AI and Automated Decision-Making: Impact on Access to Justice and Legal Aid

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Summary

This paper addresses a crucial and growing issue confronting legal aid systems and access to justice advocates: the impact of algorithms, automated decision-making and artificial intelligence (AI) on human rights, due process and access to justice.

Our analysis is based on research and consultations undertaken by the Law Commission of Ontario (LCO), a Toronto-based law reform agency. This work is part of a larger, multiyear LCO project addressing issues of algorithmic accountability, access to justice, and technology regulation.

The LCO considers these issues primarily from a Canadian perspective. The LCO believes, however, that our research raises issues and insights that are helpful to non-Canadian jurisdictions and legal aid plans.

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2 The LCO is an independent law reform commission located at Osgoode Hall Law School, York University, Toronto, Canada. The LCO’s mandate is to promote law reform, advance access to justice, and stimulate public debate. The LCO fulfills this mandate through rigorous, evidence-based research; contemporary public policy techniques; and a commitment to public engagement. LCO reports provide independent, principled, and practical recommendations to contemporary legal policy issues. More information about the LCO is available at www.lco-cdo.org.

This paper is organized as follows: Part One is a general description of automated decision-making. Part Two summarizes the use of automated decision-making in areas of law relevant to legal aid plans and clients. Part Three illustrate the impact of automated decision-making in the criminal justice system, a key area for legal aid systems. Part Four outlines some of the law reform and/or litigation issues that may confront legal aid plans and service providers as the use of this technology grows in the justice system. And finally, Part Five offers some early ideas about strategies that legal aid plans may consider in response to these developments.

What is Automated Decision-Making?

Definitions

What are algorithms, automated decision-making, and AI?

The AI Now Institute, a leading American AI policy organization, defines algorithms and automated decision-making as follows:

An Algorithm is generally regarded as the mathematical logic behind any type of system that performs tasks or makes decisions. For example, how Facebook sorts what posts a user sees in their Facebook feed is an “algorithm.” The logic used in a software program to assign criminal defendants a public safety risk score is also an “algorithm.” “Algorithms” do not have to be based in software on computers. However, in the case of many types of risk assessments used in courts or human services agencies, the “algorithm” can be represented by a piece of paper that outlines the steps a human should take to evaluate a particular case.4

AI Now defines artificial intelligence and machine learning in these terms:

Artificial Intelligence (AI) has many definitions, and can include a wide range of methods and tools, including machine learning, facial recognition, and natural language processing. But more importantly, AI should be understood as more than just technical approaches. It is also developed out of the dominant social practices of engineers and computer scientists who design the systems, and the industrial infrastructure and companies that run those systems. Thus, a more complete definition of AI includes technical approaches, social practices and industrial power.

In current use, machine learning (ML) is the field most commonly associated with the current explosion of AI. Machine learning is a set of techniques and algorithms that can be used to “train” a computer program to automatically recognize patterns in a set of data. Many different tools fall under the umbrella of “machine learning.”5

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4 AI Now, Algorithmic Accountability Policy Toolkit, pg. 2.
5 Ibid.
It is well-known that automated decision-making is increasingly being used in a wide range of public and private contexts. It is also generally known that automated decision-making is likely to have an impact on the justice system. What is less well-known, however, is the extent to which automated decision-making systems are already being used in justice system decision-making.

**Scope of Automated Decision-Making in the Justice System**

Experience and research in Canada, the US, and elsewhere has demonstrated the growing use, and influence, of automated decision-making in a surprisingly broad range of legal decision-making:  

- **Child Welfare**: Automated decision-making has been used to assess risk of current or future harm to a child.  
- **Access to Government Benefits/Fraud Detection**: Automated decision-making is being used to determine eligibility for access to government benefits, including algorithms designed to detect fraudulent applications.  
- **Access to Housing**: Automated decision-making is being used to prioritize and determine eligibility for permanent or temporary housing.  
- **Education**: Automated decision-making is being used to predict whether students are a high risk for school-related violence.  
- **Surveillance Technologies**: Automated decision-making is being used by law enforcement agencies to support police surveillance.  
- **Predictive Policing**: Automated decision-making is increasingly being used to analyze data to help predict either where criminal will occur or who will be involved in crime.  
- **Bail**: Automated decision-making is being used to assess the suitability of releasing criminal accused on bail.  
- **Sentencing**: Automated decision-making is being used to recommend sentencing for criminal accused, including whether an accused is at high or low risk of reoffending.  
- **Inmate Housing Classification**: Automated decision-making is being used to recommend prison classification and conditions for inmates.

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6 See generally, Algorithmic Accountability Policy Toolkit, supra, pages 7-8 and the specific examples cited below.  
• **Parole:** Automated decision-making is being used to recommend parole eligibility or conditions.

• **Immigration:** Automated decision-making is being used to recommend immigration eligibility or status.\(^\text{11}\)

What’s notable about these examples is that they are the areas of greatest concern to legal aid plans and justice advocates: “poverty law”, human rights law, child welfare law, criminal law, and refugee/immigration law.

Important, this is an *early* list of potential applications. The AI Now Institute states:

> Automated decision systems can exist in any context where government bodies or agencies evaluate people or cases, allocate scarce resources, focus scrutiny or surveillance on communities, or make nearly any sort of decision.\(^\text{12}\)

Most of the examples listed above are American. There is no reason to believe that these applications will not be considered or developed in other jurisdictions. In Canada, for example, governments, regulators, private companies, law firms, academics, and others have placed a high priority on developing automated decision-making for government services and decision-making,\(^\text{13}\) private sector applications\(^\text{14}\), and within law firms and the legal system.\(^\text{15}\)

The LCO has learned that these technologies are spreading rapidly across Canada: The Citizen Lab, an interdisciplinary research institute located at the University of Toronto, recently released a widely-reported study, *Bots at the Gate*, that revealed the use of automated decision making in Canada’s immigration and refugee system.\(^\text{16}\) Citizen Lab and other organizations also report that automated decision-making systems are being used or considered in criminal and mental health contexts in Ottawa, Vancouver, Toronto, Alberta, and Saskatchewan.

Even before the advent of automated decision-making, access to justice in these areas is appropriately criticized for being too complex, expensive, inaccessible, and/or biased against low-income, racialized or other vulnerable individuals and communities. The use of automated

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\(^\text{16}\) Bots at the Gate, *supra*. 
decision-making has the potential to significantly worsen access to justice for legal aid clients and place extraordinary pressure on legal aid plans’ ability to meet their clients needs.

Case Study: Use of Automated Decision-Making in Criminal Justice

Early experience with automated decision-making in the justice system is decided mixed. On the one hand, automated decision-making and AI have potential to improve access to justice and reduce discrimination. For example, these systems can be used to reduce costs, and promote speed, efficiency and consistency in decision-making. Unfortunately, experience also demonstrates the potential for these technologies to be opaque, inexplicable, and discriminatory.

In the justice system, the cutting edge of automated decision making appears to be the criminal justice system.

The LCO recently convened Canada’s first, full day, interdisciplinary forum addressing the potential impact and regulation of Automated Decision-Making in the Criminal Justice System. The event brought together more than 50 policy makers, lawyers, jurists, technologists, academics, and community organizers to share experiences, discuss issues, consider law reform options and discuss litigation strategies. Criminal justice provides a good illustration of how the technology is being used, the risks to legal aid clients, and how the technology may change the nature of legal aid service provision.

Automated decision-making systems are being used in the criminal justice system in at least three important contexts: predictive policing, pretrial risk assessment (bail), and sentencing risk assessment. Other areas, such as the use of facial recognition technology, raise similar issues for access to justice advocates.

Predictive Policing

Predictive policing is a growing trend in law enforcement across North America. Predictive policing algorithms are reportedly being used in at least 60 American jurisdictions and increasingly across Canada.

The National Institute of Justice in the United States defines predictive policing as:


18 See generally, the Australian Human Rights Commission’s Human Rights and Technology Issue Paper for an excellent introduction to these issues. See also The Toronto Declaration.

Predictive policing tries to harness the power of information, geospatial technologies and evidence-based intervention models to reduce crime and improve public safety. This two-pronged approach — applying advanced analytics to various data sets, in conjunction with intervention models — can move law enforcement from reacting to crimes into the realm of predicting what and where something is likely to happen and deploying resources accordingly.

The predictive policing approach does not replace traditional policing. Instead, it enhances existing approaches such as problem-oriented policing, community policing, intelligence-led policing and hot spot policing.

Predictive policing leverages computer models — such as those used in the business industry to anticipate how market conditions or industry trends will evolve over time — for law enforcement purposes, namely anticipating likely crime events and informing actions to prevent crime. Predictions can focus on variables such as places, people, groups or incidents. Demographic trends, parolee populations and economic conditions may all affect crime rates areas. Using models supported by prior crime and environmental data to inform different kinds of interventions can help police reduce the number of crime incidents.20

Predictive policing has been very controversial. This technology seeks to apply predictive analytic techniques to large data sets that typically intermingle socio-economic, population surveillance, and recent and historical criminal data. The models generally aim to generate predictions about where different types of crime are most likely to take place (geographic and incident profiling) and/or who is most likely to commit a crime (personal or population profiling). Police may use these profiles to proactively deploy resources within populations (through community policing or intelligence-led policing) or within specific areas (through targeted surveillance or hot-spot policing).

**Predictive Bail and Sentencing**

The experiences of law enforcement are being similarly reflected in the justice system itself through the adoption of so-called “predictive prosecution” technologies. Predictive prosecution tends to fall into two general areas: predictive bail21 and predictive sentencing.22 As explained by Prof. Andrew Ferguson, “Predictive prosecution involves the identification and targeting of suspects deemed most at risk for future serious criminal activity, and then the use of that information to shape bail determinations, charging decisions, and sentencing arguments” in a type of “Moneyball prosecution.”23

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20 [https://www.nij.gov/topics/law-enforcement/strategies/predictive-policing/Pages/welcome.aspx](https://www.nij.gov/topics/law-enforcement/strategies/predictive-policing/Pages/welcome.aspx)
21 For a good description of predictive bail, see Logan Koepeke and David Robinson, *Danger Ahead: Risk Assessment and the Future of Bail Reform* and Sarah Desmarais and Evan Lauder, *Pretrial Risk Assessment Tools: A Primer for Judges, Prosecutors and Defense Attorneys*.
22 See generally, Anna Maria Barry Jester, Ben Casselman and Dana Goldstein, *The New Science of Sentencing*.
23 Andrew Ferguson, *Predictive Prosecution*. 
Access to Justice Criticisms

Both predictive policing and predictive prosecution face similar criticisms that generally fall into four broad categories.

First, the data sets used constitute opaque “black boxes” that are read and interpreted by proprietary and complex algorithms. Despite – or because of – their complexity, the algorithms are often incapable of transparently explaining the reasoning behind the predictions and recommendations being made.

Second, the data relied upon is generally created as a result of historical patterns of policing and other social data known to disproportionately focus on impoverished, racialized, and marginalized communities. Predictive products may also rely on “fairness gerrymandering” and aggregate data reports to further obscure or minimize how specific populations are targeted.24

Third, these predictive data systems face serious challenges in relation to fundamental constitutional protections, due process rights, and principles of fairness. Predictive profiling systems face tests for unreasonable search and seizure, probable cause, human rights discrimination, basic rules of evidence, the requirement for reasons to legitimate a decision, and the like.

Fourth, predictive systems are criticized because they do not indicate or recommend what the best kind of intervention might be. To put it simply, police may interpret and respond to a prediction of risk as a criminal matter, whereas a social worker may see the same data as social determinants of health that merit the intervention of community supports and services.

Impact on Access to Justice, Legal Aid Plans and Litigators

Given these developments, what issues or concerns should legal aid plans and access to justice advocates be concerned about? What issues are likely to have an affect on legal aid clients, service provision and access to justice for low-income communities? What form should take response take? Law reform, litigation, something else?

Fortunately, work has already begun identifying issues and potential solutions. The “digital rights”, legal, and technology communities have been focussed on questions regarding the transparency, accountability and impact of these systems for several years.25 More specifically,

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24 See, for example, ProPublica, Machine Bias, Rashida Richardson, Jason Schultz and Kate Crawford, Dirty Data, Bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems, and Justice and Sandra Mason, Bias In, Bias Out.

25 See, for example, AI Now, Algorithmic Accountability Policy Toolkit; Omidyar Network, Public Scrutiny of Automated Decisions; work at the Berkman Klein Center; discussions at RightsCon 2018; work at Access Now, and
questions are being asked about how to ensure these systems are disclosed, how to ensure these systems conform with human rights laws and principles, and how to ensure an effective remedy in the event of a rights violation.

1. Disclosure: In order to understand the use and impact automated decision-making, one must be aware of its existence and use. As a result, disclosure of automated decision-making is becoming a high-priority access to justice issue.

Disclosure of automated decision-making and AI has many facets: Most simply, the question is “how can law ensure that the existence or use of automated decision-making is publicly disclosed”? More complex and related questions include: What is the definition of is an “automated decision”? Who has a responsibility to disclose? What is the extent of the disclosure necessary to ensure legal transparency and accountability? For example, should disclosure include the historic data (called “training data”) that is “at the heart of...machine learning”?26 What about the policies used to design the system, software or source code?

There are many options for addressing these issues, including law reform options (including differing approaches taken by New York City, the Canadian government, the European Union, corporate social responsibility codes, several US federal and state initiatives, and many others)27 and litigation strategies.28

2. Accountability: In addition to disclosure issues, how can the law ensure automated decision-making systems are designed to ensure transparency, legal accountability, and compliance with human rights law and principles? Are existing constitutional protections, statutes or other legal instruments sufficient? Is new legislative or regulatory direction needed?

Accountability issues include crucially important questions respecting how to ensure systems are free from bias; how to prevent “data discrimination”; and how to promote legal accountability through auditing, testing, and system metrics? The Canadian Federal Government’s White Paper on AI, Responsible Artificial Intelligence in the Government of Canada, states the issue succinctly:

…when administrative tasks are complex and value-laden, it can be difficult to ensure that the actions of the AI systems align with the spirit and intentions of the policy being implemented. Working with complex social and economic systems is considerably more complex than a game of Go. How do we know

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27 A partial summary of these initiatives can be found at Omidyar Network, Public Scrutiny of Automated Decisions, Ibid. The LCO has more examples.
whether an AI system is appropriately trained for its task, and that data is interpreted in a manner that is accurate and responsible? How do we know whether AI is making biased or prejudicial decisions? How can AI systems be coded to meet similar legal obligations as human public servants, such as the Charter of Rights and Freedoms or the Privacy Act, and who is responsible when they fail to meet these obligations? How do we teach it social, cultural, or geographical context such that it can make decisions in a nuanced fashion? How do we know the rationale behind the decisions of an AI system? What types of decisions should always require some form of human intervention? How do we know that the data on which an AI system is trained, which is sampled from real data about real Canadians, is kept secure and private once the AI system is in deployment?29

These are crucial questions that must be addressed appropriately to ensure automated decision-making promotes access to justice and does not perpetuate (or worsen) biased decision-making in crucial areas of government entitlements, criminal law, poverty law, etc.

There are many legislative, regulatory and policy options available to address these issues ranging from “ethically aligned design” and standards-based approaches to more comprehensive regulatory models. 30

3. Due Process: Due process rights regarding fairness, notice, hearing, reasons, appeals and remedies arise in a wide array of contexts, including government and administrative decisions, adjudicative proceedings, and in many private law contexts such as employment, housing, and consumer services. These issues arise at both a systemic- and individual decision-making level.

How these concepts are applied to decisions made, or aided, by automated decision-making is a fundamental element of access to justice. Are existing legal instruments and rules sufficient? Is new legislative or regulatory direction needed? What rights or remedies are available to a person who believes their rights or entitlements were influenced by automated decision-making? What evidence is disclosed? What rules of evidence apply? Is expert evidence necessary? Is there a right to counsel?

29 Government of Canada, Digital Disruption White Paper, Responsible Use of Artificial intelligence at pg. 5-6.
30 See generally, Omidyar Network, Public Scrutiny of Automated Decisions, Supra. Some specific examples include: https://ethicsinaction.ieee.org/; a New York City Task Force and regulation examining automated decision-making, the Asilomar AI Principles, the Government of Canada’s Treasury Board’s Directive on Automated Decision-making, algorithmic impact assessments, and the European Union’s Communication on Artificial intelligence for Europe. The LCO has more examples.
Litigators, regulators, and scholars (legal and technology) have begun to consider these issues from both an administrative law and legislative/regulatory perspective. For example, AI scholars and technologists are beginning complex discussions about “explainability” of decisions made by automated decision-making and AI systems.

Some Early Thoughts for Legal Aid Plans and Practitioners

What should legal aid plans and practitioners be doing to respond to or prepare for these developments? This is a difficult question, particularly when legal aid plans are having extraordinary difficulty meeting the existing needs of their clients.

Both authors are acutely aware of these challenges. Between us, we have more than 30 years experience delivering legal services and designing legal aid programs to low-income Ontarians. As a result, in no way do we minimize or dismiss the extraordinary fiscal and service delivery challenges facing legal aid programs and practitioners across the world today. Nevertheless, we believe it is important for legal aid plans and practitioners to begin thinking about and preparing for what is potentially the next “wave” of access to justice. To this end, we have assembled an early list of observations and strategies for legal aid plans to consider:

1. Legal aid plans should acknowledge that AI, algorithms and automated decision-making is a significant new frontier for access to justice. Legal aid plans have often been at the forefront of using technology to advance their client’s interests and rights. Many legal aid plans have made aggressive efforts to use technology to support document assembly, on line advice, public legal education, apps, videoconferencing, etc. The technology discussed in this paper goes much further. Automated decision-making raises new and crucial questions about access to justice and due process in areas of law that are the most important to legal aid plans, clients and low-income communities. This technology creates new legal issues, new client needs and potentially complex new barriers to access to justice and legal aid service provision.

2. The future is now (or at least coming soon). As in other areas of society, the growth of automated decision-making is taking hold in discrete sectors in the justice system. As noted above, this growth has the potential to spread rapidly to other areas of legal aid

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31 See, for example, AI Now Institute, Litigating Algorithms: Challenging Government Use of Algorithmic Decision Systems. The use of algorithms in government decision-making has been litigated in Canada as well. See Ewert v. Canada, 2018 SCC 30. For general questions around due process and automated decision-making, see Professor Lorne Sossin, The Algorithm of Fairness? Fairness and Digital Rights; Daniel Keats Citron, Technological Due Process; and Frank Pasquale, The Black Box Society.

32 See, for example, Berkman Klein Centre, Accountability Under the Law: The Role of Explanation.

33 See generally Ab Currie, Riding the Third Wave: Rethinking Criminal Legal Aid within an Access to Justice Framework.
practice, including criminal law, child welfare law, poverty law, immigration and refugee law. These are the core legal needs addressed by legal aid programs.

3. **Legal aid plans should make a concerted effort to understand where these technologies are being used (or in development) in their jurisdiction.** Unfortunately, there will never be a central list or repository of every automated decision-making system in use in the justice system. In Canada, these systems are often disclosed as a result of freedom of information requests, press reports, or review of government procurement websites. There is as yet no universal legal obligation to disclose the use of these systems. Disclosure of automated decision-making is complicated by the fact that these systems can be used by a variety of government actors, including federal or provincial government ministries, decision-making tribunals, municipal governments, and government agencies (such as school boards, police services, etc.). Unfortunately, this means that legal aid plans will have to work with others to methodically determine if how governments, courts, police agencies, tribunals, child welfare agencies and/or other agencies are currently using or contemplating using these technologies.

4. **Technologists and the digital rights community must become important access to justice and legal aid stakeholders.** In Canada at least, the traditional access to justice and legal aid communities have not been seriously engaged in digital rights issues. Legal aid advocates and practitioners are often unaware of digital rights issues or their potential impact on legal aid service provision. Nor does the emerging “digital rights” community include many of the organizations, lawyers, community clinics or other advocates typically involved in access to justice and legal aid. As a result, digital rights advocates have comparatively little knowledge of legal aid issues, priorities, or operations. Legal aid plans should bridge this gap by beginning to outreach to their local digital rights communities.

5. **Legal aid plans and litigators will have to develop a new set of skills to protect and promote their client’s rights in the future.** As this technology spreads, legal aid plans and litigators will need to develop new skills in new areas to best protect their client rights. To take one example: Automated decision-making will likely require new strategies and skills to address novel and complex evidential issues. These developments will create the need for new client service priorities, staff and service provider training, and litigation supports.

6. **Legal aid plans and advocates should begin to consider law reform, test case and individual litigation strategies for addressing these issues.** The technologies described in this paper will present countless new legal issues in individual litigation and systemically. Legal aid plans and advocates will need to ensure the new technologies are designed, disclosed, implemented, and audited in a way that respects due process, human rights, and access to justice principles. Promoting and protecting client interests and access to justice will require dedicated strategies at the policy level and in individual cases.
7. **Legal aid plans should think about these technologies both defensively and opportunistically.** Thus far, this paper has presented a pessimistic view of the impact of automated decision-making on access to justice, client needs and legal aid service provision. This outcome is certainly possible, but it is not inevitable. Recall our earlier discussion of predictive algorithms in policing, bail and sentencing. From one perspective, these systems are best used to predict crime or identify who shouldn’t be granted bail, etc. From the perspective of legal aid practitioners, however, the same data can be used in support of community supports and services. Similarly, predictive algorithms and “big data” could potentially be used by legal aid plans and access to justice advocates to reveal systemic bias, promote police and government accountability, and promote fairness and accountability in legal decision-making.

8. **Legal aid plans should begin to consider developing a dedicated digital rights specialty or community of practice within their program.** It goes without saying that legal aid plans have specialized units or practitioners who are experts in criminal law, family law, etc. Legal aid plans should consider developing equivalent – albeit smaller – organizational units or communities of practice dedicated to digital rights issues.

9. **Legal aid plans should work collaboratively on these issues.** These technologies are being developed, implemented and discussed on a local, regional, national and transnational scale. Governance initiatives such as standards for ethically aligned design are international in scope. Legal aid programs need to organize themselves collaboratively to better understand and respond to international technological developments. Organizations such as ILAG can play an important role.

10. **Finally, as a start, legal aid programs should begin to educate themselves about this technology and its potential impact on access to justice, client needs and the justice system.** To that end, we have attached a short reading list of materials that readers may find helpful.

**Conclusion**

Our goal in this paper was to summarize a crucial and growing issue confronting legal aid systems and access to justice advocates: the impact of algorithms, automated decision-making and artificial intelligence (AI) on human rights, due process and access to justice. We would be pleased to discuss these issues further will any person or organization attending the conference.

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34 [https://standards.ieee.org/industry-connections/ec/autonomous-systems.html](https://standards.ieee.org/industry-connections/ec/autonomous-systems.html)

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