

AI Ethics for Law Enforcement

A Study into Requirements for Responsible Use of AI at the Dutch Police

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This article analyses the findings of empirical research to identify possible consequences of using Artificial Intelligence (AI) for and by the police in the Netherlands, and ethical dimensions involved. We list the morally salient requirements the police need to adhere to for ensuring the responsible use of AI and, further, analyse the role of such requirements for governance of AI in the law enforcement domain. We list the essential research questions that can, on the one hand, help to flesh out more detailed criteria for the responsible use of AI in the police, and on the other, build a groundwork for the hard-regulation in the law enforcement environment of the Netherlands.

I. Introduction

Under the Dutch Police Law (Politiewet 2012) the task of the Dutch police is two-fold: (1) to ensure maintaining the rule of law and (2) to provide assistance to those in need.¹ The police have a special role in society that involves a constitutional right to use violence for the enforcement of the law.² For the police to function and realise its objectives, society has to deem the police as legitimate and trust that it is effective in its tasks.³ In order for the police to be trustworthy in their *efficacy*, they must continuously innovate to evolve with developments, stay ahead of criminals' new strategies and capabilities, and utilise new methods and technology for the fulfilment of their tasks.⁴ In order for the police to be trustworthy in their *use of power*, the police must demonstrate goodwill and respect for the rights of civilians. The National Police greatly values the trust of Dutch citi-

zens, which was measured to be the highest of any measured institution in 2017.⁵ It is important to retain this trust, also when introducing new technologies such as Artificial Intelligence (AI) that have a fundamental impact on the nature of their operations and interactions with society.⁶

AI has many potentially beneficial applications in law enforcement including predictive policing, automated monitoring, (pre-) processing large amounts of data (eg, image recognition from confiscated digital devices, police reports or digitized cold cases), finding case-relevant information to aid investigation and prosecution, providing more user-friendly services for civilians (eg with interactive forms or chatbots), and generally enhancing productivity and paperless workflows. AI can be used to promote core societal values central to police operations (human dignity, freedom, equality, solidarity, democracy, and the rule of law), but, on the other hand, values care-

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1 The Dutch Police Law (Politiewet) 2012

2 Joris Boumans, 'Technologische Evoluties in Wetshandhaving en Legitimiteit: Tussen Optimisme en Onbehagen' (MSc thesis, Tilburg University 2018)

3 Kees van der Vijver, 'Legitimiteit, gezag en politie. Een verkenning van de hedendaagse dynamiek' in C. D. van der Vijver and F. Vlek (eds), *De legitimiteit van de politie onder druk? Beschouwingen over grondslagen en ontwikkelingen van legitimiteit en legitimiteitstoekenning* (Elsevier 2006), 15-133

4 *ibid*

5 Centraal Bureau voor de Statistiek, 'Meer vertrouwen in elkaar en instituties' (*Centraal Bureau voor de Statistiek* 28 May 2018) <www.cbs.nl/nl-nl/nieuws/2018/22/meer-vertrouwen-in-elkaar-en-instituties> accessed 24 September 2019

6 Boumans (n2)

fully guarded in existing operations and procedures may also be challenged by the use of AI.

Currently the police in the Netherlands have been using AI in all applications mentioned above. For example, the ‘Crime Anticipation System’ (CAS) is an internally developed predictive-policing tool that aims to predict crimes with statistics based on data from various sources.⁷ ‘Pro-Kid 12- SI’ (pronounced “Pro-Kid twelve-minus”) is a rule-based system for risk assessment on children aged between 0-12 years, used nationwide by the police to prevent children from being involved in a crime or anti-social behaviour.⁸ The Online Fraud Report Intake System uses NLP techniques, computational argumentation (legal informatics) and reinforcement learning to assist civilians in reporting the crime.

It is impossible to anticipate all the effects of the use of AI in society, and more specifically, in the law enforcement domain. Therefore, it is essential that adoption and use of any application be continuously evaluated, in order for the Dutch police to ensure policing practices in line with the values acknowledged by the Dutch state and the European Union.

With this goal in mind, we conducted an empirical study to identify possible consequences of using AI for, and by law enforcement and the ethical issues this may lead to. On the basis of this research, we have co-written a white paper for the Dutch police: *‘AI & Ethics at the Police: Towards Responsible Use of Artificial Intelligence in the Dutch Police’* (hereafter Whitepaper).⁹ It describes the state-of-the-art in AI, how it could benefit law enforcement, and what ethical concerns will need to be addressed in the use of AI in order to safeguard the legitimacy of and trust in the national police.

II. On the Law and Ethics: The Role of Ethics in Law Enforcement

Similar to other authorities of the state, the police necessarily operate within a specific legal framework. This framework includes but is not limited to preventing misuse of powers, conflicts of interest and discrimination, and is ensured through active accountability measures. The police organisation in the Netherlands is committed to protect fundamental human rights and to ensure respect for the rule of law.¹⁰ The police is directly obliged to comply with domestic and international legal instruments that specify

this commitment, like the national constitution, the EU Charter, specific national legislative acts, and the EU directives and regulations like the General Data Protection Regulation (GDPR) or Law Enforcement Directive (LED). These legal requirements apply to all police work regardless of the means used and thus include the use of AI.

In a democratic state such as the Netherlands, compliance with holding laws and regulations must be seen as a given for any application of AI. However, the application of AI raises some challenges that are not—or it is unclear if they are—covered by current legal provisions. For example, while the legislation might not require full openness, the opacity of reasoning that is inherent to some AI techniques might decrease transparency and weaken human agency in the police’s decision-making, and thereby pose a threat to the legitimacy of and trust in the police.¹¹ Therefore, for such spaces left open by the law, the police *can*, and we advise that they *should*, incorporate ‘ethics’ through practical measures to ensure responsible use of AI and contribute towards enhancing (rather than limiting) legitimacy of and trust in the police.

In common use, the term ‘ethics’ refers to a set of accepted principles on what is (morally) right or wrong within and for a certain community. The Dutch government and the law enforcement in particular are expected to act coherently and out of the principles of the Dutch (and larger European) community. This expectation of responsibility extends to the use of AI by the Dutch police. To act responsibly means to accept moral integrity and authenticity as

7 Serena Oosterloo and Gerwin van Schie, ‘The Politics and Biases of the ‘Crime Anticipation System’ of the Dutch Police’, Jo Bates, Paul D. Clough, Robert Jäschke and Jahna Otterbacher (eds), *Proceedings of the International Workshop on Bias in Information, Algorithms, and Systems* (CEUR Workshop Proceedings 2018) 30-41

8 Karolina La Fors-Owczynik and Govert Valkenburg, ‘Risk Identities: Constructing Actionable Problems in Dutch Youth’, I. van der Ploeg and J. Pridmore (eds), *Digitizing Identities. Doing Identity in a Networked World* (Routledge/Taylor & Francis Group 2016) 103-124

9 Francien Dechesne, Virginia Dignum, Lexo Zardiashvili and Jordi Bieger, ‘AI and Ethics at the Police: Towards Responsible Use of Artificial Intelligence at the Dutch Police’ (*Whitepaper*, 2019) <https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-metajuridica/artificiele-intelligentie-ethiek-bij-de-politie/ai-and-ethics-at-the-police-towards-responsible-use-of-artificial-intelligence-at-the-dutch-police-2019..pdf> accessed 24 September 2019

10 Politiewet 2012 (n1), art 2

11 Dechesne and others (n9)

ideals and to deploy reasonable effort toward achieving them.¹² For the Dutch government striving for moral integrity means adhering to the values of *freedom, equality, and solidarity*.¹³ These values are three from four values the European Union (EU) is aiming to uphold, with *dignity* being the fourth.¹⁴ Note that, although the Dutch government has not yet accepted proposals by a specially established commission (established by the Cabinet for constitutional amendments), to include value of *human dignity* explicitly in the text of the Dutch Constitution, it acknowledges dignity as a fundamental value that human rights aim to uphold.¹⁵ *Human rights*, on the other hand, together with *democracy*, and *rule of law*, are often referred as the general principles of the Dutch constitution,¹⁶ of the EU,¹⁷ and of also larger European community (Council of Europe).¹⁸

The four *values* (dignity, freedom, equality, solidarity) and three *principles* (human rights, democracy, rule of law) provide a framework for the moral integrity that the Dutch government (and in this case the Dutch police) has to continuously strive towards. However, societal order as a moral milieu cannot be sustained by reference only to generally expressed values – therefore formal (statutory and case) law is

intended to fill in the gap and operationalise these abstract ideals. On the other hand, such moral milieu cannot be built upon strict textually-rooted rules alone.¹⁹ For example, in the context of state-of-the-art technology, formal law fails to be the omnibus governance solution: existing legislation is not perfectly suited to address unprecedented scope of actions that AI allows, and regulatory intervention (among other things) might prevent potential advantages from materialising.²⁰

Therefore, maintaining responsible action (moral integrity) requires a proper balance to be struck between ‘rule’ and ‘value’. What this means in the context of using AI is that, unprecedented *modus operandi* to the formal law does not relieve the Dutch police from an obligation to strive towards moral integrity. We have evaluated the use of AI by the law enforcement through the lens of the (European) *values* (dignity, freedom, equality, solidarity) and *principles* (human rights, democracy, rule of law) that the Dutch police aims to uphold, and identified *requirements* for ensuring responsible use of AI within the police.²¹ We provide the overview of identified requirements in the next chapter.

III. Requirements for the Responsible Use of AI by the Dutch Police

We identified requirements and recommendations for the responsible use of AI at the Dutch police. They include, (i) accountability, (ii) transparency, (iii) privacy and data protection, (iv) fairness and inclusivity, (v) human autonomy and agency, and (vi) socio-technical robustness and safety.²² While these requirements are morally salient, they do not occupy the same level of hierarchy as the *values* and the *principles* discussed in the chapter II (hence the term *requirements*). Rather these requirements are intended to provide guidance on how to ensure that the police use of AI is coherent to the high-level *values* (ie dignity) and the *principles* (ie democracy):

1. *Accountability* – In the context of using AI for and by the police, ‘accountability’ is a requirement that refers to the ability to hold the police personnel or the entire police organisation answerable and/or responsible (and/or sometimes liable) for an action, choice or decision by AI. Tracing (causal) responsibility can be complicated when human decision makers are (partially) replaced or augment-

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- 12 Ronald Dworkin, ‘Justice for Hedgehogs’ (The Belknap Press, 2011) 111
- 13 Ministry of Social Affairs and Employment, ‘Core Values of Dutch Society’ (*Pro Demos, House of Democracy and Constitution*, 2014) <https://www.prodemos.nl/wp-content/uploads/2016/04/KERNWAARDEN-ENGELS-573-623800.pdf> accessed 17 October 2019
- 14 Charter of Fundamental Rights of the European Union (The EU Charter), 26 October 2012, 2012/C 326/02
- 15 Jan-Peter Loof, ‘Human Dignity in the Netherlands’ in Paolo Becchi, Klaus Mathis and Jan-Peter Loof (eds.), *Handbook of Human Dignity in Europe* (Springer International Publishing 2017) 423
- 16 *ibid*
- 17 The EU Charter, Preamble; see also European Union, ‘Goals and values of the EU’ https://europa.eu/european-union/about-eu/eu-in-brief_en accessed 17 October 2019
- 18 Council of Europe, ‘Values – Human Rights, Democracy, Rule of Law’ <https://www.coe.int/en/web/about-us/values> accessed 17 October 2019
- 19 Chief Justice Allsop AO, ‘Values in Law: How They Influence and Shape Rules and the Applications of Law’ (*Hochelaga Lecture*, 2016) https://www.fedcourt.gov.au/digital-law-library/judges-speeches/chief-justice-allsop/allsop-cj-20161020#_ftn3 accessed 17 October 2019
- 20 Ronald Leenes and others, ‘Regulatory challenges of robotics: some guidelines for addressing legal and ethical issues’ (2017) 9 (1) *Law, Innovation and Technology*, 7
- 21 Dechesne and others (n9)
- 22 *ibid*

ed by AI systems that cannot themselves carry moral responsibility or be accountable. Accountability can be improved if these systems can be reviewed (auditability), and if the decisions that they make explained and justified (explainability) on the technical level. Moreover, independent evaluations should be able to verify and reproduce the AI-system's behavior in all situations (reproducibility).²³ In cases where tracing responsibility is not feasible (and possibly others), clear agreements should be made about who is accountable (eg the owner, operator or programmer of an AI system).

2. *Transparency* – Transparency is an important component in ensuring trust and figuring out who or what is accountable for potential problems with AI systems. With transparency, we must always ask 1) about what, 2) to whom and 3) how much transparency should be provided, and of course to what end. We can be transparent for example about people, rationale, operations, or data involved in decision-making. We can be transparent for courts, police organisation, or to the public. Perhaps giving everyone full access to everything is not productive, and it can even be dangerous if it lets bad actors find ways to exploit or circumvent the police's AI. Transparency is a gradual matter, and the same holds for explainability and interpretability: we have to take into account that in the context of AI only parts of a decision may be interpretable, or that explanations only give a rough idea of what happened.
3. *Privacy and Data Protection* – The Police has a (legal) obligation to take the privacy of civilians into consideration in their operations. Where civilians can reasonably expect to be private is being altered by the current technology that allows personal data from many different spheres to be processed on an unprecedented scale, also for law enforcement purposes (eg prevention, investigation, detection or prosecution of criminal offences). AI can increase the information-gathering capabilities of the police, because of its ability to combine and analyze vast quantities of data from different sources, and therefore has an immense impact on privacy.
4. *Fairness and Inclusivity* – AI systems can play an important role in the inclusivity and accessibility of police services. For instance, reporting of a crime will be accessible to more people if more reporting methods are available, eg in person at a police station, by phone and online. Intelligent

chatbots can make reporting crimes more accessible for some by increasing accessibility, user friendliness and catching errors that might otherwise be made on static forms. One should however be careful that the range of methods offered is indeed usable by all, including eg blind people or (computer) illiterate people. If this is not feasible for the main method, alternatives should (continue to) be provided. AI can also increase usability by eg adding speech recognition functionality (which can help people who can't type text). It is also important to ensure that decisions informed by AI are free from bias which could result in the unfair or discriminatory treatment of (groups of) civilians. This requires rigorous acquisition, management, development and evaluation of AI systems and algorithms as well as the data they use. Since there are different conceptions of fairness, presenting different tradeoffs depending on the situation, an informed case-by-case analysis is necessary for the responsible use of AI by the police. In the end, (human) police employees will need to decide what to do with the information and recommendations provided by AI, raising questions about what kind of action is appropriate: eg if a suspect has not done anything wrong yet, but an (imperfect) AI system predicts that they might in the future, what interventions balance the rights of the as-of-yet innocent civilian with the need to prevent serious crimes?

5. *Human Autonomy and Agency* – Preserving the human sense of agency is mainly an individual-level requirement to realise the high-level values (i.e. freedom) and should help with both job satisfaction and the ability to provide meaningful human control. Problems can occur with decision support systems that recommend a course of action that must then be evaluated by a human operator. People are increasingly willing and expected to delegate decisions and actions to machines (eg recommender systems, search engines, navigation systems, virtual coaches and personal assistants). A possible consequence of working with AI systems is the loss of a sense of agency: the ability to act freely. Especially with systems that are very accurate in some respect, human operators may be

23 Matthew Hudson, 'Artificial Intelligence Faces Reproducibility Crisis' (2018), 359 (6377) *Science* 725-726

‘nudged’ to act upon the outcome of the system without further critical deliberation. This can not only invalidate an operator’s sense of agency, but also fails to utilise human capabilities that AI systems typically still lack, such as commonsense reasoning, looking at the bigger picture, and adapting to unforeseen situations.

6. *(Socio-technical) Robustness and Safety* – AI systems must be developed and deployed with an awareness of the risks and benefits of their use, and an assumption that despite ample preventative measures, errors will occur. They must be *robust* to errors and/or inconsistencies in their design, development, deployment and use phases, and degrade gracefully in extraordinary situations, including adversarial interactions with malicious actors. Errors and malfunctions should be prevented as much as possible, and processes should be in place to cope with them and minimise their impact.²⁴ An explicit and well-formed development and evaluation process is necessary to ensure performance, robustness, security and safety.

The Dutch Police acts to maintain societal order by enforcing the law. The law itself is a set of binding rules that aim to uphold the values within society. While a set of binding rules can guide the only limited amount of police actions, societal values are always present, and the activities of the police are responsible only when adhering to these values. If AI is to be utilised, the police is compelled to take into consideration morally salient requirements de-

scribed in this chapter, to ensure responsible action (responsible use of AI). How can these requirements influence the set of binding rules will be discussed in the next chapter.

IV. Ethics and the Re-evaluation of Law

Alongside the rapid development of AI, there is a proliferation of articles and policy documents about the governance of AI, some of which seem to suggest ‘ethics’ as the solution for ensuring responsible use of AI. Few months before we delivered the Whitepaper to the Dutch police, researchers at Berkman Klein Center identified and positioned thirty-two sets of policy documents side by side, enabling comparison between efforts from governments, companies, advocacy groups, and multi-stakeholder initiatives.²⁵ Thirteen of the thirty-two documents presented in this study discuss the responsibility of governments in the context of AI, as we did in our Whitepaper. These documents acknowledge that the existing set of legal rules is not able to fully deal with the impacts of AI, and propose guidance for maintaining moral integrity of governmental actions by reflecting upon ethical *values* and *principles*.²⁶

However, contrary to some of these governmental²⁷ and most of the private sector²⁸ policy documents, our whitepaper did not intend to come up with the new set of *principles* for the use of AI within the Dutch police. Rather, we looked at the *values* and the *principles* that the Dutch police, as the law enforcement body of the Dutch state, is already obliged to adhere to and identified what is *required* to ensure such coherence (and therefore responsible use of AI). Moreover, we believe that ethical *values* and *laws* are ‘expressions along a gradation of particularity’ rather than ‘clearly identifiable separate vehicles.’²⁹ In this sense, *law* conforms to *ethics*, as the latter provides ‘a gauge to the law’s flexibility’, and its ‘avenue for growth’.³⁰

In other words, while ethical reflections provide advantages as an open norm-setting venues for the governance of AI within the law enforcement, such considerations could do more by going beyond technical interpretations of morally salient requirements (ie accountability, transparency)³¹, and serve as the lens through which existing legal frameworks (including frameworks regulating the activities of the police) are re-evaluated, to see if improvements are

24 High Level Expert Group on Artificial Intelligence, ‘Ethics Guidelines for Trustworthy AI’ (High-Level Expert Group On Artificial Intelligence, The European Commission 2019)

25 Jessica Fjeld and others, ‘Principled Artificial Intelligence: A Map of Ethical and Rights-Based Approaches’ (Berkman Klein Center 2019) <https://ai-hr.cyber.harvard.edu/images/primp-viz.pdf> accessed 24 September 2019

26 see Federal Government of Germany, ‘AI Strategy’ (2019)

27 see Smart Dubai, ‘AI Principles and Ethics’ (2019) <https://www.smartdubai.ae/> accessed 18 October 2019

28 see Sundar Pichai, ‘AI at Google: Our Principles’ (Google, 2018) <https://www.blog.google/technology/ai/ai-principles/> accessed 18 October 2019

29 Chief Justice Allsop AO (n 21)

30 *ibid*

31 Corinne Cath, ‘Governing artificial intelligence: ethical, legal and technical opportunities and challenges’ (2018), 376 (2133) *Philosophical Transactions of the Royal Society A Mathematical, Physical and Engineering Sciences*

possible.³² In the end, such re-evaluation seems to be the last logical step as the absence of adequate formal rules, might ‘confound law by a drift into a formless void of sentiment and intuition.’³³

V. Further Research in Responsible Use of AI in Law Enforcement

As the complete picture of the effects of the use of AI technology cannot be anticipated, not all ethical and societal impacts of the use of AI at the law enforcement body of the Netherlands could be covered in the short study of the Whitepaper.³⁴ Therefore, ethical evaluation of the use of AI by the law enforcement needs to be continuous to be able to transform concerns into better laws. With this goal in mind, we identified the following research directions on AI and ethics at the police,³⁵ divided into tracks for (1) impact on humans, (2) organisational embedding, and (3) technical work:

1. Impacts on Humans:

- a. *Impacts on Human Dignity* – Human dignity is the inviolable value upon which the human rights framework rests. It illustrates the fundamental belief in the intrinsic worth of a human being, protecting his/her autonomy and self-determination. Belief in human dignity can be understood as the *raison d’être* for the law the police aims to enforce.
- b. *Public Trust* – Public perception of the legitimacy of the police and subsequent trust is as important as the legal framework in which the police operate. While automation and prediction to some extent increase efficacy of the police, the study could explore if such increase in potency is desirable from the societal perspective.

2. Impacts on the Police Organisation:

- a. *Ethics Guidelines and Oversight* – The police does not operate in isolation, and the use of AI takes place across the entire judicial chain: OM, local government, the Ministry of Justice and Security, judiciary. Responsible use of AI within the Dutch police ideally follows from a robust ethics framework for the entire chain. Such a framework can establish criteria to follow

throughout the AI development and application cycle.

- b. *Impacts on Police Personnel* – AI can be used to support the police organisation in achieving its goals of efficiency, traceability, uniformity and integrity. However, the change of operations may come with displacement of employees and changing roles. Research is required to ensure that workers with non-traditional skillsets fit into the police organisation in a way that empowers police personnel.

3. Technical Aspects

- a. *Explainable AI* – The aforementioned oversight can only be adequate and meaningful if automated decisions can be explained and justified on the technical level.
- b. *Justifiable/Verifiable AI* – Justification provides the reasons behind the results and the choices for particular approaches. Mathematical tools for formal verification make AI systems themselves and their decisions reviewable.

Further research is essential so that the police continues to realise their dual goals of increasing (a) efficacy and efficiency, and (b) trust and trustworthiness (to boost public trust and the perception of the legitimacy of the police). The research in the areas described above will help us re-evaluate the formal rules regarding law enforcement, and also make societal requirements transparent to both the police and the public and ultimately enable codification in the legal frameworks.

VI. Conclusions

This article has analysed the role of the morally salient requirements for governance of AI, that were

32 Luciano Floridi, and others, ‘AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations’ (2018), 28(4) *Minds and Machines* 689–707

33 Chief Justice Allsop AO (n 21)

34 Whitepaper (n 13)

35 Francien Dechesne, Virginia Dignum, Lexo Zardiashvili and Jordi Bieger, ‘Long-Term Research Strategy for AI and Ethics at the Police’ (Report 2019) <https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-metajuridica/artificiele-intelligentie-en-ethiek-bij-de-politie/research-strategy-ai-ethics-dutch-police-final.pdf> accessed 24 September 2019

found in an empirical study within the law enforcement domain – in particular: at the Dutch Police. We have argued that there are instances, where the need for soft regulatory instrument arises, and we have described how ethical considerations can help fulfil this need. Our analysis suggests that the responsible use of AI at the Dutch police requires primarily the following requirements: accountability, transparency, privacy, fairness and inclusivity, human autonomy and agency and socio-technical robustness and safety.

Furthermore, we explored the role of these requirements in a future re-evaluation of the formal binding instruments. Finally, we identified the areas where further research is advisable for ensuring the responsible use of AI at the Dutch police. On the one hand, such research can help flesh out more detailed criteria for the police on how to adhere to the values and principles of the Dutch state. On the other, it can build a groundwork for the hard-regulation for the use of AI in the law enforcement ecosystem of the Netherlands.