ON DUE PROCESS: PRE-WORKSHOP QUESTIONNAIRE

Thank you for agreeing to participate in this workshop to explore the potential effects of technology on due process. The read-ahead document we circulated included a few initial questions that specific technologies appeared to raise for components of due process.

During the workshop, we will be structuring the discussion around the elements of due process described in that document and will explore the potential effects of new technology and what research is needed to either better understand or manage those effects. The end product of the workshop will be a research agenda for minimizing problems or maximizing the potential benefit for protecting the constitutional rights of the accused.

This questionnaire is intended to get the panel's initial thoughts to help us structure and plan the discussion and to make sure we focus on the issues you see as most important.

In the workshop we will use the elements of due process to structure our discussion about whether various technologies call into question the ability to maintain due process or create opportunities to better protect due process for criminal defendants.

Technologies to Consider

To make sure that we have a common starting point, the technologies initially identified as having potential effects on due process are listed below. We ask you to refer to these technologies as you answer the questions that follow. There will be an opportunity to identify any other technologies that have the potential to impact due process at the conclusion of this questionnaire.

The list starts with technologies used in society and by citizens—where the challenges for due process center on how those technologies are or are not drawn on for case preparation and argument—and conclude with a separate mini-table on technologies used primarily in the judicial system itself. Expanding any technology category will provide examples of the technology and its potential impact on due process.

Move mouse on categories below to see examples and potential impact:

- Body-Integrated Technologies
- Carried Devices
- Personal Computing
- Building-Integrated and Household Devices
- Vehicle Integrated Technology
- The Societal Technology Ecosystem
- Technologies in the Courtroom

Right Against Self-Incrimination

1. Across the range of technologies, does the compelled extraction of data or collection of data using the technology raise issues similar to forcing someone to testify against themselves?
 - Yes
 - Potentially
 - No

If Yes, Potentially → Optional: What are the most serious issues or technologies of most concern?

2. Do any technologies create opportunities to better protect individuals' right against self-incrimination?
 - Yes
 - No

If Yes → If so, please specify which technologies apply from the list [below]. You will have an opportunity to identify other technologies that may impact due process at the conclusion of the survey.

- Body-Integrated Technologies
- Carried Devices
- Personal Computing
- Building-Integrated and Household Devices
- Vehicle Integrated Technology
- The Societal Technology Ecosystem
- Technologies in the Courtroom

If Yes → Optional: What are the most significant opportunities in your view?

Right to Confront Witnesses

3. Does the use of virtual presence technologies—whether today’s videoconferencing or potential future technologies—limit individuals’ ability to confront their accusers?

- Yes
- Potentially
- No

If Yes, Potentially → Optional: What are the most serious issues in your view?

4. For other evidence obtained from other technology types—e.g., data from an Internet-enabled home appliance or embedded in a vehicle—what kinds of standards and practices must be followed to effectively “confront” the kinds of evidence that these devices can produce?

5. Does use of data from any of these technology types provide disproportionate advantages to the State? That is, would accused individuals have particular difficulty understanding and contesting evidence from these systems?

- Yes
- No

If Yes → If so, please specify which technologies apply from the list [below]. You will have an opportunity to identify other technologies that may impact due process at the conclusion of the survey.

- Body-Integrated Technologies
- Carried Devices
- Personal Computing
- Building-Integrated and Household Devices
- Vehicle Integrated Technology
- The Societal Technology Ecosystem
- Technologies in the Courtroom

If Yes → Optional: What are the most significant issues in your view?

6. Do any of these technologies create opportunities for protecting due process in these areas?

- Yes
- No

If Yes → If so, please specify which technologies apply from the list [below]. You will have an opportunity to

identify other technologies that may impact due process at the conclusion of the survey.

- Body-Integrated Technologies
- Carried Devices
- Personal Computing
- Building-Integrated and Household Devices
- Vehicle Integrated Technology
- The Societal Technology Ecosystem
- Technologies in the Courtroom

If Yes → Optional: What are the most significant opportunities in your view?

Right to Speedy Trial

7. Would the analysis burden associated with all the data obtainable from these technologies risk unacceptable delay of the judicial process?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

8. Do these technologies create opportunities for speeding up the justice process (e.g., more likely and quicker plea bargaining) and resolving cases more quickly?

- Yes
- No

If Yes → Optional: What are the most significant opportunities in your view?

Right to an Unbiased Tribunal

9. Does the data available from these technologies and the connectivity they provide to citizens (e.g., through a mobile device while sitting on a jury) undermine the ability to maintain an unbiased tribunal to hear a case?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

10. Does the use of some presentation technologies or types of data at trial—e.g., holographic or virtual reality technologies—have such strong potential influence on jurors to risk creation of bias in decisions?

- Yes
- No

If Yes → Optional: What are the most serious issues or types of data of most concern?

11. Does all the data available to the State via these new technologies potentially affect the dynamics in plea bargaining processes?

- Yes
- No

If Yes → Optional: What do you see as the most important effects on the process?

12. Can any of these technologies or the data they provide create opportunities to better safeguard the impartiality of the court when hearing a case?

- Yes
- No

If Yes → Optional: What are the most significant opportunities or most relevant technologies in your view?

Right to Presumption of Innocence

13. Does the use of data from any of these technologies raise concerns regarding individuals' presumption of innocence? Are the issues different regarding how the data might shape plea bargaining versus trial?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

14. Do specific technologies or techniques used in court decisions (e.g., risk assessment tools) threaten the presumption of innocence?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

15. Do any of these technologies create opportunities for ensuring a presumption of innocence before conviction?

- Yes
- No

If Yes → Optional: What are the most significant opportunities or most relevant technologies in your view?

Right to Effective Assistance of Counsel

16. Do any of these technologies—either in the data they create or more likely their use in the judicial system—potentially undermine the likelihood of individuals being effectively represented?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

17. Do any of these technologies create the potential to improve the effectiveness of counsel for accused individuals—whether privately represented or publicly defended?

- Yes
- No

If Yes → Optional: What are the most significant opportunities or most relevant technologies in your view?

Rights Related to Evidence at Trial

18. Do any of these technologies undermine the ability of individuals to marshal and effectively use evidence in their own defense or to ensure that decisions are made only on the evidence presented about the case?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

19. Are there different issues with the ability of the accused to use evidence in a plea bargain context?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

20. Do any of these technologies create opportunities to level the playing field between the accused and the State at trial in evidence presentation and use?

- Yes
- No

If Yes → Optional: What are the most significant opportunities or most relevant technologies in your view?

Right to an Accurate Record of Court Proceedings

21. Do any of these technologies—either because of the types of data that they generate or the ways they display or present it in a trial context—create new challenges for court recording to support appeal and other processes?

- Yes
- No

If Yes → Optional: What are the most serious issues or technologies of most concern?

22. Do any of these technologies potentially improve on current capabilities to capture and maintain an accurate court record?

- Yes
- No

If Yes → Optional: What are the most significant opportunities or most relevant technologies in your view?

Any Other Issues

23. Do you think that there are important elements of due process or the requirements for protecting due process that we have missed and that you think we should discuss at the workshop?

- Yes
- No

If Yes → What have we missed?

24. Of the technologies listed, which do you think have the greatest potential to impact due process—now or in the future?

- Body-Integrated Technologies
- Carried Devices
- Personal Computing
- Building-Integrated and Household Devices
- Vehicle Integrated Technology
- The Societal Technology Ecosystem
- Technologies in the Courtroom

25. Are there technologies or technology areas not mentioned that may have important effects on protecting due process?

Technology 1:

Technology 2:

Technology 3:

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