

# Een overzicht van academische studies naar de evaluatie van Intelligence-Led Policing

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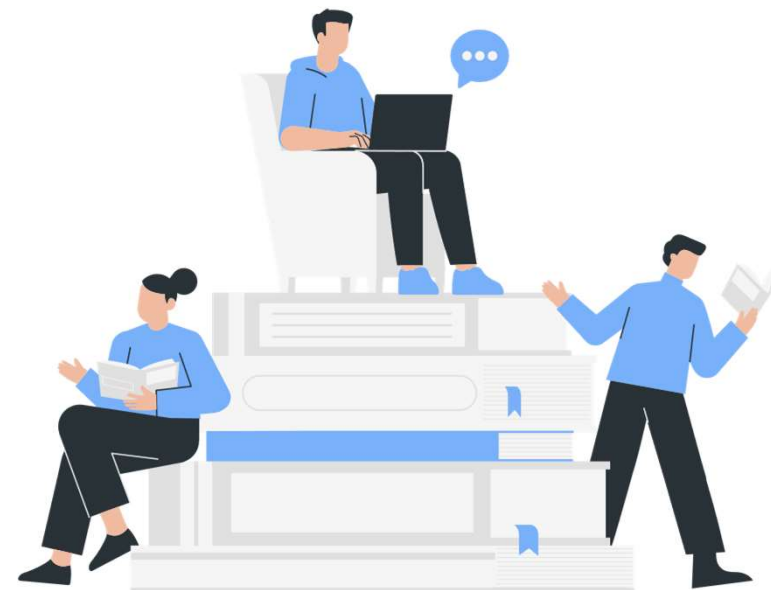
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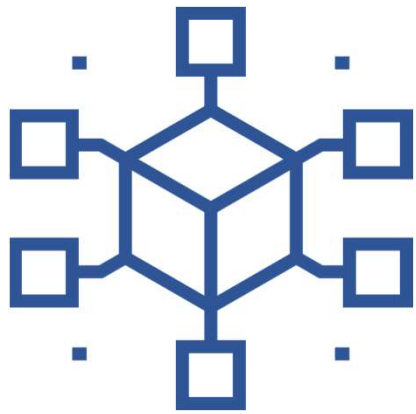
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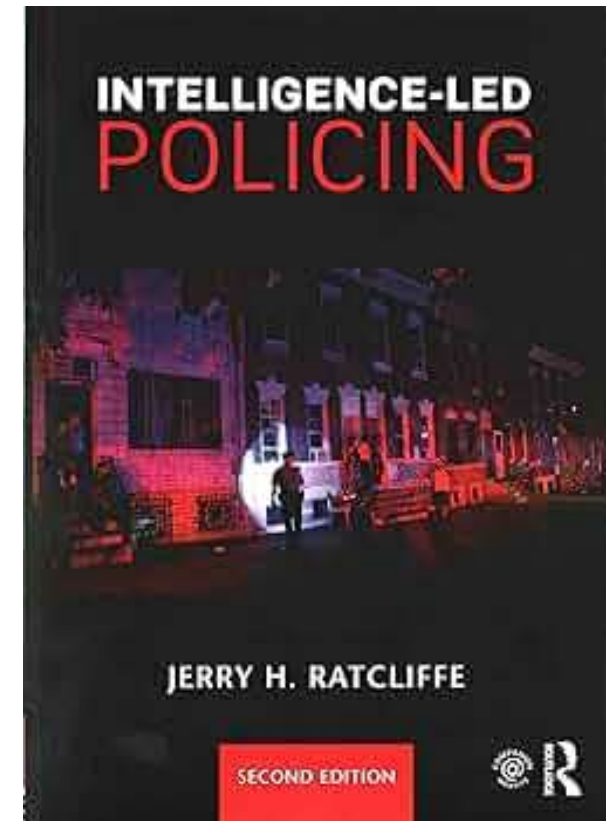


# 1. Inleiding



# Inleiding

- Intelligence-Led Policing is geen nieuw concept/raamwerk – **National Intelligence Model** in VK (1990)
- Er was nood aan **proactieve filosofie** complementair aan 'traditionele reactieve werking/houding'
- Rol en vorm van 'intelligence' wordt steeds meer beïnvloed door **digitalisering** en **dataficatie** (c.q., big data en big data analytics)
- ILP steeds meer gezien als raamwerk waarbinnen processen van digitalisering en dataficatie ook daadwerkelijk geïmplementeerd kunnen worden en vorm kunnen krijgen



# Inleiding

- Hoewel concept bekend is, is er weinig geweten over *'evidence-base'* van ILP (ook duidelijk nood aan conceptuele duiding)
- ILP is dan ook **geen interventie of programma in enge zin**, maar eerder een raamwerk/paradigma waarbinnen interventies vormgegeven kunnen worden
- Desalniettemin bestaan er wel **specifieke interventies** die relateren aan het raamwerk van ILP (hot spots policing, predictive policing, offender-focused policing etc.)

Original Research Article

## 'Led by Intelligence': A Scoping Review on the Experimental Evaluation of Intelligence-Led Policing

Evaluation Review  
2023, Vol. 0(0) 1–51  
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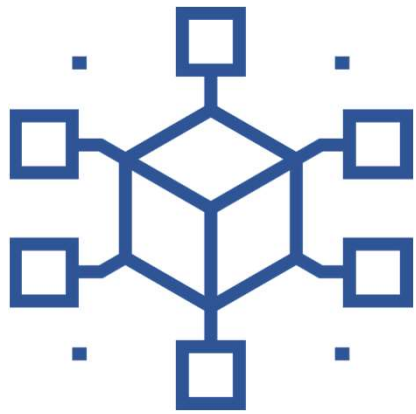
Robin Khalfa<sup>1</sup> and Wim Hardyns<sup>1,2</sup>

### Abstract

Intelligence-led policing (ILP) was introduced in the 1990s as a proactive approach to policing, but to date, there is a lack of studies that have synthesized and summarized the central characteristics and insights of (quasi-) experimental studies related to ILP. This study aims to address this gap by synthesizing and characterizing the central characteristics of 38 quasi-experimental and experimental studies related to ILP. In this study, a scoping review is conducted on different quasi-experimental and experimental studies that relate to the framework of ILP. It was found that most studies within the domain of ILP focus on testing the crime reduction effects of using spatio-temporal crime intelligence to deploy police resources more efficiently and effectively. However, some studies have combined different types of crime intelligence or used solely offender-related intelligence. Several statistical-methodological challenges were also identified that should be considered when designing experimental research within the domain of ILP. Additionally, most studies focused solely on measuring crime reduction, with few focusing on secondary effects of interventions. The review concludes that future evaluation studies should consider evaluating the use of different types

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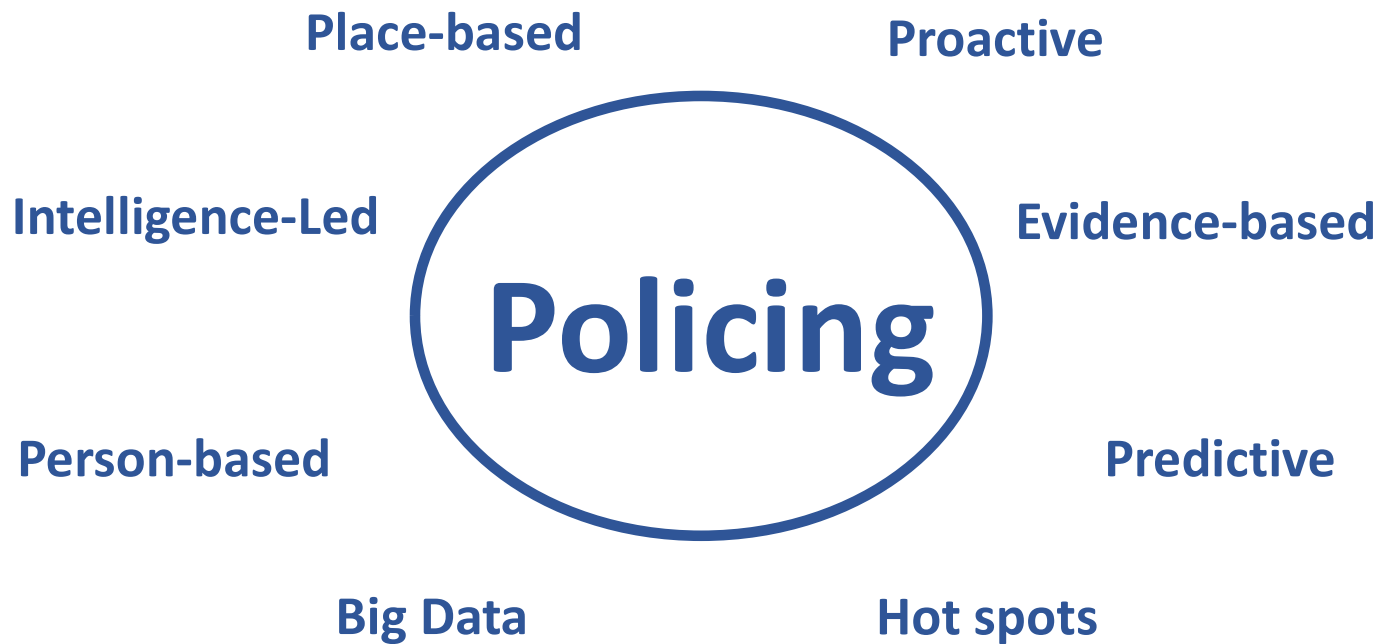


## 2. Conceptueel kader



# Conceptueel kader

Kluwen aan concepten = conceptuele verwarring (?):



# Conceptueel kader

Voorbeeld: **Big Data Policing = Predictive Policing ?**



## Big data (analytics)

- Descriptive analytics
- Diagnostic analytics
- Predictive analytics
- Prescriptive analytics



## Policing

- Werk op straat
- Opsporing en recherche
- Intelligence

(Schuilenburg & Soudijn, 2023)

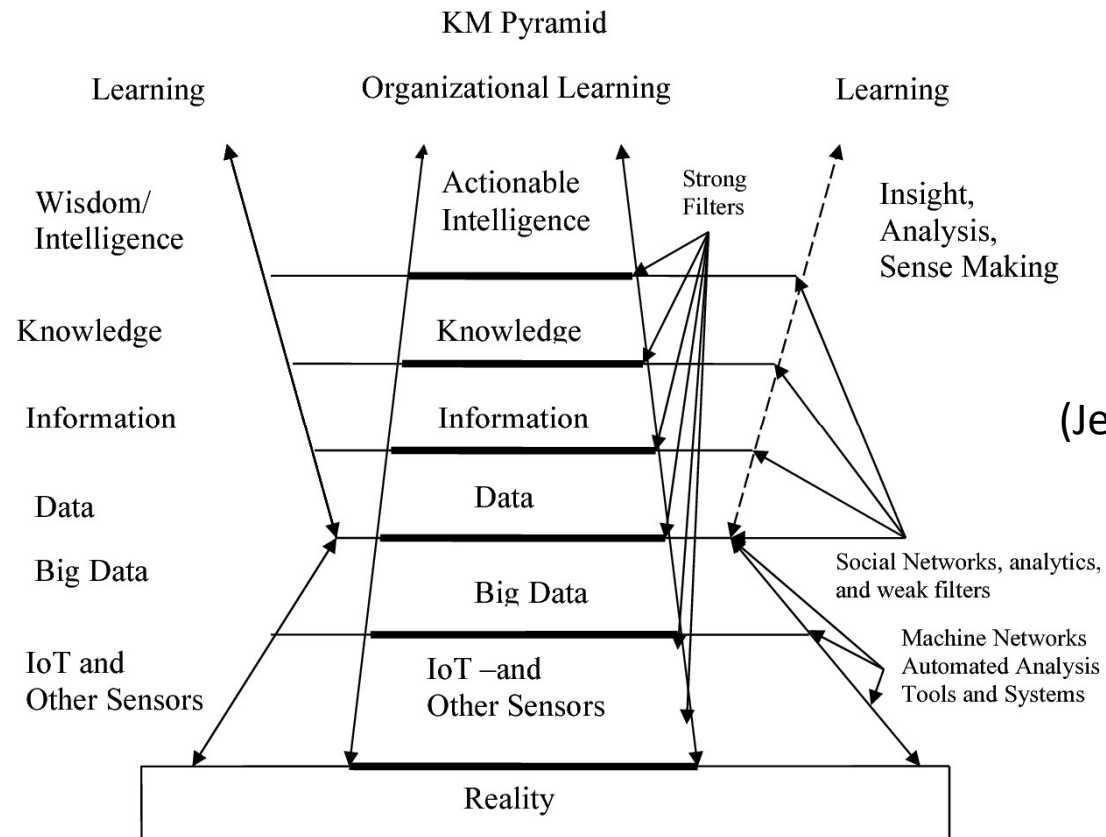


# Big data policing ≠ Predictive policing

		<i>Big data analytics</i>			
		<i>Descriptive</i>	<i>Diagnostic</i>	<i>Predictive</i>	<i>Prescriptive</i>
<i>Typen van politiewerk</i>	<i>Intelligence</i>				
	<i>Werk op straat</i>				
	<i>Opsporing</i>				

“It is striking, however, that the literature on the use of big data and algorithms to fight crime mainly seems to focus on forms of predictive policing, and the negative effects of these applications on citizens (...). The danger of such a one-sided approach is that the concept of big data policing is narrowed down to the police as an institution and the pre-emptive logic of policing” (Schuilenburg & Soudijn, 2023, p. 7)

# (Big) Data ≠ Intelligence



(Jennex, 2017)

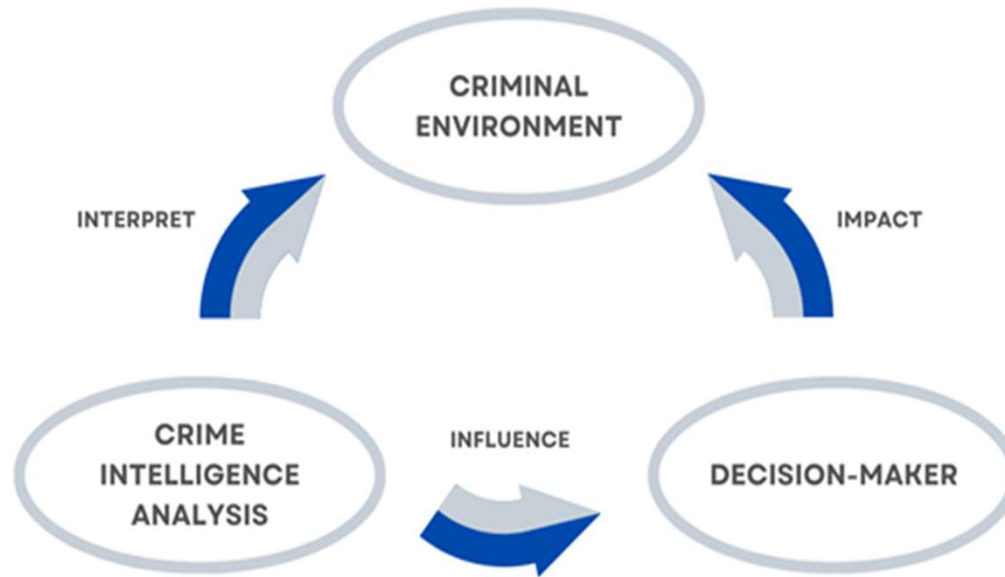
# Conceptueel kader

- Weinig ‘tastbare’ definities van wat ILP nu eigenlijk is
- Één van de meest gebruikte (en tastbare) definities is van Jeremy Ratcliffe (2016):

**Intelligence-led-policing emphasises analysis and intelligence as pivotal to an objective, decision-making framework that prioritises crime hotspots, repeat victims, prolific offenders, and criminal groups. It facilitates crime and harm reduction, disruption, and prevention through strategic and tactical management, deployment, and enforcement (Ratcliffe, 2016, p. 66).**

# Conceptueel kader

## Het 3-i model



# Conceptueel kader

Kluwen aan concepten = conceptuele verwarring (?):

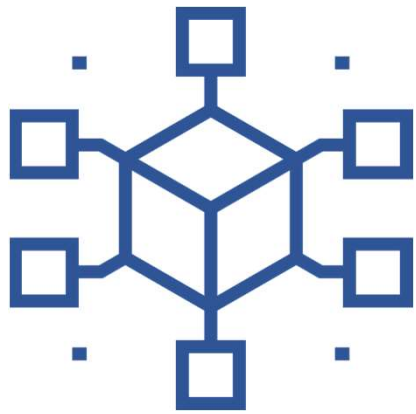


# Conceptueel kader

- Conceptualisering van ILP is echter sterk gerelateerd aan bestaande ‘proactieve’ raamwerken zoals **Community Oriented Policing (COP)** en **Problem-Oriented Policing (POP)** (en CompStat)
- “ILP built on experiences from the past, the organisational climate of the time, and the aspirations of its architects” (Ratcliffe, 2016, p. 50)
- Verschillen zijn echter weinig tot niet duidelijk in evaluatiestudies

**Appendix 2:** Structural Differences Between ILP, POP and COP.

Framework	Intelligence-Led Policing (ILP)	Problem-Oriented Policing (POP)	Community-Oriented Policing (COP)
Primary focus	Collecting, analyzing, and using crime intelligence for strategic, tactical, and operational policing purposes	Identifying, understanding, and addressing causes of crime and other police or community related problems	Building community trust and partnerships
Primary objective(s)	To allocate police resources more efficiently in order to reduce, prevent, and/or disrupt crime and/or harm more effectively	Understanding and solving community problems and the underlying conditions of crime and disorder	Enhancing community safety, improving relationships between the police and citizens and empowering community members
Central methodology	3-i model	SARA methodology	No real methodology—only application of central assumptions that focus on empowering communities and the relationship between communities and the police
Level at which priorities are determined	Police management (incl. crime analysis)	Varies from problem to problem	Community
Structure	Top-down	Depends on the nature of the problem	Bottom-up
Intended outcome(s)	Detection, reduction, prevention, or disruption crime and/or harm	Solving/reduction of the problem(s)	Increased police legitimacy and satisfied community



# 3. Methodologie

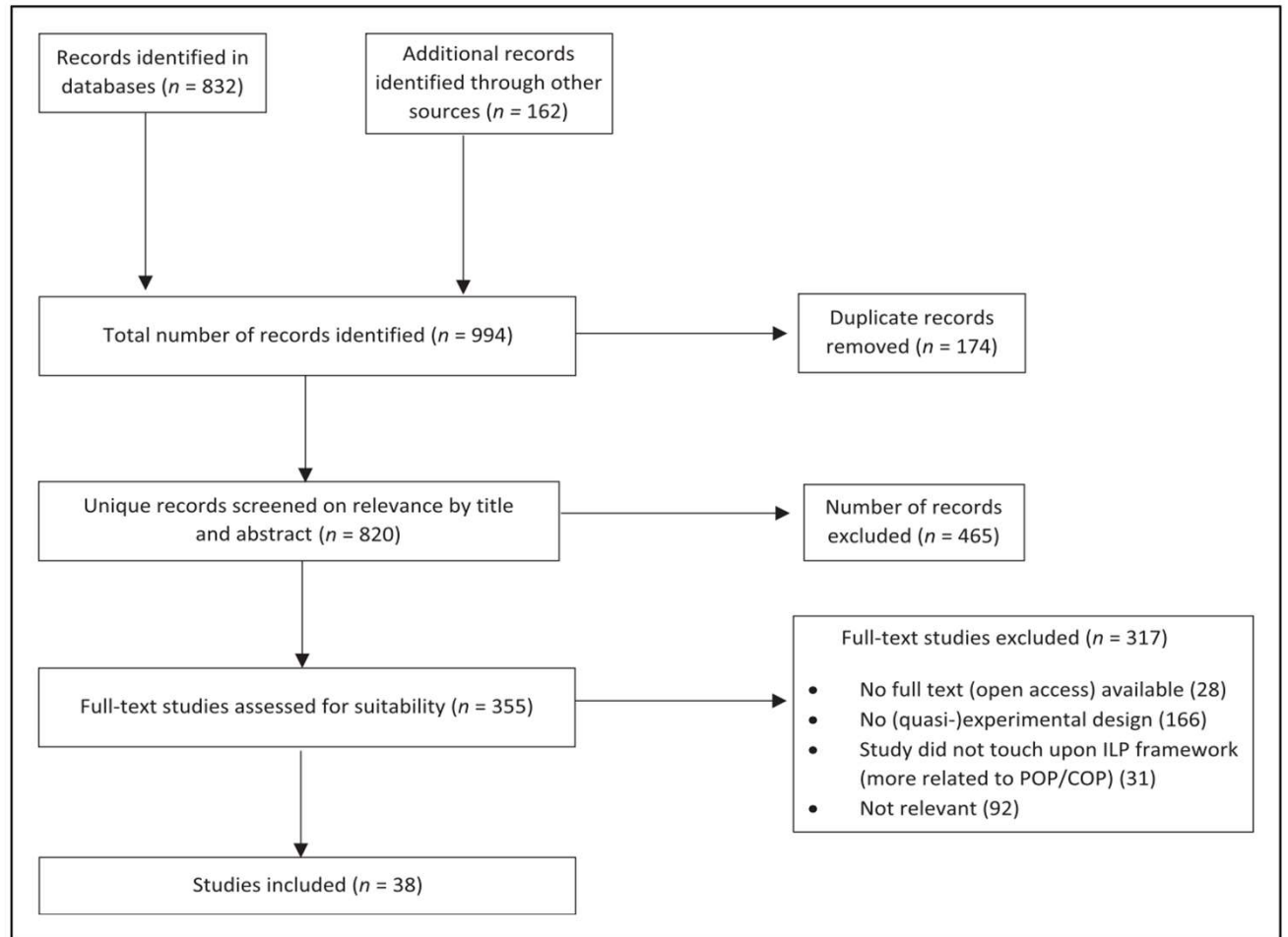


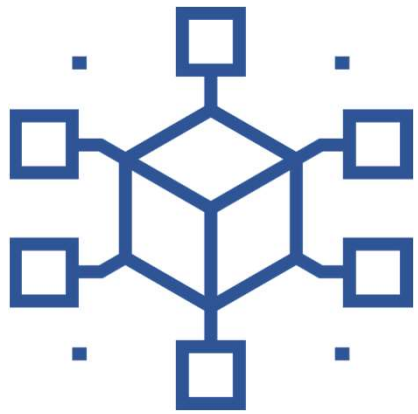
# Methodologie

- Scoping review methodologie (Arksey & O'Malley, 2006)
- Vier centrale onderzoeksvragen:
  1. Wat zijn de centrale kenmerken van de geïncludeerde studies?
  2. In welke mate en hoe relateren de studies aan het 3-i model van ILP?
  3. Wat zijn de belangrijkste methodologische uitdagingen inzake het opzetten en uitvoeren van (quasi-)experimenteel evaluatieonderzoek in het domein van ILP?
  4. Wat zijn de belangrijkste soorten van primaire en secundaire effecten gerapporteerd doorheen de geïncludeerde studies?
- Zoektocht in drie belangrijkste wetenschappelijke databases naar evaluatiestudies gepubliceerd tussen 2000 – 2023 (Web of Science, Scopus & Proquest + Google Scholar)



# Methodologie

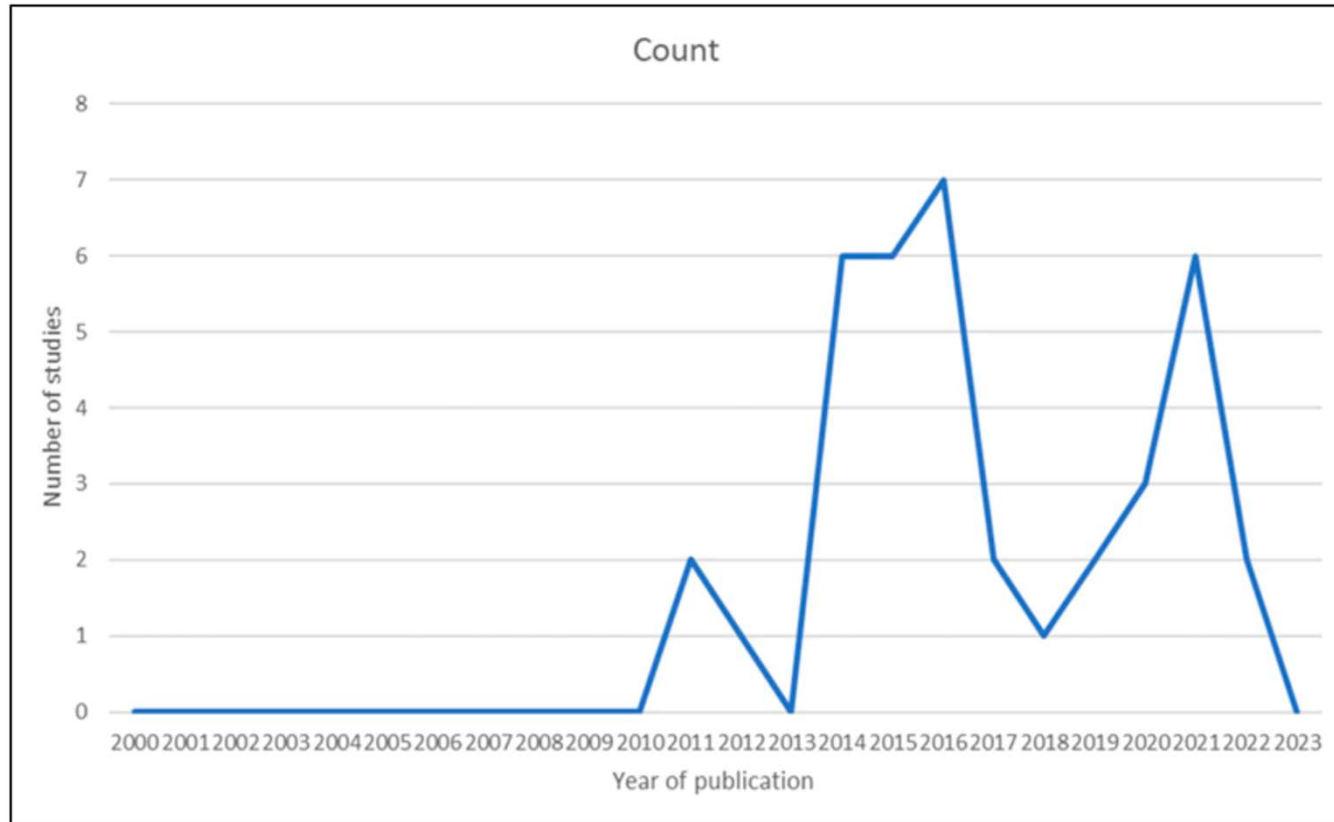




## 4. Centrale bevindingen



# Centrale bevindingen



# Centrale bevindingen

**Table 1.** Central Characteristics of the Included Studies.

Characteristic	Frequency	Percentage, %
Experimental design ( <i>n</i> = 38)		
Quasi-experimental	14	36.8
Randomized controlled trial (experimental)	24	63.2
Crime type ( <i>n</i> = 55)		
Violent crime	24	43.6
Property crime	11	20.0
Drug crime	5	9.1
Disorder	3	5.5
Other	5	9.1
Not specified (e.g., overall crime)	7	12.7
Unit of analysis ( <i>n</i> = 41)		
Hot spots (general)	6	14.6
Street segments	5	12.2
Street blocks	3	7.3
Grid cells (with/without specified time unit)	3	7.3
Micro-time hot spots	2	4.9
Districts (with/without specified time unit)	2	4.9
Individuals	2	4.9
Census block groups	1	2.4
Police shifts (days)	1	2.4
Gang turf/faction	1	2.4
Police beat	1	2.4
Offending network	1	2.4
Not reported	2	4.9
Other	11	26.8

# Centrale bevindingen

**Table 2.** Analytical Techniques Used in (Quasi-)Experimental Studies (Treatment Condition).

Analytical Technique ( <i>n</i> = 49)	Frequency	Percentage, %
Retrospective hotspot analysis/mapping	20	40.8
Prospective hotspot analysis/mapping	10	20.4
Predictive hotspot analysis/mapping	6	12.3
General operational intelligence analysis	7	14.3
Offender identification and analysis	2	4.1
Predictive social network analysis	1	2.0
Social network analysis	1	2.0
Gang turf mapping	1	2.0
Analysis of AVL data	1	2.0

# Centrale bevindingen

**Table 3.** Intelligence Products Used in (Quasi-)Experimental Studies (Treatment Condition).

Intelligence Product ( <i>n</i> = 51)	Frequency	Percentage, %
Retrospective hot spot map/list	16	31.4
Prospective hot spot map/list	9	17.7
Predictive hot spot map/list	5	9.8
Hot spot map with chronic and temporary hot spots	1	2.0
Intelligence bulletin	6	11.8
Retrospective offender subject list	3	5.9
Predictive offender subject list	1	2.0
Gang turf map	1	2.0
Social network map	1	2.0
Other	8	15.7

# Centrale bevindingen

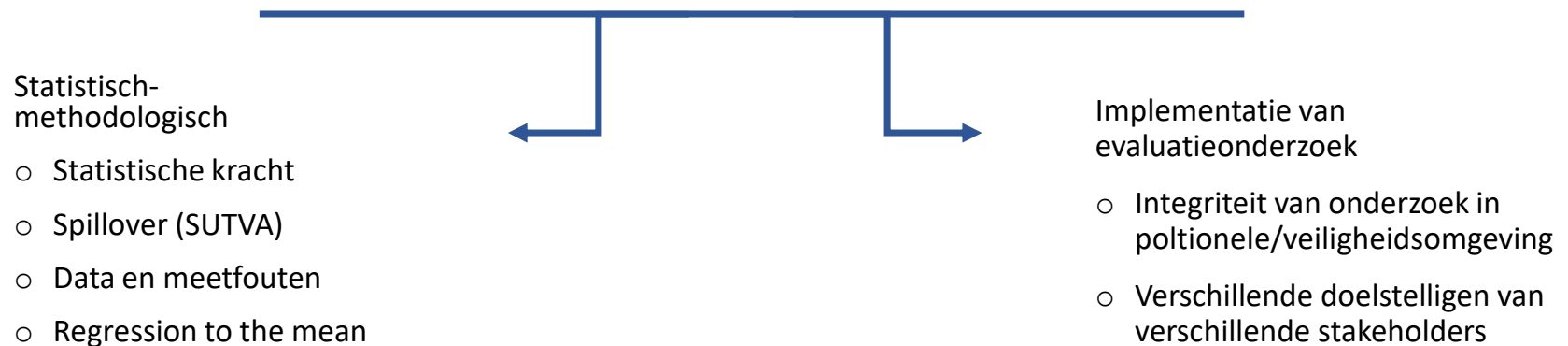
**Table 4.** Operational Tactics Used to Impact the Criminal Environment (Treatment Condition).

Operational Tactic ( <i>n</i> = 62)	Frequency	Percentage, %
Directed patrol	24	39.3
Directed patrol with LPR	2	3.3
Directed patrol with CCTV	2	3.3
Directed patrol with PCSOs	1	1.6
Directed patrol with AVL	1	1.6
Directed patrol with mobile computing technology	1	1.6
Targeting/contacting known offenders	6	9.8
Property checks	3	4.9
Detective team visits	1	1.6
Arrests	1	1.6
Gang takedown	1	1.6
Police raids	1	1.6
Targeting/contacting known victims	1	1.6
Other	17	27.9

# Centrale bevindingen

## Statistisch-methodologische **complexiteit** (crf. **evidence-based**)

- Experimentele manipulaties noodzakelijke doch onvoldoende voorwaarde om **causale verbanden** aan te tonen: nood aan verklarende mechanismen (processen, interacties)
- Aantal belangrijke statistisch-methodologische randvoorwaarden/factoren die uitkomst van experimenteel onderzoek sterk beïnvloeden:





# Centrale bevindingen

## Interpretatie effectiviteit te **eng**

- Focus **primaire effecten** vaak in termen van ‘reduceren’
- Beperkte focus op **secundaire effecten**: gebruikerservaringen, ethische en juridische waarborgen, maatschappelijke impact, kosteneffectiviteit...

Zie ook Khalfa & Hardyns, 2023  
m.b.t. de evaluatie van big data policing

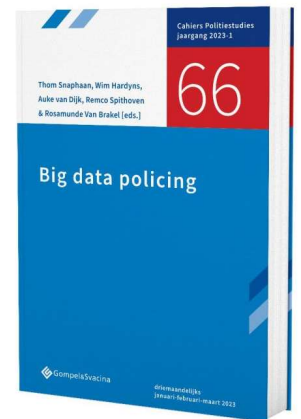
### De evaluatie van big data policing

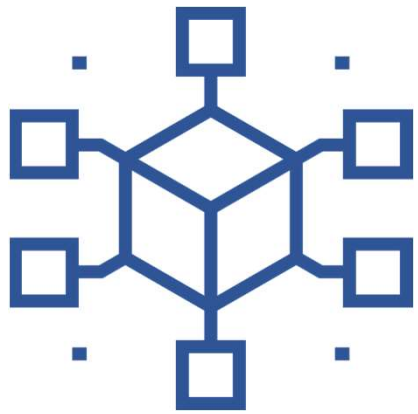
Krijtlijnen voor het opzetten van een geschikt  
experimenteel evaluatiemodel

Cahiers Politiestudies  
Jaargang 2023-1, nr. 66  
p. 179-208  
© Gompel&Svacina  
ISBN 978-94-6371-424-2



Robin Khalfa<sup>1</sup> en Wim Hardyns<sup>2</sup>





# 5. Discussie en conclusie



# Discussie en conclusie

Evaluatie en effectiviteit impliceert in se **formuleren van beleidsdoelstellingen**

- Vaak in termen van reductie/preventie criminaliteit – (on)veiligheid – schade (quid andere doelstellingen)
- Niet enkel politie speelt een rol in effectiviteit om doelstellingen te bereiken – **quid effect van ‘policing’, bv. in termen van politieaanwezigheid**
- Sommige doelstellingen moeilijk te kwantificeren: **Hoe disruptie meten/kwantificeren?**
- Weinig geweten over de condities op basis waarvan iets ‘werkt’: **reden te meer om te ‘evalueren’**

Er is voldoende **tijd** nodig

- Tijd nodig om **adoptie** van toepassingen/processen/interventies vorm te geven: nieuwe/andere manier van werken
- Tijd nodig om te **evalueren**: Het is duidelijk nog te vroeg voor meta-evaluaties met betrekking tot bepaalde programma's/interventies



# Discussie en conclusie

Fragmentatie in experimenteel evaluatieonderzoek ILP in termen van:

- Te evalueren doelstellingen/uitkomsten (quid e.g. disruptie)
- Vormen/aard van criminele omgeving (quid e.g. georganiseerde criminaliteit)
- Analytische technieken en methoden (quid e.g. crime scripting)
- Operationele interventies o.b.v. 'intelligence'



Intelligence-led-policing emphasises analysis and intelligence as pivotal to an objective, decision-making framework that prioritises **crime hotspots**, **repeat victims**, **prolific offenders**, and **criminal groups**. It facilitates crime and harm **reduction**, **disruption**, and **prevention** through strategic and tactical **management**, **deployment**, and **enforcement** (Ratcliffe, 2016, p. 66).

# Discussie en conclusie

## Fragmentatie in experimenteel evaluatieonderzoek ILP:

- Weinig relevant om effectiviteit te veralgemenen: **Bepaalde toepassingen kunnen werken en aanslaan, andere (misschien) niet**
- Maar ook: **Wat als toepassingen niet werken en toch aanslaan/gebruikt blijven worden?**
- En ook: **Wat ben je met effectiviteit en bewijsvoering als toepassingen (nadien) niet worden opgenomen binnen de organisatie?**

## Complexiteit experimenteel evaluatieonderzoek

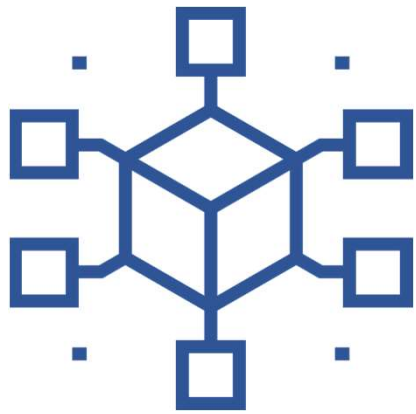
- Statistisch-methodologisch
- Implementatie-gewijs



# Discussie en conclusie

## Diverse openstaande reflecties

- Nood aan **meer en betere evaluatiestudies**, zowel kwalitatief als kwantitatief, experimenteel als observationeel
- Nood aan **holistische evaluatiestudies** (quid publicatiestrategie – beperkingen academische tijdschriften)
- Nood aan **betere metingen** in evaluatieonderzoek: bv. als we effect van politieaanwezigheid in hot spots willen meten, dan hebben we zo accuraat mogelijke metingen nodig van politieaanwezigheid
- Nood aan metingen effectiviteit in relatie tot **andere doelstellingen** dan ‘reductie criminaliteit’
- Nood aan inzichten omtrent condities op basis waarvan ‘iets zou kunnen werken’: **hypothese-gericht evaluatieonderzoek**



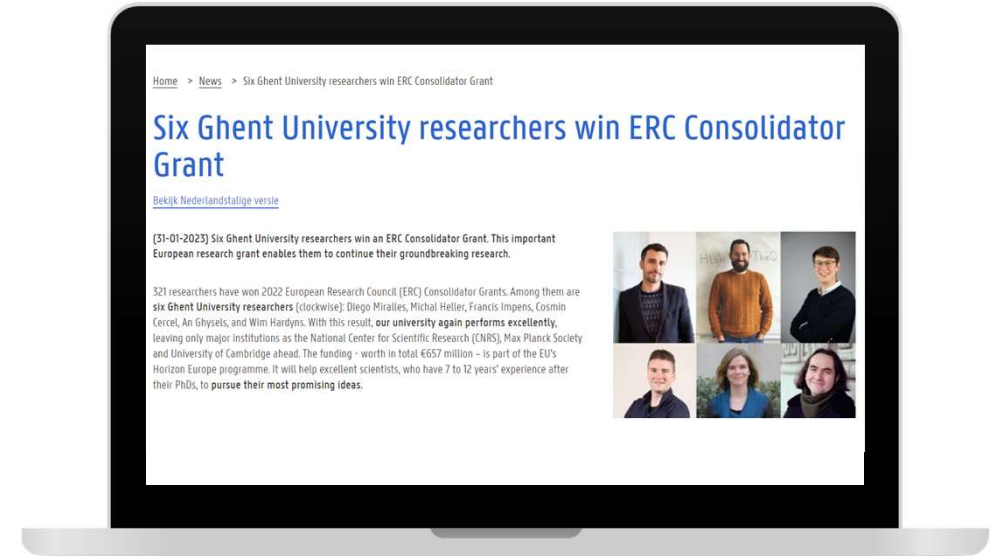
**Tot slot:**  
**#ERC CoG**  
**#BIGDATPOL**



# ERC-project: BIGDATPOL

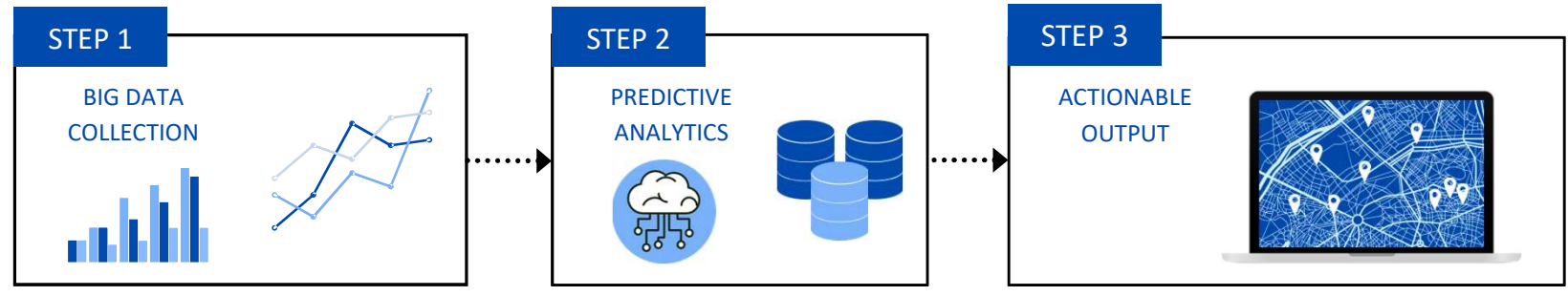
Since 2015, Professor Wim Hardyns was one of the first criminologists to conduct innovative research on big data and predictive policing. Today, knowledge about big data policing in Europe is still fragmented, with a lack of interdisciplinarity and a lack of scientific evaluations. In his ERC-funded big data policing project (BIGDATPOL), Wim Hardyns uses historical and real-time data **to predict when and where the risk of new criminal acts is high.**

The overarching goal of this ERC project is to integrate statistical-methodological, criminological, legal and ethical conditions into a single evidence-based 3D model. This model will be tested by several randomized controlled experiments in European settings. The approach of this project is innovative and radically different because it is transparent in terms of predictive algorithms, effectiveness, and legal and ethical safeguards. The ultimate goal of the evidence-based model is to provide both academia and law enforcement practice with guidelines and recommendations for studying, applying and implementing big data policing. This ambition is challenging and innovative, as it will be the first time that interdisciplinary research on this topic has been conducted in Europe, and even worldwide. Wim Hardyns therefore intends to present the results as a European benchmark for big data policing.



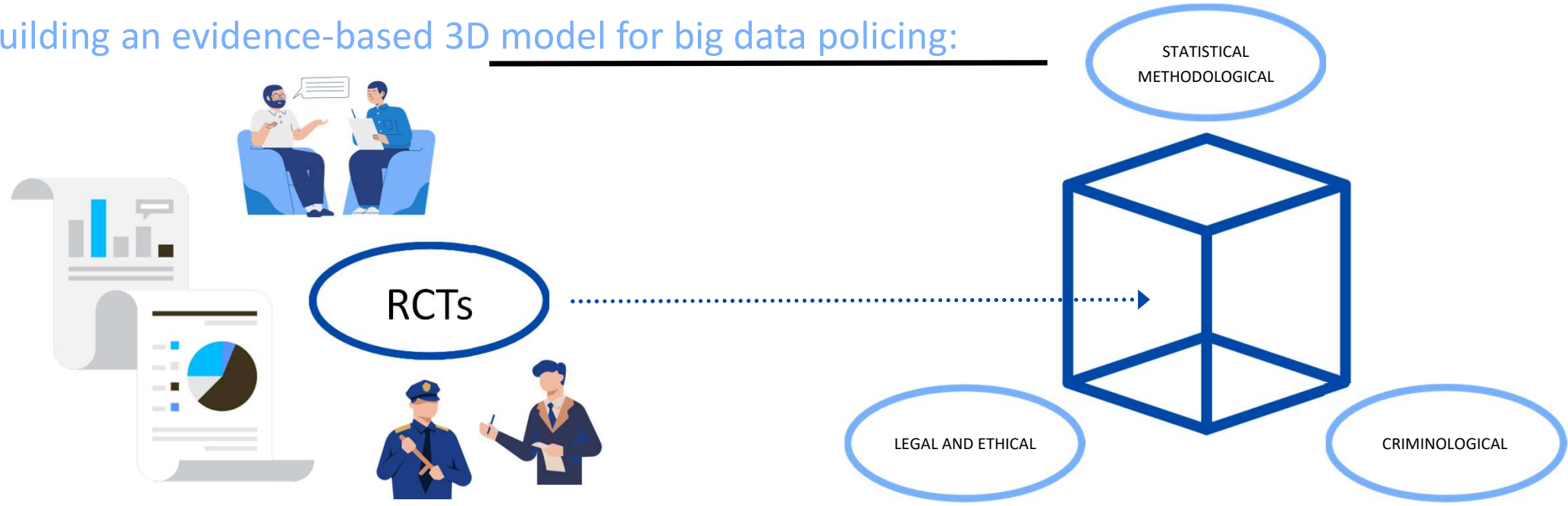


# Big data policing:



# Project objective:

Building an evidence-based 3D model for big data policing:



PHASE 1

INVENTORY

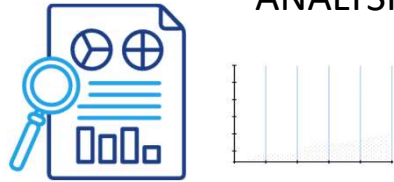


- Data base
- Expert network
- Typology
- Data collection



PHASE 2

ANALYSIS



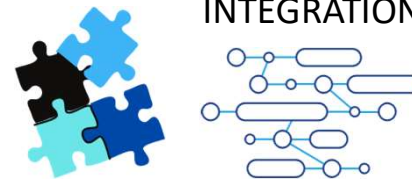
- Track 1: statistical-methodological
- Track 2: criminological
- Track 3: legal and ethical

} RCTs



PHASE 3

INTEGRATION



**Result:**  
Evidence-based big data  
policing model

Robin Khalfa – Doctoraatsonderzoeker  
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