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Under Fire
The Rise and Fall of Predictive Policing

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1. Introduction

Data-driven forecasting and decision-making systems are already part of policing around the world – from rather basic scoring methods to more complex algorithms. Predictive policing has long been marketed as a magic bullet, and is supposed to make policing more efficient, objective and resource-saving. It equips officers with capabilities to zoom in on places that have been attributed a high probability to become future crime scenes (*location-based predictive policing*) or, to identify persons with a potentially high risk to become offenders, re-offenders or victims (*person-based predictive policing*) – or a combination of both approaches (Perry et al, 2013).

These predictive programs can have a massive impact on the lives of people or places declared criminal. Yet, the extent of existing programs is only gradually becoming transparent. The development of public policy frameworks, the scientific assessment and the discussion of related practical and ethical questions is still under way. Meanwhile, law enforcement agencies, companies and pilot projects have already created facts. Some of these systems have been in use since the early 2000s – despite concerns and criticism from security and technology experts, activists, scientists, or investigative journalists. Most recently, even police commissions have proved severe weaknesses. They raise concerns about the reliability of the systems and point out negative side effects that result from problematic implementation, the handling of the data and the impact of the programs. As a result, the cities of Los Angeles and Chicago had to discontinue their predictive policing programs that had previously been advertised as prestige projects (City of Chicago Office of Inspector General, 2020; Los Angeles Police Commission, 2019).

Within the scope of the Anna-Maria and Stephen M. Kellen Fellowship 2018–2019 of the American Council on Germany (ACG) I investigated and compared **how predictive policing approaches are implemented in the policing and security sector in the US and Germany, which opportunities and risks are associated with them and which learnings can be drawn from the US-American pioneer projects and experiences for Germany.**

Furthermore, I also analysed which tools and tactics supervisory commissions, but also journalists and activists use to make predictive policing more transparent. I conducted interviews with stakeholders who interface with predictive policing in different roles: institutional users such as officials in police departments, members of affected communities, including current and former gang members, developers and analysts such as data scientists, investigative journalists with a justice and policing beat, activists, researchers as well as policing and security experts. Beyond that, I reviewed internal documents, data, studies and media reports related to the issues at stake.

My research underscores that the current implementations of – especially person-related – predictive policing programs do not live up to the claim to be more neutral in their risk assessment and forecasts than police officers, that they so far have not lead to standardized classifications and strategies across police forces and that they are not making decisions more transparent and

efficient. To the contrary, many programs disguise decision-making chains, are applied unevenly, and also reinforce existing bias towards minorities and structural inequality.

2. Predictive Policing in the US and in Germany

US-American cities like Chicago, Los Angeles and New York are pioneers of data-driven policing strategies. Chicago was one of the first cities to introduce person-based predictive policing software in 2012, resulting in the Strategic Subject List (SSL). The Chicago Police Department (CPD) used it to monitor which citizens are most likely to be involved in violence, either as victims or perpetrators (Kunichoff and Sier, 2017). The Los Angeles Police Department (LAPD) rolled out Operation LASER (Los Angeles' Strategic Extraction and Restoration) in 2011 to track urban gang activities at "hotspots" and focus on repeat offenders and gang members who would most likely re-offend and commit crimes in the target areas (Peteranderl, 2019). Algorithms also play a crucial role in court cases across the United States, calculating how likely it is that the defendants will relapse – the assessments influence judgements and penalties, but are biased against minorities (Angwin et al, 2016).

The US government-affiliated think tank RAND Corporation already summed up the controversial debate in 2013, suggesting to lower expectations about what predictive policing can achieve: "Predictive policing is a topic of much enthusiasm and much concern, particularly with regard to civil liberties and privacy rights (...) these tools are not a substitute for integrated approaches to policing, nor are they a crystal ball; the most effective predictive policing approaches are elements of larger proactive strategies that build strong relationships between police departments and their communities to solve crime problems" (Perry et al, 2013). Nevertheless, it took about seven more years in Chicago and Los Angeles before the implementation and impact of the programs were actually audited and ended by police oversight commissions (See *4. Data Errors, Bias and a Lack of Oversight: The Flaws of Predictive Policing*).

US and increasingly EU authorities also widely use predictive analytics with the aim to prevent terrorism attacks. Various companies promise to detect suspicious behavior and persons and reveal connections between terrorist suspects. Scientists doubt that the violent ideology behind terrorism

could be meaningfully analysed using an automated algorithm. According to Bisgaard Munk, who has evaluated scientific and application-oriented literature, these programs raise several practical, statistical and recursive problems: “The use of predictive methods to predict terrorism is therefore ineffective, risky and inappropriate, with potentially 100,000 false positives for every real terrorist that the algorithm finds” (Bisgaard Munk, 2017). Predictive analytics for counter-terrorism appears thus as an error prone, large and growing field of applications, but an extensive analysis would go beyond the scope of this research project.

The US is certainly ahead in the game, but more and more German security and policing authorities have started to experiment with predictive approaches to prevent series of burglaries as well as Islamist terrorist attacks.

Predictive policing in Germany is currently dominated by location-based programs, in particular forecastings of the probability of burglary series by organized burglary groups. The policing and therefore the software landscape is fragmented due to the federal policing structure: Different pilot projects were implemented in different federal states. At the time of August 2018 six states used five different systems for location-based policing, a mix of self-developed software and commercial systems (Knobloch 2018, p. 13). Depending on the software and settings several types of data flow into the forecasts: historical crime data, but also socio-demographic data, creditworthiness associated with households in a specific area, weather forecasts, as well as real-time data like traffic data (Peteranderl, 2016 & 2019).

Knobloch states that the world's first accompanying scientific evaluation of the test operation of a predictive policing system took place in the state of Baden-Württemberg 2015–2017, but that it can hardly be assumed that such systems have a positive influence on the development of burglary figures by enabling a more targeted police presence and crime prevention: “How well the encircling of crime hotspots works is not known because the effect is very difficult to measure. Success in the logic of predictive policing means that there is no burglary or theft” (Knobloch 2018, p. 5). Furthermore, it is impossible to isolate other factors that might have an impact on the result. The police in Hamburg has decided against the acquisition of such software in 2019 after carrying out a research project from 2016–2019. The department sees “currently no potential” for

predictive policing (Polizei Hamburg Kriminologische Forschungsstelle, 2019, p. 2). "A software-based, universally valid risk prediction about the near repeat phenomenon does not provide reliable information for a city like Hamburg. Spatial-temporal proximity of burglary is detectable, but limited in time on one day (not up to four days). Thus, in contrast to representations of the software manufacturers and users, on this basis no predictions about the probability of burglary in the following days" are possible (ibd., p. 4). According to the research department, predictive policing cannot fulfill the excessive expectations that have led to its strong use in Germany. The researchers stress underlying challenges, e. g. related to data management: "The collection and consolidation of information – the unspectacular, but essential process of data management – is mistakenly assumed to be already fully functional" (ibd., p. 5).

So far, German authorities use standardised, person-related predictive systems in the field of terrorism only. This could change, though, e.g. to include persons from the organized crime spectrum. In February 2017, the Federal Criminal Police Office publicly announced RADAR-iTE as a new "element of an improved and nationwide standardised risk assessment and prioritisation of measures" (2017). The risk assessment software is used to assess the behaviour and the potential danger posed by Islamist terror suspects (so called *Gefährder*) and to identify "relevant persons", key contacts, close to them. The software bases the classification on "certain facts" that "justify the assumption that a person will participate in different ways in politically motivated crimes or will play a certain role in the scene" (ibd.) – for example, whether a person has committed crimes in the past, has already participated in politically motivated crimes or is involved in the relevant scene (Federal Academy for Security Policy, 2018). The German Federal Criminal Police Office has developed the tool in cooperation with a Forensic Psychology Working Group at the University of Konstanz from 2015 on (Federal Criminal Police Office, 2017); it has been gradually introduced to the authorities of the federal states since September 2016 (Federal Academy for Security Policy, 2018).

The risk assessment is carried out using a sheet with standardised questions and answer categories, containing both risk-increasing and risk-reducing characteristics. The person is then located on a scale and either attributed a high, a conspicuous or a moderate risk. Based on this classification, the responsible authority decides which measures to take. A two-stage risk analysis system called

RISKANT is being developed on the basis of RADAR-iTE, which will enable a case-by-case threat assessment and suggests individualised measures for the identified high-risk persons (Federal Criminal Police Office, 2017). A total of 670 persons were processed with RADAR-iTE until September 2019, though not all of these persons were formally classified as *Gefährder* (high risk persons) and/or "relevant" (Federal Criminal Police Office, 2019) – which in turn raises the question by which criteria persons are screened with the tool. Law experts criticise that the *Gefährder* classification is blurry and could include racist criteria, for example when data points like visits to mosques become proxies for religion or origin (Bröckling, 2019 a; Hanschman, 2017; Jasch, 2017). Whether RADAR-iTE can also be transferred to the right-wing extremist sector is currently being examined. "A direct transfer (...) is not possible (...) However, the actual functionality of RADAR-iTE can also be applied to other phenomenon areas" (Federal Criminal Police Office, 2019).

In the US, big data analysis company Palantir has been offering multi-purpose software for a while that is often used to support predictive policing by selecting target persons for predictive policing programs or to collect further data on persons and their networks and context. Recently, the company has ventured into also developing their own forecasting software for predictive policing with a pilot launched in the city of New Orleans (Winston, 2018).

The German NGO AlgorithmWatch has mapped how Palantir is also "expanding aggressively into Europe" and has managed to win clients across different sectors like banking, health and law enforcement (Kayser-Bril, 2019). Hesse is so far the only state in Germany to use Palantir software for policing – a customized version of Palantir's "Gotham" software called "Hessendata". It analyses, connects and visualises data from three police databases for criminal cases and investigations, telex information on terrorist suspects by authorities like the Federal Criminal Police Office, meta data from telephone and mobile phone surveillance of suspects, as well as social network data like chats, likes and logins with the IP address. The software reveals "when the people under surveillance called whom, to which Islamist group they belong, which weapon and which car belong to which person" (Brühl, 2018). The contract award notice by the Hesse police department reveals that the department seeks to extend the analysis platform beyond terrorism "to effectively combat Islamist terrorism and serious and organised crime" (Ted, 2018).

The pilot application of Palantir in the state of Hesse is being closely observed by other police forces in Germany. Critics have spotted what they call a "Palantir paragraph" in the current draft bill for a reform of the Hamburg police law. Paragraph 49 could allow the police to perform automated data analysis on a large scale. In effect, the police could proactively search their databases and identify "relationships or connections between individuals, groups of individuals, organisations, institutions, objects and things" (Bröckling, 2019b). The Hamburg police department responded to my request that they were not currently using any programs for scoring potential terrorists or other violent persons or criminals, or any other software for analysing data such as Palantir software, and "are currently not considering this either" (Polizei Hamburg, 2019).

3. The Rise and Fall of Predictive Policing – Case Studies

Many lessons can be learned from the analysis of two US landmark pioneer predictive policing programs, the Strategic Subject List (SSL) by the Chicago Police Department and the Los Angeles Police Department's Operation LASER. For years, both approaches were praised as model projects to prevent crimes. At the same time, it remained completely opaque how they operated. Both programs were stopped by police commissions in the course of my research project due to massive concerns.

3.1. Case Study: Operation LASER in Los Angeles

Los Angeles, California, is the second largest city in the US with a population of close to four million residents and more than ten million in Los Angeles County (United States Census Bureau, 2018). L.A. is an early adopter of data-driven policing strategies, with Operation LASER (Los Angeles' Strategic Extraction and Restoration program) as a flagship project. It was developed from 2009 onwards by the Los Angeles Police Department (LAPD) and the private company Justice & Security Strategies, Inc. with funding from the US Department of Justice's Smart Policing Initiative and was first introduced in September 2011 in the Newton Division to reduce gun related violence. The predictive policing approach contains a person-related component ("chronic offender") as well as a location component (Uchida and Swatt, 2013, p. 287). The vision

was bold: “The basic premise is to target with laser-like precision the violent repeat offenders and gang members who commit crimes in the specific target areas. The program is analogous to laser surgery, where a trained medical doctor uses modern technology to remove tumors or improve eyesight” (Uchida et al., 2012, p. 6).

The program was piloted in five areas in the Newton division of Los Angeles, that were previously defined as hotspots (“LASER zones”), based on the spatial analysis of data on gun related crimes and incidents, arrests and emergency calls from 2006-2011 (Uchida et al, 2012, p. 2). The Newton Division with its population of 150.000 inhabitants and 44 active gangs registered by the LAPD ranked third in the comparison of city wide gun violence incidents in 2011. According to Uchida et al., “of the 1,135 reporting districts in Los Angeles, about 6 percent accounted for 30 percent of the gun-related crimes in the city, and a number of these violent reporting districts were concentrated in and around the Newton Division” (ibd., p. 3).

A Palantir data analytics platform enabled police officers and analysts to track crimes in each zone as well as the amount of time officers spent there (Los Angeles Police Commission, 2019, p. 11). It is interesting that beyond the criteria mentioned above, the selection of the Newton division as the first pilot area was also driven by internal dynamics within the police department: The “recently promoted Captain was receptive to using data to drive decision-making” (Uchida et al, 2012, p. 3). The program was later rolled out in other areas from 2015 onwards and was finally expanded to a total of 16 of the LAPD’s 21 geographic areas. The five missing areas were scheduled to join the program in 2019 (Los Angeles Police Commission 2019, p. 8).

The Crime Intelligence Detail (CID), a team consisting of two police officers and a crime analyst, was supposed to collect information from patrol and bicycle units as well as from the Parole Compliance Unit at Newton Division on a daily basis. Their task was to look for person-related documents like field identification cards, traffic citations, release from custody forms, crime and arrest reports, information related to violent crime and/or incidents that involved a gun (LAPD/Justice & Security Strategies, Inc. 2012, p. 4). According to the Los Angeles Police Commission, data related to persons of interest were reviewed and vetted with Palantir data analysis software and other department systems, providing access to “information derived from

several existing databases, ranging from national and statewide criminal history systems to county statistics and the Department's own crime, arrest, and field interview data" (2019, p. 9). So-called Chronic Offender Bulletins were created (LAPD/Justice & Security Strategies, Inc. 2012, p. 4). These real-time intelligence briefs were expected to "assist officers in identifying crime trends and solving current investigations, and they give officers a tool for proactive police work" (Uchida et al, 2012, p. 2). According to a presentation, the Chronic Offender Bulletins included information like physical descriptors, physical "oddities", gang affiliation, prior crimes committed, parole or probation status, vehicles, frequented areas, contact with law enforcement (LAPD/Justice & Security Strategies, Inc 2012, p. 6).

In the six months between August 2011 and January 2012, 125 Chronic Offenders were identified, scored and ranked. In May 2012, the list was expanded by 65 new offenders. Out of those 189 total offenders, 112 (i.e. 59 per cent) were arrested at least once (LAPD, 2013, p. 8). The Los Angeles Police Commission notes that the initial objective seemed to have changed: Initially the identified chronic offenders who were most likely to commit violent crimes in a target area were supposed to be removed from the area, presumably by arrest. But later documentation material refers to intervention strategies for crime prevention, like notifying targeted people that the police is aware of their criminal activity or keeping an eye on them (2019, p. 9) – a style of intervention that was also envisioned by the city of Chicago, at least in the beginning.

3.2. Case Study: Strategic Subject List (SSL) in Chicago

In Chicago, the Strategic Subject List (SSL) was implemented in 2012 to keep track of potential future criminals as well as particularly vulnerable citizens. The CPD wanted to concentrate on the limited group of people frequently involved in violent acts, with a focus on gun violence. An algorithm calculated a likelihood for people to become perpetrators or victims in a shooting, applying a "heat score" of 1–500 to every person. "CPD received $3.8 million in federal grants and spent ten years developing these sequential models for predicting the likelihood that an individual would become a 'party to violence' (PTV), i.e. the victim or offender in a shooting" (City of Chicago Office of Inspector General, 2020).

The objectives of the different related risk models were "to identify at-risk individuals and connect them to social support services (Custom Notification Program); to identify repeat offenders with a high propensity toward violent, gang-related crime and enhance prosecution to detain, convict, and incarcerate those offenders (Targeted Repeat-Offender Apprehension and Prosecution [T.R.A.P]); and to target gang members and their associates through information gathering, analysis, and social network mapping (Gang Violence Reduction Strategy)" (ibd.). Police visits at the houses of high risks persons were intended to prevent the prognosis from materialising, social assistance was also originally envisioned to support the people at risk (Peteranderl, 2018).

How the likelihood for future criminality was calculated by the CPD was totally opaque for years. "We learned about SSL from media reports, but everything was very secret," Freddy Martinez, a founder of the Lucy Parsons Lab in Chicago told me. The Lab tried to research and evaluate the algorithm's specifics, to push for accountability: "We have tried to determine what the inputs are, what the algorithm looks like and whether there is bias and discrimination" (Peteranderl, 2018). After much criticism from organisations like Lucy Parsons Lab, several media reports and a lawsuit, the city published at least the type of variables and an anonymised data set on arrests until 2016 related to the SSL (City of Chicago Data Portal, 2017).

The crime trend played a role in the risk assessment, i.e. previous arrests for weapons possession, a narcotics offense or a violent offense, the individual's age at the time of their most recent arrest, the number of times a person has been the victim of a shooting or the victim of aggravated battery or aggravated assault. Gang affiliation – "if an individual has been confirmed to be a member of a criminal street gang" – also influenced the forecasting (Chicago Data Portal, 2017). The published variables were not exhaustive and changed over time, and how exactly they were weighted is unknown up to this day. Social networks were also supposed to have played a role – but it is not publicly known which contacts and networks were evaluated to what extent (Peteranderl, 2018).

The result of the program was another massive police database holding records of almost 400.000 individuals with an SSL risk score, and little oversight of the scoring method, entries, or the use of the information: "Every individual arrested by CPD at least once between August 2012 and June 2018 – regardless of whether they had a history of violence or whether they were ultimately

convicted – received a risk score or risk tier. As of July 2018, 399,412 individuals had an SSL risk score" (City of Chicago Office of Inspector General, 2020).

4. Data Errors, Bias and a Lack of Oversight: The Flaws of Predictive Policing

Various points of criticism can be derived from the experiences with the two predictive policing programs from Chicago and Los Angeles. The data from the past, but also "real time" data from patrols or controls used for predictions are not neutral. Crime reports and crime statistic only reflect what has been reported by or to police departments, policing patterns influence the existing data (Pinard, 2018): "Deploying officers based on crime statistics will simply return them to where they concentrate their time. As a result, the data often push officers into the same over-policed and over-criminalized communities" (ibd.). Both of the police departments of Los Angeles and Chicago have a history of over policing in Latino and Black communities and misconduct against citizens of color, who are disproportionately affected by practices like "stop-and-frisk" (Crawford et al, 2019, p. 205; Los Angeles Times, 2020).

According to an analysis by Crawford et al (2019) in cities like Chicago the development of predictive policing systems overlapped in time with scandals and lawsuits: "In numerous jurisdictions, these systems are built on data produced during documented periods of flawed, racially biased, and sometimes unlawful practices and policies ("dirty policing")," they warn. "If predictive policing systems are informed by such data, they cannot escape the legacies of the unlawful or biased policing practices that they are built on. Nor do current claims by predictive policing vendors provide sufficient assurances that their systems adequately mitigate or segregate this data" (ibd., 192).

Among the indicators that have been given weight in predictive policing programs are alleged "gang membership" or "gang ties". This is highly problematic, because suspects of gang membership are included in gang databases, but the criteria remain blurry and errors occur frequently (Clayton, 2019; Miller, 2020). California had to overhaul its CalGang database after an audit revealed a lack of oversight in 2016 and severe errors. People had been labeled as gang members incorrectly, even children as young as two years old wer listed (California State Auditor,

2016). Also, Chicago City's gang database was found to be "riddled with errors" (Dumke, 2019). Once registered by law enforcement, suspects have no chance to contest the entry – if they even learn about it. Unaware of their categorisation, they become part of a surveillance and arrest cycle – predictive policing being a part of it.

Little information was released to the public and the media over the course of the years about how the predictive policing programs were implemented in practice and how the algorithms worked in detail (Kunichoff and Sier, 2017). None of the programs underwent an independent, scientific auditing process, no checks and balances were in place to monitor the daily implementation of the programs, and their impact. Police departments and private companies who had been involved in developing the programs claimed success without substantial evidence.

In 2016, researchers from the think tank RAND Corporation published the first independent audit of Chicago's SSL list, with a devastating conclusion: "Individuals on the SSL are not more or less likely to become a victim of a homicide or shooting than the comparison group, and this is further supported by city-level analysis. The treated group is more likely to be arrested for a shooting," the researchers wrote (Saunders, Hunt, and Hollywood, 2016). "It is not clear how the predictions should be used in the field. One potential reason why being placed on the list resulted in an increased chance of being arrested for a shooting is that some officers may have used the list as leads to closing shooting cases" (ibd.). Data later released by the city of Chicago proved that just 3.6 percent of the people covered by the SSL were actually involved in violence as a perpetrator or a victim in a shooting. On the other hand, especially black young men were found on the SSL – "56 percent of African-American men in Chicago between the ages of 20 and 29 were considered at risk" (Kunichoff and Sier, 2017).

The L.A.-based civil rights organization Stop LAPD Spying Coalition had also received documents proving racial bias, including a list of 679 target persons of Operation LASER. "The data shows that 89 percent of the people monitored are People of Color, non-white," Hamid Khan, the organization's founder, told me. With a total of 44 percent black target persons, the focus on the black population is "overwhelming", Khan says. "The black community in Los Angeles only accounts for about nine percent of the total population, so it's a 5:1 bias" (Peteranderl, 2019). The programs therefore reflect existing biases in society and policing – despite claims that the software

accounts for more objective and fair decisions. Khan calls predictive policing "a pseudo-scientific masquerade for the criminalisation and surveillance of minorities – a kind of formula with which the police can justify to the public why they do what they do" (ibd.).

According to Ruha Benjamin, technologies such as predictive policing disguise racism: "Algorithms create a high-tech alibi for the routine racial profiling, harassment, and occupation of Black neighborhoods," the professor at Princeton University and author of "Race After Technology" told me. "They hide layers of historic and ongoing discrimination, which shape the input data and design assumptions of automated decision systems, beneath a deceptively simple score." This "racist minimalism" would lead to discrimination that is "increasingly undetected, but no less serious, or even deadly." (Peteranderl, 2019).

In Chicago and Los Angeles it was the Police Commissions/Offices of Inspector General (OIG), that have oversight over the department's internal disciplinary process, that finally audited the controversial programs and triggered their ending (City of Chicago Office of Inspector General, 2020; Los Angeles Police Commission, 2019) – but they reacted very late and only after flaws were made public. The systems had existed for several years and NGOs, media and activists had revealed numerous weaknesses and mistakes and pressured them to act.

The Los Angeles Police Commission issued a devastating report in March 2019. It warns against drawing conclusions from the data on the alleged success of the program. The data show numerous contradictions. According to the Commission, it appears that much of the police presence in the hotspots areas, which is automatically recorded by GPS, was generated by parked cars or police officers driving past the place – in reality, the presence of the police in the priority areas was limited. The commission also denounces serious inconsistencies in the management of the Chronic Offender Program, particularly with regard to "selection and documentation practices from area to area". "These differences appear to be due to a lack of centralized oversight and a lack of formalized and detailed protocols and procedures," the report states (Los Angeles Police Commission, 2019). Most people categorised as "repeat offenders" have had little or no police contact. Some of the target persons have been controlled or arrested, but this is not clearly attributable to Operation LASER (Los Angeles Police Commission, 2019; Peteranderl, 2019). In April 2020, the LAPD officially announced the end of Operation LASER (Puente, 2019).

In January 2020, Chicago's Police Commission came to a similar conclusion: "The general areas of concern in the PTV risk model program include: the unreliability of risk scores and tiers; improperly trained sworn personnel; a lack of controls for internal and external access; interventions influenced by PTV risk models which may have attached negative consequences to arrests that did not result in convictions; and a lack of a long-term plan to sustain the PTV models" (City of Chicago Office of Inspector General, 2020). The Chicago Police Department had already quietly stopped the SSL program in November 2019, as later became public (Gorner and Sweeney, 2020). One of the recommendations for potential future programs of the Chicago Police Commission is to "continuously evaluate the accuracy and efficacy of predictive policing programs" (City of Chicago Office of Inspector General, 2020).

5. Checks and Balances

Researchers, civil society organizations and journalists have raised concerns over the predictive policing programs in light of the absence of internal and external oversight mechanisms. They have struggled with the limited access to internal documents, data and other information. Press requests of media in both cities were answered in evasive manners or with false information: "In a Chicago magazine analysis, official police documents contradicted multiple claims made by city officials, and some officials contradicted one another or the little public data available" (Kunichoff and Sier, 2017). Even Freedom of Information Act (FOIA) requests, a tool to ask for public documents, were met with no or small bits and pieces of information, so filing a lawsuit became the most successful strategy of the critics. The journalists George Joseph, Jamie Kalven, and Brandon Smith sued the Chicago Police Department after their Freedom of Information requests for the Chicago Sun-Times turned out unsuccessful – and the police was forced to release an earlier version of the Strategic Subject List it published online (City of Chicago Data Portal, 2017; Kunichoff and Sier, 2017).

In Los Angeles, the Stop LAPD Spying Coalition has been researching the surveillance tools of the LAPD with a team of volunteers and affected citizens since 2010. The LAPD has released some data and documents to them after Freedom of Information requests, but the organisation sued the police department in 2018 to obtain more details about Operation LASER (Peteranderl, 2019;

Collins, 2018). The organisation's strategy is based on "community power", as founder Hamid Khan puts it. Members of communities affected by predictive policing and other surveillance technologies are part of the research group and the community's concerns and experiences are put front and center. "Community-based research is critical", Khan told me. "It has to be thorough research based on the impact on our communities and the histories of our communities, not some theoretical analysis from the top down" (Peteranderl, 2019).

Journalists have to develop experimental designs to prove bias of predictive policing systems, if they are not granted access to internal data, the code or internal processes. In several cases, people who unjustifiably became targets of predictive policing measures became the starting points for investigations (Gorner, 2013). ProPublica reported on the bias of a risk assessment algorithm by obtaining the risk scores assigned to more than 7,000 people arrested in Broward County, Florida, in 2013 and 2014. They were able to compare the predictions with how many people were actually charged with new crimes over the next two years (Angwin et al, 2016).

Mechanisms of public control are often undermined by the set-up of predictive programs. It is a common pattern that these pilot projects are either financed by public grants (like in the case of Chicago and Los Angeles) or that commercial software is first introduced in the context of test phases in which no large budgets have to be released. This way, police departments do not have to undergo complex public tender processes or become accountable to financial oversight committees. The Verge revealed how a secret predictive policing program by Palantir in New Orleans avoided a public procurement process by way of being declared as a philanthropic relationship with the city. The project was later extended multiple times (Winston, 2018). In Germany, the purchase prize for the Palantir software according to the delivery order was tagged at 0,01 Euro. Hesse's Ministry of the Interior admitted to Der Spiegel that this was "not the actual price", but that the real prize should be kept secret for "reasons of the public security interest of the State of Hesse" (Der Spiegel, 2018). A committee of inquiry put the tender process to the test, but without consequences. Opposition parties doubted that the evaluation for the tender was objective and lawful – "rather, the obviously desired result was clear from the outset" (FDP Fraktion im Hessischen Landtag, 2018).

6. Conclusion

Predictive policing systems are still often touted as a success, while independent, scientific studies and control mechanisms are largely missing. How these programs contribute to policing and security decisions and ratings is often opaque, oversight mechanisms are not institutionalized yet. As the case studies from Los Angeles and Chicago show, the media and civil society have an important role to play, given the limited public control.

On the basis of the experience gained in the US, it can be deduced for Germany that the possible consequences and downfalls must first be evaluated in the form of a technology assessment – before a potential expansion of such programs. The learnings from the programs in Los Angeles and Chicago cast doubt on the usefulness of predictive policing and could reveal several weaknesses in terms of input, process, outcome and accountability.

Data-driven forecasting and decision-making systems will have an increasingly important influence in the future worldwide. Ideally, they should be embedded in public policy frameworks that promote technology innovation and security, but also optimally balance the interests and concers of the various stakeholders. Public oversight and accountability have to be guaranteed. One idea for more transparency is the establishment of independent expert groups, involving technology experts and representatives of civil society, to better control the functioning and use of police software. Transparency would be required which variables are used to calculate danger zones and suspects and how exactly the programs work and how they are implemented. However, the demand for better control mechanisms is not only opposed by the unwillingness of security authorities to disclose their processes; the commercial interest of the involved software companies and copyright claims are also often used as arguments to keep the specifics of the programs secret.

To justify the use of predictive policing measures, however, their usefulness would first have to be scientifically proven.

Predictive policing systems are not stand-alone-systems: They have to be analysed, understood and regulated from an ecosystem perspective – being interconnected with other digital policing

tools and surfaces. Policing software promises to recognise the faces of criminals in real time or to predict criminal behaviour, it evaluates clues in camera feeds, identifies persons. Vast amounts of information and images get stored in often unregulated databases. The technology company Axon (Taser) wants to predict criminal activity and future crimes by analysing police bodycamera video feeds (Kofman, 2017). All of these systems rely on various – potentially "dirty" – data sources of varying quality as inputs, which may lead to tainted assessments and scorings. Results from predictive policing systems can themselves become integrated in other surveillance/policing systems or can be used for decisions in other dimensions. This way, the negative impact that faulty assessments will have for affected individuals multiplies.

I am convinced that dealing with forecasting and decision-making systems is one of the core challenges for democracies in the digital age and that journalism urgently needs an upgrade to the tools, strategies, and collaborations it has with the tech community to keep up with developments. The case studies of Los Angeles and Chicago also show how journalists, civil society organisations and, finally, public commissions worked hand in hand to abolish projects that were not only black boxes to the public, but also had a negative impact on the affected target persons – without any proven record of success.

About the Author

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