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ARTICLE

On Reaching a Crime Scene Ahead of the Criminal: Dreams of Police and Technology from the 1970s to Today

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Abstract

This article examines the history of technological policing in Germany from the 1970s to today. Combining perspectives from intellectual history and legal theory, it explores the ideas and practices of Horst Herold, former President of the German Federal Criminal Police Agency. Herold's thought was both deeply influenced by cybernetics, a form of techno-utopian thought developed during World War II as well as the basis on which technological policing was first put to the test in Germany. The article illustrates Herold's hopes for a cybernetic transformation of police, law, and society. It locates Herold's cybernetic legal theory within a broader context of shifting legal paradigms of German public law towards the so-called preventive state in the 1970s and 80s. Crucially, an anti-legal affect is revealed to lie at the center of Herold's ideas. His concept of cybernetics ultimately serves to supplant the rule of law. In the concluding part, the article assesses Herold's legacy and attempts to both critique it and point towards a productive way forward by invoking modern, second-order order cybernetics. The article argues—perhaps counterintuitively—that Herold's ultimate failure was not adapting cybernetics but rather not staying with it all the way, supplanting its weaknesses, and drawing on its strengths.

A. Introduction—the RAF's Last Captive

At the age of 93, Horst Herold was finally allowed to return to his Nuremberg home. In the years leading up to 2017, the former president of the *Bundeskriminalamt* ("BKA") (Germany's Federal Criminal Police Agency) called himself "the last captive of the Red Army Faction"[1] ("RAF")—a far-left militant organization[2] that had assassinated key figures of West German

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[1]Heribert Prantl, *Der Letzte Gefangene der RAF ist geflüchtet*, Süddeutsche Zeitung (Sept. 3, 2017), https://www.sueddeutsche.de/politik/prantls-blick-der-letzte-gefangene-der-raf-ist-gefluechtet-1.3651463 (all translations from German and French are my own).

[2]For a history of the RAF *see* Stefan Aust, Der Baader-Meinhof-Komplex (New Extended Ed. 2017); an English version of an earlier edition of the work is available: *See* Stefan Aust, Baader-Meinhof: The Inside Story of the R.A.F. (Anthea Bell trans., 2009). For an illustrative recent explication of the RAF's founding from within German jurisprudence, *see* Matthias Jahn & Sascha Ziemann, *Frankfurter Strafprozessunordnung*, in Recht—Philosophie—Literatur: Festschrift für Reinhard Merkel zum 70. Geburtstag 1265 (Jan-Christoph Bublitz, Jochen Bung, Anette Grünewald, Dorothea Magnus, Holm Putzke, & Jörg Scheinfeld eds., 2020).

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public life in the 1970s—and Herold ranked high among their targets.[3] Yet, the RAF did not order Herold's "capture." It was decreed at a much higher level—by the German state. In 1977, the authorities required Herold to move into an apartment on the BKA's premises as a safety measure.[4] Four years later, when he was forced to retire, Herold had to relocate to army barracks in Upper Bavaria and was required to reimburse the Federal Republic of Germany for the property on which his prefab house was constructed. Herold called this domestic prison his "clay pit"[5]—the house was surrounded by earthen walls and a fence. Herold lived there for almost thirty-five years. He died in 2018, a year after he was finally able to return to Nuremberg.

Herold's quip about being the last captive of an essentially dormant[6] terror group was not mere self-effacement. Rather, deconstructing the difference between pursuer and pursued constituted a fundamental part of Herold's theory of policing. In a controversial interview in 1980,[7] Herold described a "reciprocal process of learning" between the RAF-terrorists and himself. He felt that the "quarrel I have with terrorism connects me more intensely with the terrorists than with the rest of society."[8] Reportedly, Herold considered Andreas Baader—one of the RAF's leaders—to be the only person who had ever understood him and himself in turn the only person who had ever understood Baader.[9] In Herold's view, to anticipate one's enemies' actions, one had to *identify* with them. But this did not suffice: Herold would need to make use of *technology* to close the gap between his divinations and practical police work.

In this article, we will explore ideas of policing and technology from the 1970s to this day. Horst Herold's contributions will be our guiding perspective. His ideas sprung from his commitment to *cybernetics*, a modern *Universalwissenschaft* (universal science) promising technological control and social engineering in the face of an increasingly chaotic era. In the larger intellectual world of German police law and legal theory, Herold may have been a minor figure.[10] Still, he embodied the foundations, practice, and contradictions of German administrative and police law as few others did, having both developed a *theory* of policing and having tested this theory in *practice* using his new technological means. Herold followed modern

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[3]Prantl, *supra* note 1.

[4]Press Release, BKA, Obituary for Horst Herold (Dec. 14, 2018), https://www.bka.de/SharedDocs/Pressemitteilungen/DE/Presse_2018/pm181214_Herold.html.

[5]*See* Prantl, *supra* note 1; Heribert Prantl, *Nachruf auf Horst Herold*, SÜDDEUTSCHE ZEITUNG (Dec. 14, 2018), https://www.sueddeutsche.de/politik/horst-herold-nachruf-raf-1.4254191.

[6]After the height of RAF activity in 1977, culminating in the "Death Night of Stammheim," the suicides of leading RAF militants in captivity in the Stammheim maximum security prison, the organization disbanded itself on Apr. 20, 1998 by faxing an eight-page letter to Reuters news which proclaimed the dissolution of the RAF. Some criminal activities carried out under the same moniker continued, albeit at a considerably reduced scope.

[7]On July 1 and 15, 1980, Herold spent two days conversing with the journalist Sebastian Cobler. The interview was meant to be published in the German intellectual magazine *Kursbuch*. However, when Cobler sent Herold the manuscript, Herold did not agree to its publication. After some reportedly fierce debates between Herold, Cobler, and the BKA and an ensuing legal battle, Cobler published the unauthorized interview in the monthly *TransAtlantik*. Naturally, a small public relations scandal arose, which ultimately contributed to Herold's fall from grace and forced early retirement. *See infra* D.III. The story of this interview is recounted by the—at times unreliable—Dieter Schenk; *see* DIETER SCHENK, DER CHEF: HORST HEROLD UND DAS BKA 430–33 (1998). In referring to the interview I am replicating the manner it is dealt with by Lea Hartung by only quoting what can be correlated with Herold's documented publications and statements. *See* LEA HARTUNG, KOMMISSAR COMPUTER 23 n. 39 (2010).

[8]Sebastian Cobler, *Herold gegen alle*, 1 TRANSATLANTIK 29, 39 (1980).

[9]Aust, *supra* note 2, at 344; Herold claimed to know more about the RAF than the RAF knew about itself. In turn, as recounted by Schenk, *supra* note 7, at 160, Baader apparently had the RAF members read Herold's essays.

[10]Regarding the study of relatively minor figures as a characteristic of the history of ideas, *see* ARTHUR O. LOVEJOY, THE GREAT CHAIN OF BEING 19–20 (1936) (positing that a "minor writer" can sometimes be more important than "the authors of what are now regarded as the masterpieces"); Richard Rorty, *The Historiography of Philosophy*, in PHIL. IN HIST. 49, 68 (Richard Rorty, Jerome B. Schneewind, & Quentin Skinner eds., 1984) (noting that the history of ideas can "ignore certain problems which must be settled in order to write the history of a discipline—questions about which people count as scientists, which as poets, which as philosophers, etc.").

technological and theoretical developments from early on.[11] He published extensively; his essays are marked by the attempt to contribute to ongoing discussions in a substantial manner and to provide new ideas. A significant portion of Herold's writings were published in police journals.[12] That makes them particularly interesting as they are an instance of someone within the state and police apparatus addressing his colleagues—his adversaries within and without the agency in order to convince them of his ideas, as well as the wider jurisprudential discourse. In that sense, the essays can be assumed to significantly reflect *internal* conceptions and discussions of policing,[13] influence the practice of policing, and represent a line of thought in legal discourse of the time.

Herold's thought and practice coincided with a paradigm shift in German public law and policing. This rare convergence of theory and practice in one person at a critical time allows us to reconstruct ideas shaping police law and its transformation into the unbridled "security law" of this day. Following Herold will lead us to the foundations of law and its role in regulating our societies. Along the way, we will explore a chapter in the history of techno-policing.[14] Ultimately, this exploration will not only allow us to better grasp the *history* of technological law enforcement but assist us in dissecting its *contemporary* forms.

This article consists of four parts—three that follow a primarily descriptive, historical method, and one that is mostly prescriptive and related to the present day. I will first examine how cybernetics became an influential set of ideas during the second half of the 20th century and how Herold adapted and molded these ideas to his purposes. I will then turn towards examining why cybernetics was particularly suited to the challenges faced by Western thought under the conditions of the postmodern era. During the 1970s and 1980s, German public law—specifically administrative and police law—was swept up by the uncertainty of this new era. As a result, its self-descriptions shifted. In particular, the way the state and its apparatus were conceived changed with *prevention* serving as a guiding principle. I will retrace the intellectual and practical steps Herold and his BKA took towards enacting these paradigm changes in policing. In this context, both the critical role of technology as a tool of enacting this shift, and of cybernetics as the intellectual framework guiding the process, will become apparent.[15] Herold's cybernetic framework of ideas, I argue, allowed him to *express and process* the paradigm change of German public law whilst simultaneously producing a utopian and anti-legal affect that lingers to this day. Identifying some of Herold's shortcomings will lead us to the present day. With this third,

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[11]Unfortunately, as Herold rarely cited sources and tended to portray his insights as springing from conceptual necessity instead of inspiration by others, we do not know the circumstances of his first intellectual encounter with cybernetics.

[12]Herold's list of publications in his *Festschrift* counts 152 entries. *See* BUNDESKRIMINALAMT WIESBADEN, FESTSCHRIFT FÜR HORST HEROLD (1998) (hereinafter "Festschrift"). Sixteen of those are from Herold's private, typewritten collection. Of the remaining 136 entries, sixty were published in police journals, while another six appeared in administration journals. Significantly, after Herold's retirement on March 31, 1981, his writing continues at about the same pace, yet merely five of the thirty-one publications appeared in police journals.

[13]At the same time, it is important to remember that Herold was a modernizer, who faced considerable internal headwind in his agency. Herold occupied a place at the intellectual frontier of the administrative and police apparatus of his time—yet still spoke from the inside. *See* Matthew G. Hannah, *Spaces of Exception and Unexceptionability*, in WAR, CITIZENSHIP, TERRITORY, 57, 69 (Deborah Cowen & Emily Gilbert eds., 2008). Herold's predecessor, the *Alt-Nazi* Paul Dickopf (head of BKA from 1965 to 1971), was deeply skeptical of technology, going as far as mistrusting the automobile. *See* Rüdiger Bergien, *'Big Data' als Vision: Computereinführung und Organisationswandel in BKA und Staatssicherheit (1967–1989)*, 14 ZEITHISTORISCHE FORSCHUNGEN 258, 263 (2017).

[14]I take the term "techno-policing" from Bennett I. Capers, *Race, Policing, and Technology*, 95 N.C. L. REV. 1241 (2017).

[15]Through this microanalysis, a chapter in the history of cybernetics as a cultural and intellectual phenomenon will be written as well. *See generally* Bruce Clarke & Mark B. N. Hansen, *Neocybernetic Emergence*, in EMERGENCE AND EMBODIMENT 1, 2 (Bruce Clarke & Mark B. N. Hansen eds., 2009) ("[t]he cultural history of cybernetics is still being written. There is no authoritative version but rather a swarm of competing accounts. Given the welter of disciplines engaged in the movement, as well as the self-reflexive turn in cybernetic thought itself, a definitive history would be an impossible project."). However, instead of such a definitive history, I contend that it is more prudent to conduct exemplary studies—such as this essay—that will, at some future point and in sum, constitute a kaleidoscopic general history of cybernetics.

concluding step, I will discern the link between cybernetics and techno-policing from a contemporary perspective. I will argue, perhaps counterintuitively, that a fundamental step towards understanding and regulating techno-policing from a legal point of view might be made not by rejecting cybernetics, but by once again drawing on it, particularly on its epistemological and ethical implications.

B. Cybernetics

> Sometimes the spell of a word or expression is untainted by any clear and stable meaning, and through all the period of its currency, its magic remains secure from commonplace interpretation ... I don't believe that *cybernetics* is quite such a word, but it does have an elusive quality as well as a romantic aura.[16]

On the following pages, I will develop an understanding of cybernetics with a focus on Herold's hopes for a cybernetic transformation of the police, law, and society. To that end, I will contour cybernetics along three central perspectives of *control*, the *enemy*, and *feedback* and along its leitmotif[17] of *utopianism*. These characteristics will elucidate cybernetics' connection to law, specifically police law. Throughout, Herold's theory and practice will be our guide.

Cybernetics is not easily defined.[18] In fact, its allure lies precisely in its conceptual fluidity—cybernetics is many things to many people. It is the study of "abstract principles of organizations in complex systems"[19] that employs a vocabulary of emerging technologies, eventually converging in a "technoscience of communication and control, drawing from mathematical physics, neurophysiology, information technology, and symbolic logic."[20] Its foundations were developed during the Second World War by the American mathematician Norbert Wiener and during the interdisciplinary Macy Conferences (1946–1953) in New York City.[21] It has successfully permeated the philosophical, scientific, and public imaginary of the latter third of the 20th century. To this day, cybernetics informs "how we talk, think, and act on our digital present and future, from the utopian visions invoked by the terms *information age* and *cyberspace* to the dystopian visions associated with enemy *cyborgs* and *cyber warfare*."[22] Its traces "permeate the sciences, technology, and culture of our daily lives."[23]

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[16]JOHN R. PIERCE, SYMBOLS, SIGNALS AND NOISE 208 (1961) (emphasis in original).

[17]The Wagnerian term serves to rightly emphasize the poetic nature of cybernetics. *See* Erich Hörl & Michael Hagner, *Überlegungen zur kybernetischen Transformation des Humanen*, in DIE TRANSFORMATION DES HUMANEN 7 (Michael Hagner & Erich Hörl eds., 2008); Erich Hörl, *Das kybernetische Bild des Denkens*, in DIE TRANSFORMATION DES HUMANEN 163 (Michael Hagner & Erich Hörl eds., 2008); Christoph Asendorf, *Die Künste im technischen Zeitalter und das utopische Potential der Kybernetik*, in DIE TRANSFORMATION DES HUMANEN 107 (Michael Hagner & Erich Hörl eds., 2008); Joseph Vogl, *Regierung und Regelkreis*, in CYBERNETICS—KYBERNETIK 67 (Claus Pias ed., 2004).

[18]*See* Claus Pias, *The Age of Cybernetics*, in CYBERNETICS 11, 23 (Claus Pias ed., 2016) ("[f]rom its beginnings, cybernetics was less a disciplinary science than a general methodology of action.").

[19]Francis Heylighen & Joslyn Cliff, *Cybernetics*, in ENCYCLOPEDIA OF COMPUT. SCI., 470, 470 (Anthony Ralston, Edwin D. Reilly, & David Hemmendinger eds., 2003).

[20]Clarke & Hansen, *supra* note 15, at 2.

[21]An edition of their protocols, originally compiled by Heinz von Foerster (*see infra* E.I.), can be found in Claus Pias ed., CYBERNETICS (2016); among those participants who would later rise to prominence beyond cybernetics were G. Evelyn Hutchinson, Donald MacKay, Margaret Mead, Oskar Morgenstern, John von Neumann, and Walter Pitts.

[22]RONALD R. KLINE, THE CYBERNETICS MOMENT 4 (2015).

[23]*Id.*

I. Communication and Control

Norbert Wiener gave cybernetics its name in 1948 when he published *Cybernetics: Or Control and Communication in the Animal and the Machine*. He characterized it as the theory of "control and communication."[24] It would be acutely adapted to the needs of the new post-war era, the "age of communication and control."[25] From its conception, cybernetics "was seen as encompassing traditional concerns in the study of the 'governance' of human systems."[26] The control perspective is reflected in the etymology of the term cybernetics. Its root is the Greek κυβερνητης (*kybernētēs*), meaning steersman.[27]

This foundational perspective had implications for its relation to politics.[28] Cybernetics was to establish an institutional reversal: Technology, not politics, was to solve society's problems. Homeostasis was the goal of this all-encompassing social technique. "Cybernetics . . . made an angel of control and a devil of disorder."[29]

Cybernetics was born in war.[30] In the throes of the Second World War's aerial warfare, Norbert Wiener laid the groundwork for cybernetic thought. In 1940, as the UK was being relentlessly attacked by the *Luftwaffe* during the Battle of Britain, Wiener offered his services to Allied war research. He devised "a remarkably ambitious calculating device, the 'anti-aircraft predictor,' designed to characterize an enemy pilot's zigzagging flight, anticipate his future position, and launch an anti-aircraft shell to down his plane."[31] The ultimate goal was using the enemy pilot's "own characteristic flight patterns to calculate his particular future moves and to kill him."[32] Consequently, the enemy figured as cybernetic developmental archetype.[33] When Wiener published his *Cybernetics* in 1948, he explicitly presented his work as a theory for the "world of Belsen and Hiroshima."[34]

Whilst Wiener was building his anti-aircraft predictor, Herold was a *Wehrmacht* soldier.[35] As lieutenant in the tank regiment *Großdeutschland* (Greater Germany), Herold constructed a micrometer drum that tried to enhance the shooting accuracy of tanks. It did so in an

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[24]Norbert Wiener, Cybernetics: Or Control and Communication in the Animal and the Machine 11 (1985).
[25]*Id.* at 39.
[26]Bernard Scott, *Second-Order Cybernetics*, 33 Kybernetes 1365, 1366 (2004); *see also* Pias, *supra* note 18, at 12 (quoting Dominique Dubarle, *Une nouvelle science, la cybernétique: vers la machine à gouverner*, 21 Culture Technique 48 (1990) (stating that cybernetics was "a model for social, economic, or political means of control or intervention, i. e. as a model for *machines à gouverner*"); Peter Galison, *The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision*, 21 Critical Inquiry 228, 232 (1994) (calling cybernetics a "new science of control mechanisms in which the exchange of information would play a central role.").
[27]*See* Henry George Liddell, Robert Scott & Henry Stuart Jones, A Greek-English Lexicon 1004 (1996) (translating it as "steersman, pilot" and listing usages throughout antiquity). Historically, concepts of governing can be grouped around the term. *See also* Vogl, *supra* note 17. For examples of Plato calling the art of governing κυβερνητικη: Plato, The Republic 488 d, e; Plato, Gorgias 511 d; *see also* Alc. 1, 125d; Aristotle, Rhetoric 2, 21; the Latin version of the term (*gubernator*) eventually became the root of words like government and governor.
[28]*See* Vogl, *supra* note 17.
[29]Galison, *supra* note 26, at 266.
[30]The centrality of the figure of the enemy in the genesis of cybernetics is illustrated by Galison, *supra* note 26, at 266, and Friedrich Kittler, *Norbert Wiener*, in Unsterbliche 47 (2004).
[31]Galison, *supra* note 26, at 229, 235 ("[a]s the AA predictor came to fruition, Wiener came to see it as the articulated prototype for a new understanding of the human-machine relation, one that made soldier, calculator, and fire-power into a single integrated system.").
[32]*Id.* at 238.
[33]*Id.* at 233.
[34]Wiener, *supra* note 24, at 28. *See generally* Geof Bowker, *How to Be Universal*, 23 Soc. Stud. Sci. 107, 113 (1993) ("Cyberneticists thought that through their insight into the nature of feedback control, society could be safely managed, and nuclear warfare prevented.") (internal quotations omitted).
[35]Herold was a soldier in the Second World War from 1941 onward. *See* Festschrift, *supra* note 12, at 15–17 (containing Herold's *curriculum vitae* up to 1998).

"astonishingly simple"[36] manner—Herold reversed the principle of calculating distance by using the shooting distance of enemy tank types as measurement for calculating their positions.[37]

The peculiar yet effective identification with the enemy remained a central part of Herold's thought and police work. Personal identification was one aspect of it—as laid out above in his musings about his proximity to the RAF.[38] However, this identification went *beyond* the personal aspect. Its ultimate thrust was *structural*: if the identification succeeded, crime could be read in such a way as to "automatically produce the forms of organization and deployment that adequately address it."[39] This notion of automatic adaptability of a system towards its object leads us to the third cybernetic perspective—namely feedback.

Herold saw his pressing task as "submitting the institutions of police and judiciary to feedback processes of self-steering and self-optimization in order to develop an aptitude for learning."[40] This would lead to a "higher qualitative level" of policing, where "repression is replaced by prevention, inertia by dynamic, hypotheses by prognoses, leadership by steering, and supposed experience by objectivity (*Sachlichkeit*)."[41] For Herold, cybernetic feedback would serve as the instrument to enact these processes of learning.

One ought to construct the police as a cybernetic system which operates on its own accord. Like in feedback control, like the beautiful basic model of cybernetics—the centrifugal governor. As soon as the speed excels the desired value, its arms move upwards and close its valve, leading the speed to decrease. In this way, a multitude of conceivable variants are kept under control. I view the police in precisely the same way.[42]

At this point, we can turn to Wiener's explication of the etymology of cybernetics once more. Wiener wrote, "[w]e . . . wish to refer to the fact that steering engines of a ship are indeed one of the earliest and best-developed forms of *feedback mechanisms*."[43] In this way, Wiener hoped for cybernetics to become "a science that would embrace intentionality" and learning.[44] Cybernetic "*control by informative feedback*"[45] would not be executed by "rigid control chains" but by dynamic "feedback loops."[46]

II. Utopianism

Cybernetics is inherently utopian.[47] Unsurprisingly so, as it was developed by thinkers confronted with the ideologies and cataclysms of the first half of the 20th century. They searched "for a quasi-immaculate description of the world,"[48] hoping to construct a new *Universalwissenschaft*.[49] They felt that "cybernetics is the biggest bite out of the fruit of the Tree of Knowledge that mankind has

[36]DOROTHEA HAUSER, BAADER UND HEROLD 41 (1998).

[37]*Id.* at 40–41 (describing his invention and how the impending defeat in the war prevented the use of Herold's model); Hartung, *supra* note 7, at 29 (remarking that Herold's construction was "proto-cybernetic").

[38]*See supra* A.

[39]Horst Herold, *Kybernetik und Polizei-Organisation*, 61 DIE POLIZEI 33, 36 (1970) (hereinafter "Herold, *Kybernetik*"); Horst Herold, *Polizeiliche Informationsverarbeitung als Basis der Prävention*, in PRÄVENTION UND STRAFRECHT 23, 26 (1976) (hereinafter "Herold, *Polizeiliche Informationsverarbeitung*").

[40]Herold, *Polizeiliche Informationsverarbeitung*, *supra* note 39, at 24.

[41]*Id.*

[42]Cobler, *supra* note 8, at 37.

[43]Wiener, *supra* note 24, at 12 (emphasis added).

[44]Galison, *supra* note 26, at 229.

[45]Wiener, *supra* note 24, at 113 (emphasis in original).

[46]Vogl, *supra* note 17, at 77.

[47]*See* Asendorf, *supra* note 17.

[48]Lutz Ellrich, *Die Ideologie der Kybernetik*, in ORDNUNG UND KONTINGENZ, 28, 35 (Hans Esselborn ed., 2009).

[49]*See* Bowker, *supra* note 34; Michael Hagner, *Vom Aufstieg und Fall der Kybernetik als Universalwissenschaft*, in DIE TRANSFORMATION DES HUMANEN 38 (Michael Hagner & Erich Hörl eds., 2008); Ellrich, *supra* note 48.

taken in the last 200 years."[50] As the German philosopher Max Bense presciently noted in 1951, "the cybernetic expansion of modern technology entail[ed] its *extension under the skin of the world*."[51]

With the term utopianism, I refer to a mode of thinking that constructs an ideal state of affairs, "a paradise that lies in the distant yet still attainable future."[52] It serves as a rhetorical device that contrasts an existing social order with an optimal alternative. Significantly however, in modern utopian thought, that alternative is portrayed as being attainable.

Cybernetics argued for a new age either conjecturally—in terms of the current state of technology and warfare—or ideally—in terms of the grand unfolding of Ideas about humanity.[53] By following a historical narrative, cybernetics offered a reading of history that inevitably lead to the necessity of cybernetic thinking.[54] Cyberneticists held that technological progress was a double-edged sword that "may be used for the benefit of humanity, but only if humanity survives long enough to enter a period in which such a benefit is possible."[55] Alternatively, it "may also be used to destroy humanity, and if it is not used intelligently, it can go very far in that direction."[56] Wiener poetically remarked that there is "a sin, which consists of using the magic of modern automatization to further personal profit or let loose the apocalyptic terrors of nuclear warfare."[57] The cyberneticists held that they were the ones to prevent the nuclear horrors of the modern age.[58] Plainly, their appeal is simultaneously utopian and dystopian.

Yet, cybernetics' utopianism was seldom explicitly stated, as its aim was being a value-free science. Manifestly poetic dreams of thinking machines and the amalgamation of subject and object were primarily portrayed in strictly scientific terms. Cybernetics simply perceived itself as breaking down "false dichotomies" between "human and non-human."[59] Wiener wrote in 1948 that his cybernetics studies "automata, whether in the metal or in the flesh."[60] In effect, they questioned "the ontology of 'humanity'"[61] itself. "For the classic cyberneticists . . . , the blurred boundary between human and machine opened an infinity of possibilities; . . . by the end of his life, . . . Wiener had come to see the human-machine relation as a model, if not an incarnation of the bond between God and 'man.'"[62] "[M]an's dominating aim" was considered to be "the replication of himself by himself by technological means. The form of this dominating aim becomes hence a super-machine."[63]

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[50]Gregory Bateson, *From Versailles to Cybernetics*, *in* STEPS TO AN ECOLOGY OF MIND 475, 481 (1987). Biblical allusions abound—not by chance. In fact, cyberneticists "directly appropriated" religious language. *See* Bowker, *supra* note 34, at 112

> In the religious dimension of cybernetic writing, it was often stressed that we are living in a particularly dangerous age, one where we have powers equal to what were once thought to be God's. These powers came in two varieties: the ability to create new life and the ability to destroy the world.

Wiener originally wanted the Greek αγγελος (angelos), meaning messenger, to be the term for his new ideas to stress the importance of information to his conceptual framework. He decided against it because of its obvious religious connection to the modern "angel"—a term that developed from the Greek word. *See* NORBERT WEINER, I AM A MATHEMATICIAN 322 (1956). Later, Wiener explicitly commented on cybernetics and theology converging. *See generally* NORBERT WIENER, GOD & GOLEM, INC. (1964).

[51]Max Bense, *Kybernetik oder Die Metatechnik einer Maschine*, *in* AUSGEWÄHLTE SCHRIFTEN BAND 2, 429, 436 (Elisabeth Walther ed., 1998) (emphasis in original).

[52]CARL SCHMITT, GLOSSARIUM 71 (2d ed. 2015).

[53]Bowker, *supra* note 34, at 113.

[54]*Id.* at 108.

[55]NORBERT WIENER, THE HUMAN USE OF HUMAN BEINGS 162 (1989).

[56]*Id.*

[57]Wiener, GOD, *supra* note 50, at 53.

[58]Bowker, *supra* note 34, at 113.

[59]*Id.* at 117.

[60]Wiener, *supra* note 24, at 42.

[61]Clarke & Hansen, *supra* note 15, at 3.

[62]Galison, *supra* note 26, at 260.

[63]Charles Arthur Muses, *The Logic of Biosimulation*, *in* ASPECTS OF THE THEORY OF ARTIFICIAL INTELLIGENCE 115, 116 (Charles Arthur Muses ed., 1962).

Cybernetic utopianism had political consequences. It was innately connected to the cybernetic concern with governing.[64] Their mastery of a theory of control would make them the preeminent engineers of the social order.[65] As Galison notes, "although the technical form of man's fundamental historical aim is a machine, the psychological and human content of that aim is *control*, mastery, the ability to impose his whims at will upon as much of the rest of the material universe as possible."[66] Those "who make cyborgs are, in the end, like gods."[67]

Before we examine how Herold put these cybernetic ideas in action, we need to examine the social, legal, and institutional context of Herold's work. As cybernetics was developed and popularized, post-war Western society underwent a broader shift. Feelings of fragmentation and the loss of a common social narrative changed the way we thought about society permanently. In the following part of this article, I examine how the world of legal ideas, particularly police and state law, responded to this new reality and how these developments presented an opening for Herold's cybernetic ideas.

C. Shifting Legal Paradigms

By the 1970s, Western intellectuals were diagnosing a crisis of unitary perspectives and common narratives.[68] They felt that the social fabric had become torn, fragmented into different language games that were often opposed to one another. In this new epistemic configuration, the Archimedean point from which all knowledge could be surveyed was considered lost.[69] From then on, they described Western society as having become "a polycentric, polycontextural system," applying "completely different codes, completely different 'frames,' completely different principal distinctions."[70] To those convinced of cybernetics, its promises of control and prediction seemed the most apt way to address and process this new uncertainty.[71]

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[64]*See supra* B.I.

[65]When Salvador Allende's newly elected socialist government set about constructing the perfectly steered society in Chile in the early 1970s, cyberneticists such as Stafford Beer seized the moment and offered their assistance. *See* Claus Pias, *Kybernetik und Revolution in Chile*, *in* POLITIKEN DER MEDIEN 131 (Daniel Gethmann & Markus Stauff eds., 2005) (exploring the cybernetic involvement in Chilean politics).

[66]Muses, *supra* note 63, at 116.

[67]Galison, *supra* note 26, at 261. *C.f.* Bowker, *supra* note 34, at 112 (discerning a "patriarchal vision of man as author of the new creation") *with* Siri Hustvedt, *The Delusions of Certainty*, *in* A WOMAN LOOKING AT MEN LOOKING AT WOMEN 135, 137 (2016) ("[d]espite excited predictions that technological innovation will usher in artificial wombs and everlasting life, it is still true that every human being is born from the body of his or her mother and every human being dies.").

[68]One of the most famous and significant of those diagnoses being JEAN-FRANÇOIS LYOTARD, LA CONDITION POSTMODERNE (1979).

[69]In Europe, so-called *French Theory* as a whole embodies these feelings, whilst in the United States these impulses led to a renewed interest in pragmatism and literary studies, as exemplified by RICHARD RORTY, CONTINGENCY, IRONY, AND SOLIDARITY (1989).

[70]Niklas Luhmann, *The Modern Sciences and Phenomenology*, *in* THEORIES OF DISTINCTION 33, 52 (William Rasch ed., 2002).

[71]Lyotard himself famously addressed cybernetics in his seminal proclamation of the postmodern condition. *See* Lyotard, *supra* note 68, at 11 f., 25, 79. For a discussion of the influence of cybernetics on French Theory see Vincent August, *Network Concepts in Social Theory: Foucault and Cybernetics*, Eur. J. SOC. THEORY 1 (2021); Céline Lafontaine, *The Cybernetic Matrix of 'French Theory'*, 24 THEORY, CULTURE & SOC'Y 27 (2007).

I. Preventive State

German jurisprudence did not remain untouched by these changing narratives.[72] The way public law scholars conceived of the *state* and its functions underwent a significant paradigm shift[73] during the 1970s and 1980s. As West German post-war society left its early stages of stasis and ostensible peace and quiet and entered a period of fierce political discussions, spikes in organized crime, and the terrorism of the RAF, the common understanding of the role of the state and public law shifted.[74]

Specifically, many public law scholars modified their understanding of state responsibilities. The term *Präventionsstaat* (preventive or precautionary state)[75] was used to make this modification negotiable within jurisprudential discourse.[76] It drew its conceptual strength from a historical narrative as its meaning was contoured by contrasting it with the "repressive state" that had preceded it. As the influential constitutional scholar Dieter Grimm summarized in 1986—he would be elected to the Federal Constitutional Court a year later—a repressive state *reacts*: "It can wait for events that are harmful to society (*sozialschädlich*) to occur."[77] Conversely, the newly arisen preventive state *acts*. It must detect the structures producing potentially damaging events and combat them before they reach facticity. Repression fights deviancy with the aim of restoring normalcy. It is "reactive and selective"—hence that is, visible. Prevention fights unwanted developments before they become reality. As such, it is prospective and extensive, "directed towards the future and complex," rendering it invisible when compared to repressive action.[78] This conception of governmental activity was "more encompassing than what was traditionally meant by 'preventing' crime" and "implied a very different role for the state."[79]

The duty of the state to prevent high-risk[80] scenarios hinges on prognoses. Officials would have to determine where structures producing dangerous situations exist before they show themselves. To do so, they would have to gather *knowledge*,[81] requiring "the state, independent of any concrete

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[72]Public law scholars in particular looked towards the social sciences in order to deal with the growing uncertainty about their own methods and perspectives. *See* Christian Bumke, *Die Entwicklung der verwaltungsrechtswissenschaftlichen Methodik in der Bundesrepublik Deutschland*, in METHODEN DER VERWALTUNGSRECHTSWISSENSCHAFT 73, 100–01, 105–08, 115–30 (Eberhard Schmidt-Aßmann & Wolfgang Hoffmann-Riem eds., 2004); Thomas Vesting, *Nachbarwissenschaftlich informierte und reflektierte Verwaltungsrechtswissenschaft*, in METHODEN DER VERWALTUNGSRECHTSWISSENSCHAFT 253 (Eberhard Schmidt-Aßmann & Wolfgang Hoffmann-Riem eds., 2004).

[73]*See* THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 92–110 (2d ed. 1970). For a perspective on paradigms in law, see Karl-Heinz Ladeur, *The Postmodern Condition of Law and Societal Management of Rules*, 27 ZEITSCHRIFT FÜR RECHTSSOZIOLOGIE 87, 97 (2006)

> [T]he knowledge base . . . cannot work without a normative element of selectivity which is adapted to the types of action that are to be structured . . . it develops certain 'paradigms' which channel the set of constraints by orienting patterns. This development is coordinated with the patterns and interpretive rules which steer the legal process in the stricter sense.

See also Andreas Voßkuhle & Thomas Wischmeyer, *The 'Neue Verwaltungsrechtswissenschaft' Against the Backdrop of Traditional Administrative Law Scholarship in Germany*, in COMPARATIVE ADMINISTRATIVE LAW 85 (Susan Rose-Ackerman, Peter L. Lindseth, & Blake Emerson eds., 2017) ("[a]dministrative law is in a perpetual process of change.").

[74]Larry Frohman, *Datenschutz, the Defense of Law, and the Debate over Precautionary Surveillance*, 38 GERMAN STUD. REV. 305, 321 (2015) (referring to "new technologies, new kinds of crime, and new surveillance practices" as causes of the shift).

[75]*See generally* Dieter Grimm, *Verfassungsrechtliche Anmerkungen zum Thema Prävention*, 69 KRITV 38 (1986); Erhard Denninger, *Der Präventions-Staat*, 21 KRITISCHE JUSTIZ 1 (1988).

[76]For a historical overview of this process, see GUNNAR FOLKE SCHUPPERT, STAATSWISSENSCHAFT 578–81 (2003); Bumke, *supra* note 72, at 117; Frohman, *supra* note 74, at 307.

[77]Grimm, *supra* note 75, at 39.

[78]*Id.*

[79]Frohman, *supra* note 74, at 308.

[80]Ino Augsberg, *Von der Gefahrenabwehr zu Risikomanagement und Opportunitätswahrnehmung*, in WISSEN AN DER GRENZE 209, 222 (Claudia Peter & Dorett Funcke eds., 2013) (explaining how risk "acts as a cipher for ubiquitous uncertainty.").

[81]See Voßkuhle & Wischmeyer, *supra* note 73, at 93.

danger or social problem, to collect all of the information that could possibly be of use in the discovery and preemption of abstract risks."[82]

This conceptual paradigm shift led to a focus on prediction, knowledge, and risk as novel central perspectives.[83] It needed new concepts which would allow the coordination of cognitive and normative elements.[84] However, the dearth of central, processable information pertinent to decision-making in (post-)modern society would not make this an easy task.[85] How could state organs gather robust information in this postmodern society where knowledge is fragmented across multiple epistemic communities, undermining attempts to adopt a central point of view? Administrative law, and police law in particular, needed to provide mechanisms that would transform non-knowledge into sufficiently resilient bases of information.[86] Where these mechanisms were structurally unable to reach certainty, decisions needed to be made under conditions of uncertainty.[87]

To sum it up, the paradigm shift in public law in the 1970s and 1980s was characterized by acknowledging the need to decide in situations of uncertainty and by deeming the state to be responsible for dealing with prevention and risk.[88] Administrative and police law came to be seen as an instrument of risk prevention, leading to a shift from repressive measures to increasingly—and potentially unlimited—precautionary measures.[89] It was now up to the state apparatus to *enact* this conceptual turn towards prevention.

II. Institutional Paradigm Shifts—the BKA Within the Preventive State

The BKA's institutional shifts of the 1970s mirrored the jurisprudential shift to prevention. Before the 1970s, the BKA played a minor role. Its main task was data collecting. The head of the Düsseldorf Criminal Police famously referred to the BKA as a "mere mailbox" in Wiesbaden.[90] It was allowed to act as a law enforcement agency only on the request of a State Criminal Police Office (*Landeskriminalamt*) or the Federal Minister of the Interior.[91]

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[82]Frohman, *supra* note 74, at 308.

[83]TRISTAN BARCZAK, DER NERVÖSE STAAT 368–76 (2020).

[84]*See* Ladeur, *supra* note 73, at 99–100.

[85]*See generally* Augsberg, *supra* note 80 (addressing this dearth and how to deal with it from a contemporary point of view and for administrative law).

[86]For an elaboration of such mechanisms, see INO AUGSBERG, INFORMATIONSVERWALTUNGSRECHT 41–78, 283–305 (2014).

[87]Bumke, *supra* note 72, at 118. For a contemporary point of view, see Ino Augsberg, *Einleitung: Ungewissheit als Chance, in* UNGEWISSHEIT ALS CHANCE 1, 4 (Ino Augsberg ed., 2009).

[88]In characteristic fashion for paradigm shifts, there was no conceptual unity in jurisprudence. Vastly different imaginations, expectations, and conceptualizations converged in terms that were superficially similar yet interpreted in divergent ways. *See* Bumke, *supra* note 72, at 117–18.

[89]One may claim that this shift is still ongoing—as evidenced by the recent debates on the newly introduced concept of "impending danger" (*drohende Gefahr*) introduced into police law statute by the Bavarian legislator which represents yet another step in the shift towards preliminary measures and precaution. *See generally* Ino Augsberg, *Vernachrichtendienstlichung der Polizei?, in* JAHRBUCH ÖFFENTLICHE SICHERHEIT 2018/2019 115 (Martin Möllers & Robert van Ooyen eds., 2019); Markus Möstl, *Projekt Musterpolizeigesetz*, 53 DIE VERWALTUNG 21 (2020); Hans-Heinrich Trute, *Zur Entwicklung des Polizei- und Ordnungsrechts 2013–2019*, 53 DIE VERWALTUNG 99 (2020). This legal shift is accompanied by a public discourse wherein *angst* has become a ubiquitous *a priori*. In what can be called a politics of angst, all anticipation of potential danger grows boundless. The spellbound concentration on uncertain danger renders the uncertainty of danger even more frightening. Addressing this pervasive angst replicates it. By trying to remedy it through security measures, angst is validated. The heightened perception of dangers and the desire for security are contingent on one another. Transplanted into law, this process is inherently excessive. Law's field of suspicion extends itself to no end. *See* Joseph Vogl & Burkhardt Wolf, *Angst und Prävention, in* WÖRTERBUCH DER GEGENWART 42 (Stefan Aue, Bernd Scherer, & Olga von Schubert eds., 2019). For police law and race in particular, *see* Amadou K. Sow, *How to Orient White Jurisprudence* CTR. FOR ETHICS J. 60 (2020).

[90]Wiesbaden was—and remains—the seat of BKA headquarters. *See Rund um die Uhr*, DER SPIEGEL, Feb. 2, 1969, at 88.

[91]*See Gesetz über die Einrichtung eines Bundeskriminalpolizeiamtes* [Law on the Establishment of a Federal Criminal Police Agency], Mar. 8, 1951, BGBl I at 165 § 4.

In 1969, the statute governing the BKA's competencies was amended for the first time. The amendment subtly broadened the agency's authority. Whilst the Agency remained dependent on a request to act, this request could now also be made by the Federal Public Prosecutor General (*Generalbundesanwalt*) who was more likely to do so.[92] In 1973, a second, more ambitious amendment followed, giving the BKA its own core investigative responsibilities.[93] Furthermore, it codified the Agency's function as central administrator of information and communication. Concurrently, the BKA vastly expanded its budget, employed more people,[94] and collected more data than ever before.[95]

Horst Herold steered and oversaw this expansion of legal and organizational scope. He became the BKA's president on September 1, 1971. Herold aimed to transform police work by way of "scientification" (*Verwissenschaftlichung*). Modern technology was the *operational* means of that transformation. Herold computerized policing and hoped that computerization would eventually pave the way towards utopian social engineering. As he put it—not stopping at a merely administrative transformation—"the computer is my source of hope—as a new instrument of diagnosing the whole of society."[96] Herold invented the dragnet investigation method[97] and set up the *Informationssystem der Polizei* (Police Information System) ("INPOL"), a new system of information retrieval connecting police stations all over the Federal Republic, allowing investigators to draw on an unprecedented wealth of data.[98] In this manner, Herold focused the entire agency on sophisticated methods of "prevention of a new kind."[99] A changed understanding of state responsibilities thus corresponded with an expanded role for agencies like the BKA justified by the paradigm of prevention.

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[92]*See Gesetz zur Änderung des Gesetzes über die Einrichtung eines Bundeskriminalpolizeiamtes* [Amendment to the Law on the Establishment of a Federal Criminal Police Agency], Sept. 19, 1969, BGBl I at 1717 § 1 (modifying Paragraph 4 of the BKA statute). Unencumbered by skepticism towards federal overreach and the desire to preserve the sovereignty of any state police agency, the *Generalbundesanwalt* did not have the institutional disinclination to call on the BKA.

[93]*See* Imanuel Baumann & Herbert Reinke, *Grundzüge der Organisationsentwicklung, 1949 bis 1983*, in Schatten der Vergangenheit 15, 43 (Imanuel Baumann, Herbert Reinke, Andrej Stephan, & Patrick Wagner eds., 2011) (expanding the BKA's power in the areas of drug offenses, gun crimes, counterfeiting offenses, politically motivated attacks on constitutional bodies of state, and diplomatic missions).

[94]Bergien, *supra* note 13, at 278, n. 90 (referring to BKA statistics that show an increase of budget and personnel between 1972 and 1982 from 50-million D-marks and 1.820 permanent posts to 290-million D-marks and 3.290 posts).

[95]Hannah, *supra* note 13, at 69 ("[a] 1979 inventory of the BKA's files and databases revealed that Herold had collected some 4.7 million names and information on thirty-one hundred organizations and had amassed a fingerprint collection of 2.1 million persons, a photo collection covering 1.9 million, as well as more extensive files on 3,500 people thought particularly militant. In addition, Herold had assembled a 'commune file' of WGs, in which some thousand 'objects' (addresses) and 4,000 persons were registered.").

[96]Cobler, *supra* note 8, at 40.

[97]Alex P. Schmid & Neil G. Bowie, *Databases on Terrorism*, in The Routledge Handbook of Terrorism Research 294, 294 (Alex P. Schmid ed., 2013). To this end, Herold could make use his experiences as head of police in Nuremberg where he developed his concept of "criminal geography" (*Kriminalgeographie*), i. e. the study of the interrelation between space and crime. *See* Horst Herold, *Kriminalgeographie*, in Grundlagen der Kriminalistik, Band 4: Kriminalistische Akzente 201 (Herbert Schäfer ed., 1968). Put to the test, it was vastly successful, leading to a considerable drop in crime rates. *See* Karrin Hanshew, *"Mister Computer" and the Search for Internal Security*, in Terror and Democracy in West Germany 110, 119 (Karrin Hanshew ed., 2012)

> Using systematically compiled information on the frequency and location of lawbreaking, Herold mapped the city of Nuremberg's criminality in order to identify where police force was most needed and then acted accordingly, rather than distribute units evenly throughout the city as was then the norm. In addition, further analysis of the data provided clues on what made certain spaces attractive to crime and, conversely, how space might be made unattractive and eventually crime-free.

See also Birgit Seiderer, *Horst Herold und das Nürnberger Modell (1966–1971)*, 91 Mitteilungen des Vereins für Geschichte der Stadt Nürnberg 317 (2004) (providing an in-depth study of Herold's Nuremberg era).

[98]Hannes Mangold, Zur Kulturgeschichte des Polizeicomputers 22 (2014) (enumerating that INPOL held data on wanted criminals and suspects—such as fingerprints, photographs, handwriting, and travel movements—and on missing goods—such as checks, banknotes, automobiles, and weapons—across 800 data terminals in West Germany). *See also* Bergien, *supra* note 13, at 258; Schenk, *supra* note 7, at 291 (noting that INPOL became so effective that the RAF began targeting data processing installations).

[99]Cobler, *supra* note 8, at 40.

III. Embodying a Paradigm Shift—Horst Herold's Preventive Police

This institutional shift towards prevention was prepared and accompanied by Herold's *theoretical* work. His cybernetically founded ideas of preventive policing were "genuinely revolutionary"[100] at the time. In his essays, he relentlessly emphasized prevention as the central function of policing. He, too, seized the narrative shift from repression to prevention. For Herold, the old-fashioned "search" for perpetrators (*Fahndung*) signified repression, whereas the new "research" (*Forschung*) towards structures of criminality represented modern prevention.[101] In Herold's conception, successful prevention depended on a transmission of scientific knowledge towards the state organs.[102] In the face of increased uncertainty, Herold emphasized the possibility of cybernetically steered rarefied administrative control by technological means. As Herold reportedly quipped during a meeting of the BKA with the *Bundestag* Committee on Internal Affairs, his new idea of prevention would mean "reaching the crime scene ahead of the criminal."[103]

Herold was able to process these significant theoretical and practical shifts through the prism of cybernetics. When Herold was sworn in as head of the BKA on September 1, 1971, the media and government response was enthusiastic. He stood for a new era of rational and modern policing. However, it soon became apparent that his ideas and conduct had divided state officials and police officers. While Herold exerted a fascinating influence on some, particularly the younger officials who were drawn to his promises of objectivity and progress, the old guard remained skeptical of his cybernetic dreams and resisted his ambitious reforms.[104] As Herold put it in December 1976, parts of the police apparatus exhibited an "irritated rejection and emotional reaction" to his ideas of technological dynamization.[105] Herold soon faced opposition not only from within the BKA from his old-fashioned conservative opponents but also external criticism from Germany's progressive intelligentsia, who had grown increasingly weary of Herold's grand project.

D. Policing the Cybernetic City of the Sun

I. Herold's Dreams of Techno-Policing

In his 1979 essay "Doctor Herold's City of the Sun," the German public intellectual Hans Magnus Enzensberger accused Horst Herold of attempting to "plan a cybernetically steered, interference-free society."[106] Enzensberger portrayed Herold as a bureaucratic utopian—already reflected in the title of his essay, a reference to the *Città del Sole*, an absolutist utopia envisioned by the imprisoned Dominican friar Tommaso Campanella in 1602.[107] Enzensberger rightly placed Herold at

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[100]Hanshew, *supra* note 97, at 119.

[101]HORST HEROLD, FAHNDEN UND FORSCHEN 13 (1966) (hereinafter Herold, FAHNDEN); Herold, *Polizeiliche Informationsverarbeitung*, *supra* note 39, at 24.

[102]Herold, FAHNDEN, *supra* note 101, at 14.

[103]Schenk, *supra* note 7, at 129 (reporting that Herold used the expression in a session of the Committee on Internal Affairs, Feb. 15 and 16, 1973).

[104]Andrej Stephan & Imanuel Baumann, *Kommissar Computer*, *in* SCHATTEN DER VERGANGENHEIT 79 (Imanuel Baumann, Herbert Reinke, Andrej Stephan & Patrick Wagner eds., 2011).

[105]Herold, *Polizeiliche Informationsverarbeitung*, *supra* note 39, at 26.

[106]Hans Magnus Enzensberger, *Der Sonnenstaat des Doktor Herold*, DER SPIEGEL, June 18, 1979, 68 (originally published in the intellectual magazine *Kursbuch*). To reach a wider audience, the essay was subsequently republished in *Der Spiegel*. Herold was reportedly petrified and deeply hurt when he read Enzensberger's polemic, as recounted by Schenk, *supra* note 7, at 39.

[107]GERMANA ERNST, TOMMASO CAMPANELLA 67 (2010) (quoting LUIGI AMABILE, FRA TOMMASO CAMPANELLA: LA SUA CONGIURA, I SUOI PROCESSI E LA SUA PAZZIA, Vol. I 227–28 (1882))

> brother Tommaso Campanella . . . , a person who is held throughout the world to be a leader in the sciences . . . in collusion with many lords, lay and ecclesiastical, both with the Pope and the Turk, have attempted and are daily attempting to raise a rebellion and deceive the people in order to turn them against the King [of Spain] our lord[.]

Campanella wrote the poetical dialogue in captivity—the ironic parallel between the captive philosophers Campanella and Herold is evident.

the junction of *repressive* traditionalism and *preventive* modernism.[108] Herold did not represent the BKA of old, the "*Alt-Nazis*" employed by the early Federal Republic in many functions of state,[109] evidently morally reprehensible by way of their former deeds, and keen to repeat their excesses of repression. Rather, Enzensberger admits that Herold represented an administrator of a new kind—one that worked toward essentially positive goals but employed subversive, corrupting, dystopian instruments—namely modern technology.[110] Enzensberger stressed that Herold's "power does not stem from the barrel of a gun but rather from the software of his computer."[111] In effect, Enzensberger bemoaned that the old utopias have been entrusted to new bureaucratic dystopians:

> If one considers that the old and dignified European tradition of utopian thought is virtually extinct in our days . . . , it appears as bloody afterwit that it is policemen who are crafting the Great Design. They want to bestow a New Atlantis of general interior security on us, a new social-democratic City of the Sun, a new Palisades Islands for social automats, steered and operated by the all-knowing and enlightened high priests of the oracle of Wiesbaden.[112]

In response to Enzensberger's charges, Herold *reaffirmed* his utopianism: "One has to create a livable (*lebenswert*) state. A citizens' state—a transparent state. And that state you can only make transparent through technology. Yes, of course that is a City of the Sun, but one that is feasible today. Here, within the police, it's feasible."[113] Utopianism permeated Herold's thought: It can be shown to be both the implicit and explicit leitmotif of his ideas. It is prevalent in Herold's intellectual foundation of cybernetics[114] and in turn informs his police theory.

Utopianism can both be demonstrated as the *implicit* framework of Herold's thought visions of the future, but at least once, Herold himself professed it explicitly. In 1975, he gave a speech at a Police College in Münster where he proclaimed that a "concrete utopia on the basis of real chances would befit the police."[115] Where Herold did not explicitly confess his utopianism, he tended to reveal it implicitly. Fundamentally, he constructed a teleological narrative leading towards a "healthy" society by technological means and within a cybernetic framework. In this new world, the law would be restricted to a merely *reactive* function.

Herold developed a historical narrative wherein he posited that humanity had made two fundamental steps towards progress so far: first by developing writing and then by inventing the printing press. Now, humanity was supposedly on the brink of the "third chapter of human civilization" which would be brought forth by the computer—by the vast extension of data provided by computational means. This new kind of cognition would, according to Herold, result in a

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[108]For the turn from repression to prevention *see supra* C.

[109]*See* Imanuel Baumann, *Weg mit den alten Kameraden?*, *in* SCHATTEN DER VERGANGENHEIT, 87 (Imanuel Baumann, Herbert Reinke, Andrej Stephan, & Patrick Wagner eds., 2011).

[110]In contrast to the *Alt-Nazi* bureaucrats of the early Bundesrepublik, Herold was part of the communist youth movement when he was young and later joined the Social Democratic Party (SPD). He remained interested in Dialectical and Historical Materialism throughout his life. *See, e.g.*, Cobler, *supra* note 8, at 37 ("Marx once put it beautifully—the police would be the agent of change in society, if only one conceived it correctly. That would however necessitate an emancipatory act vis-à-vis the current state . . . ."). Herold reportedly distributed a pamphlet he had written in the early 1950s (the exact date is unknown) called *Marxism-Leninism—Introduction and Critique* in the BKA offices, to much confusion among the agents.

[111]Enzensberger, *supra* note 106, at 78.

[112]Enzensberger, *supra* note 106, at 78. *See also* Hinrich C. Seeba, *Der Untergang der Utopie*, 4 GERMAN STUD. REV. 281, 287 (1981).

[113]Cobler, *supra* note 8, at 40.

[114]*See supra* B.II.

[115]Horst Herold, *Strukturveränderung des derzeitigen Fahndungssystems unter dem Gesichtspunkt des Besitzerprinzips*, BARCH B 131/1361.

categorical expansion of knowledge (not a mere gradual one). As a result of this expansion, a "fundamental democratization of society"[116]

To reach this new stage of human development, Herold called for transcending the current state of affairs. His interests lay in developing "a type of normative imagination (*Sollvorstellung*) of electronic data processing in policing as a *closed organizational entirety*" that would be independent of *what is* "and thus needs to adopt a forward-thinking stance, further into the unknown."[117] In this way, technology would point the way forward to the next stage of social progress by guiding error-prone humans towards a society in permanent technologized equilibrium.

Herold considered the police as playing a crucial role in this next step of civilization. Police were called upon to participate in "the great intellectual (*geistige*) task of progressing from an authoritarian order to a legal order, from small scale to universality."[118] This role arose, as Herold thought, from the police's societal role. It was located at a key point in our social fabric, acting at the point "most immediate to the realities" of the present moment. The police enjoy a "privilege of insight into deviant behavior and structural deficits of society" which is "superior to all other state organs." This cognitive preeminence of the police makes it ideally suited as an instrument of "diagnosis" for the social organism. It alters its function from the "part of the enforcer" to the "task of social sanitation."[119] To fulfil its expanded role, the "police of the future"[120] would have to become "higher-level, scientifically interdisciplinary."[121] The radical transformation of law enforcement into the "police of the future" would be facilitated by the "objectivization" (*Verwissenschaftlichung*) of its work through data and its processing. This is a crucial point for Herold, as it marks the difference between idle dreaming and attainable states of things. He considered his thoughts and actions to travel the objective, scientific, and verifiable path, remarking that "[the] road ahead is steep and arduous, yet ultimately successful" when guided by rationality.[122]

At the most concrete level of police work, Herold demanded a reformation by "scientification"[123] that would replace subjective "experience"[124] and "emotions"[125] with "objectivity." This vocabulary highlights the post-human character of Herold's ideas. The individual human was seen as an obstacle in the march towards objectivity. Consequently, Herold wished to eliminate the human elements from criminal procedure and ultimately, from criminal law entirely. First, forensic science would have to become "an instrument of objectivization of criminal procedure namely by developing it to such a high scientific perfection and quality that the witness becomes unnecessary."[126] Second, judges would subsequently become unnecessary. Instead, proceedings would be "exclusively based on scientifically verifiable, measurable material evidence."[127]

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[116]Horst Herold, *Künftige Einsatzformen der EDV und ihre Auswirkungen im Bereich der Polizei*, 28 Kriminalistik 385 (1974) (hereinafter "Herold, *Künftige Einsatzformen*"). *See also* Horst Herold, *Demokratisierung und Internationalisierung*, 21 Die Neue Polizei 145 (1967) (hereinafter "Herold, *Demokratisierung*"). The Marxian overtones of this teleological conception of history are by no means coincidental: *See* Herold's left-wing roots as laid out *supra* note 110.

[117]Horst Herold, *Organisatorische Grundzüge der elektronischen Datenverarbeitung im Bereich der Polizei*, 18 Taschenbuch für Kriminalisten 240, 240 (1968) (emphasis in original).

[118]Herold, *Demokratisierung, supra* note 116, at 145.

[119]Herold, *Künftige Einsatzformen, supra* note 116, at 392.

[120]*Id.*

[121]Horst Herold, *Polizei in der Gesellschaft*, 59 Die Polizei 261, 262 (1968).

[122]Herold, *Demokratisierung, supra* note 116, at 146.

[123]Herold, *Künftige Einsatzformen, supra* note 116, at 392.

[124]Herold, *Polizeiliche Informationsverarbeitung, supra* note 39, at 24.

[125]Herold, *Demokratisierung, supra* note 116, at 145.

[126]Cobler, *supra* note 8, at 30.

[127]*Id.*

Whereas the individual human being essentially disappears from Herold's technological visions, the police and the state were conceived in organic metaphors.[128] Herold suggests thinking of the police as a "living organism"[129] securing its viability ("*Lebensfähigkeit*") under the conditions of a "changing environment."[130] Similarly, Herold likened the automatization of police work to a "body" being "implanted with an entirely new nervous system with modified sensibility and reactivity."[131] Herold's BKA would be this social organism's brain, the "cerebrum of German police."[132] Related to the collective organism of the state, the police's task was "social sanitation."[133] Herold likened state and society to a patient and claimed he had the means to "permanently measure society's pulse, like a doctor—hence the term social sanitation—and keep our legal system in a dynamic state via rational insights."[134] In this framework, the police would act as "an instrument of social diagnosis" that would conduct "clinical examinations" to detect structures of deviancy.[135]

Herold held that, to realize this transformation, "a renunciation of traditional thinking, a rethinking, a radical intellectual restart is certainly needed."[136] To realize this progress, *cybernetics* would provide the conceptual framework. For Herold, cybernetics was "among the most significant scientific achievements of our century."[137] To him, it constituted the "most advanced attempt to translate" the technological realities of the new age "into state action." Cybernetics offered "epochal concepts" to guide that translation, namely "feedback" and the "sublation of the increasing specialization of all modern sciences towards a new synopsis and unity, applicable to all biological, technical, economic, and social systems that—like living organisms—are forced to learn in a loop of cognition and correction of information."[138] In his 1970 essay, *Kybernetik und Polizei-Organisation* ("Cybernetics and the Organization of Policing"[139]), Herold proposed a reorganization of the police into a "self-steering organism," the "sum of feedback loops," a "living organism," adaptable to change.[140] A "radical approach" would be necessary to enact that transformation. As Herold put it, "*cybernetics* supplies that radical approach."[141] Herold formulated his central ideas in cybernetic terms, fundamentally conceiving the police as a "cybernetic system."[142]

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[128]*See* Vogl, *supra* note 17, at 77 (noting that the organism became a central political metaphor at turn of the pre-modern towards the early modern era). *See generally* ALBRECHT KOSCHORKE, THOMAS FRANK, ETHEL MATALA DE MAZZA, & SUSANNE LÜDEMANN, DER FIKTIVE STAAT: KONSTRUCTIONEN DES POLITISCHEN KÖRPERS IN DER GESCHICHTE EUROPAS (2007) (examining organicist metaphors in state constructing).

[129]*See* Herold, *Kybernetik*, *supra* note 39, at 33; Herold, *Künftige Einsatzformen*, *supra* note 116, at 385.

[130]Herold, *Kybernetik*, *supra* note 39, at 33.

[131]Herold, *Künftige Einsatzformen*, *supra* note 116, at 385.

[132]As reported in *Kommissar Computer*, DER SPIEGEL, June 28, 1971, 53.

[133]Cobler, *supra* note 8, at 36.

[134]*Id.*

[135]*Id.*

[136]Herold, *Demokratisierung*, *supra* note 116, at 145.

[137]Herold, *Polizeiliche Informationsverarbeitung*, *supra* note 39, at 24.

[138]Horst Herold, *Information und Staat*, in FESTSCHRIFT FÜR RUDOLF WASSERMANN ZUM SECHSZIGSTEN GEBURTSTAG 359, 360 (Christian Broda, Erwin Deutsch, Hans-Ludwig Schreiber, & Hans-Jochen Vogel eds., 1985) (hereinafter "Herold, *Information und Staat*").

[139]A note on the word "*Polizei*"—the German language does not know a verb like "policing," yet it often fits Herold's dynamic, cybernetic understanding of police work which informs his whole conception of the police as an organization much better than the German noun "*Polizei*," hence my alternately translating "*Polizei*" as either "police" or "policing."

[140]Herold, *Kybernetik*, *supra* note 39, at 33, 37.

[141]*Id.* at 33 (emphasis added).

[142]Cobler, *supra* note 8, at 37.

II. Antinomianism

Utopianism has grave implications for law. As Carl Schmitt, the paradigmatic thinker of deficiency, unraveling, and cataclysm,[143] pointed out in his later work, utopianism *negates* law. Any perfect and ubiquitous enforcement of law would threaten the legal form itself.[144] As a normative structure, law depends on a gap between what is and what should be—*Is and Ought*. In a state of utopia, these two dimensions necessarily converge. Everything that should be *is*. Hence, law dissolves.

Schmitt's critique of utopia is "deeply imbricated" in his "broader critique of technicity."[145] In his conception, technology allows the escalation of utopia "to ever increasingly audacious dimensions."[146] Technology creates standardized humans and thus strips them of their individuality and ultimately their humanity.[147] His portrait of a technological utopia lays bare the horrifying, dystopian core of all utopian desires.[148]

Cybernetics as a fundamentally utopian worldview[149] carries these antinomian perspectives with it. Its medium of replacement is technology. Cybernetics replaces legal normativity with the calculated normativity[150] of its technological instruments. It wholly supplants the legal concept of normativity as counterfactual persistence with the idea of dynamic adaptability.

Herold's cybernetic utopianism carried these antinomian implications with it. In Herold's view, the legal world still clung to the "fiction of positivism" that statutory law held answers to all hypothetical cases. In reality, "accelerated social and economical developments ... laid open the incompleteness (*Lückenhaftigkeit*[151]) of the legal system."[152] Herold felt that there was a "gap between the vast superstructure of laws, ordinances, writs, rulings, directives, and instructions" and the "technical and social development status" Those legal questions that "lie within the gaps are no longer solvable in a purely juridic way."[153]

To address this developmental gap, "public law" would have to "change from authoritarian law (*Obrigkeitsrecht*) to a modern cooperative law between state and citizen."[154] Evidently, Herold's ideas are not thoroughly coherent. Human agency is either completely subsumed by techno-legal progress or empowered by it. His remarks on the matter oscillate permanently between technological promise as realization of the rule of law through its perfection or as abolishing the need for law entirely, thereby also rendering the rule of law obsolete. This paradoxical oscillation perhaps mirrors the close connection between utopia and dystopia remarked upon by Carl Schmitt.

The functioning of the state itself would fundamentally change due to cybernetic insight. Drawing on vast data by technological means would enable law-making to "adapt to the changes and developments of crime in a versatile manner and without being dependent on long-term observations." Herold compared this adaptability of law to crime with the ability of "commerce

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[143]*See* Ino Augsberg, *Carl Schmitt's Fear*, 23 LEIDEN J. INT'L L. 741 (2010); JACQUES DERRIDA, POLITIQUES DE L'AMITIÉ 102 (1994) ("Schmitt was more sensitive than so many others to the fragility and 'deconstructible' precariousness of structures, borders, and axioms that he wanted to protect, restore, and 'conserve' at all costs."). Schmitt had, of course, himself been active in the business of destruction during his tenure as the *Kronjurist* of the Third Reich.

[144]For a fruitful exploration of the technological threats to law as a form, see Timo Rademacher, *Of New Technologies and Old Laws*, 5 EUR. J. FOR SEC. RSCH. 39 (2020).

[145]Joshua Smeltzer, *Technology, Law, and Annihilation*, 81 J. HIST. IDEAS 107, 108 (2020).

[146]Schmitt, *supra* note 52, at 35.

[147]*Id.* at 35, 89; CARL SCHMITT, THEODOR DÄUBLERS 'NORDLICHT' 59, 66 (2009).

[148]Smeltzer, *supra* note 145, at 113.

[149]*See supra* B.II.

[150]I take the term "calculability of normativity" from Vaios Karavas & Gunther Teubner, http://www.CompanyNameSucks.com, 4 GERMAN L.J. 1335, 1347 (2003).

[151]The problematization of *Lücken* (gaps) in law has a long tradition in German jurisprudence, starting with ERNST ZITELMANN, LÜCKEN IM RECHT (1903) and continuing to this day.

[152]Herold, *Polizeiliche Informationsverarbeitung*, *supra* note 39, at 23.

[153]*Id.*

[154]Cobler, *supra* note 8, at 39.

and industry to adjust to changes on the market." Whereas now, the "enormous superstructure of laws and ordinances" is unable to keep up with actual conditions, under cybernetic conditions this superstructure would be "subject to a continuous and adequate actualization" akin to the mechanism of feedback.[155] Consequently, *legal* order would be dynamized through the ideas of feedback and reflexivity.

> If police and judiciary would be authorized to permanently process [society's] potential for change, establish a permanent feedback, dynamize the whole process, we would have an instrument by which the state would remain acceptable—instead of creating counterforces and hostility towards the state (*Staatsgegenmacht und Staatsfeindschaft*), it would create movement, development … that the state would keep its grip on.

Fundamentally, Herold did not posit the law as the central agent in this process of increased control. His cybernetic mindset replaced law with technology. The law appeared more as an afterthought, a mere function of technological and cybernetic necessities. It would adapt to new ways of control, not vice versa.

All in all, Herold's cybernetic visions seem to confirm the Schmittian assumption that utopia is the annihilation and negation of law.[156] In Schmitt's view, the solution to this quandary, "the way toward … freedom" could only be "the way out of technology."[157] Such a way is neither attainable nor feasible in our thoroughly technologized present. Thus, we need to look for ways of productively channeling the hopeful energies of technological process while simultaneously guarding against its dystopian drives. Before examining the chances of such an undertaking, we turn once more to our guide in history, Horst Herold, to look at his fate and long-term legacy. Herold's cybernetically founded antinomianism lives on to this day. It persists to in modern security law and in the federal security structure of Germany.

III. Heroldian Legacies

After the so-called German Autumn of 1977—the height of RAF terrorism where Federal Public Prosecutor General Siegfried Buback, banker Jürgen Ponto, and Confederation of German Employers' Associations president Hanns-Martin Schleyer were assassinated—Herold's reputation deteriorated. When Schleyer was kidnapped on September 5, 1977, Herold oversaw the most extensive dragnet search up to that point.[158]

However, Herold failed to discover where Schleyer was held,[159] eventually resulting in Schleyer's murder on October 18, 1977.[160] These failures put the efficacy of Herold's technological surveillance and search apparatus in question. In the resulting critical atmosphere, he lost the initial goodwill directed towards him, both in the public sphere and within law

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[155]Herold, *Künftige Einsatzformen*, *supra* note 116, at 392.

[156]A thorough analysis of Schmitt's negative conception of utopianism and the law is offered by Smeltzer, *supra* note 145.

[157]Schmitt, *supra* note 52, at 101.

[158]Hannah, *supra* note 13, at 70.

[159]On 12 September 1977, the government's RAF task force listened to an audiotape containing the captive Schleyer's voice. On it, he harshly criticized Herold's exclusive reliance on technology, tragically stating that "I am not ready to leave life silently in order to cover up the government's mistakes, the mistakes of the parties carrying the government and the inadequacies of their much-hyped [*hochgejubelten*] head of BKA."

[160]See Hannah, *supra* note 13, at 70 ("when it became clear that Schleyer was being held somewhere in the [Cologne] area, Herold's staff was able to draw on his computer files to compile a list of eight apartments that fit all the suspicious criteria. The fourth on the list, it would later turn out, was indeed where Schleyer was held." Yet, "a number of opportunities to search it were passed up. Schleyer was later taken from the apartment and killed on the way to a border crossing.").

enforcement and the government.[161] Many within the German state and police apparatus saw Herold as representative of the danger of social engineering and separating the federal police from checks and balances.[162] They rejected Herold's challenges to conventional delineations of politics, police, and the judiciary.[163] At the time, Herold increasingly saw himself as fighting a losing battle against the "traditional bureaucratic principles of organization."[164] He felt that he was prevented from enacting his radical transformations by the political establishment, the media, and parts of the police.[165] In 1979, he lamented that his cybernetic transformation of society was "such a simple thought! One is almost ashamed of articulating it. But it is not doable—at least not at the moment."[166]

On March 31, 1981, Gerhart Baum, who had become Minister of the Interior in 1978 and was deeply skeptical of police overreach, forced Herold to retire. By this time, he had become "*Kommissar Computer*," a "symbol of complete electronic surveillance in the collective memory of West Germans."[167] The well-known German journalist Heribert Prantl recounts that during his law school years (1974–1979), "we law students deemed Horst Herold to be the police's Dr. Mabuse, a data sleuth, a computer maniac, who swigs information like an alcoholic swigs booze. His dragnet search via computer . . . seemed to us a creation from the edge of hell."[168] Yet, when Prantl first met Herold in 1989, he encountered neither a "law and order freak," nor a "personification of police hybris" but rather a "pensive criminal philosopher—a political theorist and public servant (*Staatsdenker und Staatsdiener*)."[169] Prantl's assessment reflects the ambivalence of Herold—caught up between utopian hopes and sobering realities.

Years after his retirement, Herold's contributions were reevaluated within the BKA as well. As its current head put it in the BKA's obituary for Herold in 2018, Herold was "a visionary, whose ideas carry the BKA to this day."[170] His conception of autonomous federal security structures, free from administrative encumbrances, critically reliant on data, and dynamically adaptive had a resounding effect on modern law enforcement.[171] Intelligence-led policing has become a principle

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[161]Notably, Herold began to be harshly criticized both by parliament and the executive, as can be gleamed from the so-called Höcherl report, a federal investigation into Herold's failure to find Schleyer (BT-Drs. 8/1881, June 7, 1978); for a critique firmly within the point of view of legal discourse, see INGO MÜLLER, HORST HEROLDS SCHÖNE NEUE WELT StV 206 (1981).

[162]Bergien, *supra* note 13, at 269 (noting that the state police agencies and interior ministers were particularly wary of Herold's extensions of federal policing powers).

[163]Wolfgang Schulte, *Entwicklung der Polizeiorganisation in der Bundesrepublik Deutschland*, in HANDBUCH POLIZEIMANAGEMENT 23, 38 (Jürgen Stierle, Dieter Wehe, & Helmut Siller eds., 2017).

[164]Herold, *Kybernetik*, *supra* note 39, at 33. It is worth nothing that Herold was not entirely anti-bureaucratic. Rather, his conduct did conform to a Weberian notion of bureaucracy in the sense that once created, bureaucracy will immediately move to make itself indispensable. *See* DAVID GRAEBER, THE UTOPIA OF RULES 150 (2015) ("[t]he chief way to do this is always by attempting to monopolize access to certain key types of information"). *See also* MAX WEBER, WIRTSCHAFT UND GESELLSCHAFT 563 (1976) (emphasizing that a bureaucracy "*sine ira ac studio* . . . develops itself all the more perfectly, the more it dehumanizes."). It demands "the personally disinterested, so strictly 'objective' *expert*" ("*sachlichen*" Fachmann; emphasis in original). The correspondence of Herold's vocabulary and the semantics Weber attributes to modern bureaucracy are obvious. The proximity of bureaucracy and techno-utopianism however, may seem surprising at first. Yet, it is neither conceptually nor historically uncommon. As the anthropologist David Graeber put it,

> bureaucracy enchants when it can be seen as a species of what I've called poetic technology, that is, one where mechanical forms of organization, usually military in their ultimate inspiration, can be marshaled to the realization of impossible visions: to create cities out of nothing, scale the heavens, make the desert bloom.

DAVID GRAEBER, THE UTOPIA OF RULES 164 (2015).

[165]Cobler, *supra* note 8, at 37.

[166]*Id.* at 39.

[167]Bergien, *supra* note 13, at 258.

[168]Prantl, *supra* note 1.

[169]Prantl, *supra* note 1; in his obituary for Herold, Prantl portrayed him as "probably the most brilliant policeman Germany has ever had. He was the Prometheus of German police—he gave it the computer." *See* Prantl, *supra* note 5.

[170]BKA, *supra* note 4, at 2.

[171]For its legacy within the BKA in particular, see Alexander Schmidt, *Terrorabwehr durch das Bundeskriminalamt*, 43 KRITISCHE JUSTIZ 307, 308 (2010).

of modern German security law.[172] Consequently, today we find ourselves facing an ever-growing apparatus of digitized prediction. Herold's vision of the BKA as a cerebrum, as the centralized data collecting agency remains in place.[173] In fact, the BKA's data collecting is continually reaching new heights.[174] Moreover, buoyed by modern technology, the contemporary BKA continues to redraw its own battle lines and encroach far into the *preliminary* stages of potential crimes, much like Herold had imagined.

Legislation in the past thirty years in particular has accelerated this process. In 1997, the BKA was expanded into a fully equipped law enforcement agency. The renewed fears of terrorism in the 2000s led to a further strengthening and centralization of federal police power[175] and preventive competencies.[176] In 2008 the statute governing the BKA was amended once more, reinforcing its role as a centralized police force operating by using vast amounts of data.[177] Much like Herold envisioned, the organizational and functional separation of police and intelligence agencies is being weakened,[178] leading to an increasing transformation of police work into intelligence work.[179]

The modern BKA is situated within the modern conceptual field of "security law," which encompasses preventive aspects of police work, the intelligence agencies, and the fight against terrorism; it is situated within crisscrossing competencies, split between European, federal, and state-level legislation.[180] Much like Herold's cybernetic intellectual framework, modern security law is being shaped by the paradigm of the enemy, the terrorist, and dreams of perfected prevention. The security apparatus of today is frequently accused of portraying criminals as "enemies"—in particular those who are deemed terrorists.[181] However, Herold's reflexive personal and structural consideration of the enemy as the one closest to oneself is no longer heeded. Similarly, the more idealistic aspects of Herold's legacy that the BKA rejected were his ideals of democratization of the police and society as a whole.[182] Caught up in the ever-increasing fight against perceived grave threats, Herold's project of *de-subjectivizing* police work—and ultimately state power itself—was left unfulfilled. His intense focus on fighting terrorists did not constitute the realization but rather the frustration of his initial sociopolitical project.[183]

Evidently, the dystopian dangers of techno-policing remain. The lingering utopian hopes of preventive policing, of "reaching the crime scene ahead of the criminal," are exemplified by current conceptions of techno-policing. Like Herold's ideas, they maintain an anti-legal affect. These contemporary dreams of techno-policing will be the subject of the final, prescriptive part of this essay.

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[172]Matthias Bäcker, *§ 28 Sicherheitsverfassungsrecht*, in HANDBUCH DES VERFASSUNGSRECHTS 32 (Matthias Herdegen, Johannes Masing, Ralf Poscher, & Klaus Ferdinand Gärditz eds., 2021).

[173]Schmidt, *supra* note 171, at 308.

[174]Bergien, *supra* note 13, at 284.

[175]ANICEE ABBÜHL, DER AUFGABENWANDEL DES BUNDESKRIMINALAMTES 123 (2010).

[176]Bäcker, *supra* note 172, at 24.

[177]Fredrik Roggan, *Das neue BKA-Gesetz – Zur weiteren Zentralisierung der deutschen Sicherheitsarchitektur*, NEUE JURISTISCHE WOCHENSCHRIFT 257, 257 (2009); Ralf Poscher, *Sicherheitsverfassungsrecht im Wandel*, in DER EIGENWERT DES VERFASSUNGSRECHTS 245, 248 (Thomas Vesting & Stefan Korioth eds., 2011).

[178]Bäcker, *supra* note 172, at 6.

[179]Augsberg, *supra* note 87, at 116.

[180]*See* Wolf-Rüdiger Schenke, Kurt Graulich & Josef Ruthig, *Einführung*, in SICHERHEITSRECHT DES BUNDES 1, 1–53 (Wolf-Rüdiger Schenke, Kurt Graulich, & Josef Ruthig eds., 2d ed., 2019); it is also a field that is influenced by increasingly tight-knit judicial review, as exemplified by the recent decision made in 141 BVerfGE 220. Its effect on legislative action and jurisprudence remains to be fully assessed.

[181]*See* Markus Möstl, *Staatsaufgabe Sicherheit in Zeiten des Terrorismus—der rechtsstaatliche Rahmen*, in DER TERRORIST ALS FEIND? 67 (Andreas Kulick & Michael Goldhammer eds., 2020).

[182]Schulte, *supra* note 163, at 38.

[183]DAVID GUGERLI, SUCHMASCHINEN 65 (2009).

E. Second-Order Cybernet(h)ics

In the concluding part of this article, I will argue—perhaps counterintuitively—that Herold's ultimate failure was not *adapting* cybernetics but rather *not staying with it all the way*.[184] I am referring here to the development of so-called "*second-order cybernetics*."

First, I will characterize second-order cybernetics with a focus on its relevance for legal thought. To do so, I will first draw on the characterization of first-order cybernetics laid out above[185] and recount how the introduction of the *observer*—second-order cybernetics' fundamental shift—modifies first-order perspectives and transforms its dreams of utopian control into restrained ethics of uncertainty and alterity. Second, I will demonstrate the adaptability of legal thought in relation to the new cybernetics by briefly referring to Luhmann's systems theory and its reception in German jurisprudence. Third, I will argue that jurisprudence has not exhausted the possibilities of second-order cybernetics, specifically of its turn towards *ethics*. To illustrate this point, I will draw on an example of predictive policing to tentatively consider how second-order perspectives might provide answers for dealing with racial discrimination.

I. From First to Second Order

First-order cybernetics—for all its novelty—still rested on a division between observer and observed, descriptor and described, subject and object. In other words, it remained "inscribed within classical scientific thought" by holding on to "idealist dualisms."[186] First-order cybernetics presented itself as a "power relationship"[187] where "the observer is outside the system being observed: he treats it as an artifact 'under his cold gaze,' where neither artifact nor observer is changed by the act of observation."[188]

The turn from first to second-order cybernetics hinged on a changed understanding of the observer.[189] In second-order cybernetics, her presence is "admitted rather than disguised."[190] Where first-order cybernetics instituted a boundary between observer and system, in second-order cybernetics, the observer "is understood to be both within the system being described and affected by it."[191] The first-order observer is "replaced by a multitude of second-order observers. Cognition turned from representation into a never-ending process of recursive computation that generates descriptions of reality."[192] In this way, cybernetics is reformed as a "meta-technique of relating the object-level and the meta-level. It is both reflection and the reflection of reflection"[193] —hence the moniker of *second*-order.

The second-order cyberneticist Francisco Varela stressed that knowledge is "built from small domains, that is microworlds and microidentities."[194] These domains "are not coherent or

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[184]*See* Herold, *Information und Staat*, *supra* note 138, at 361 (noting that after his retirement, Herold wrote that cybernetics had not yet turned its attention towards "new insights into the essence of information itself," leading one to assume that Herold had not kept abreast of the new developments within cybernetics).

[185]*See supra* B.

[186]Clarke & Hansen, *supra* note 15, at 4; *see generally* Hustvedt, *supra* note 67 (for the amalgamation of technological dreams and old-fashioned dualisms).

[187]Ranulph Glanville, *The Purpose of Second-Order Cybernetics*, 33 Kybernetes 1379, 1380 (2004).

[188]*Id.* at 1383.

[189]*Id.* at 1384. *See also* Dirk Baecker, *Kybernetik zweiter Ordnung*, in Wissen und Gewissen 17, 17 (Heinz von Foerster ed., 2011) (characterizing this turn as the "discovery of the observer").

[190]Glanville, *supra* note 187, at 1380.

[191]*Id.* at 1384.

[192]Erich Hörl, *Luhmann, The Non-trivial Machine and the Neocybernetic Regime of Truth*, 29 Theory, Culture & Soc'y 94, 99 (2012).

[193]*See* Mario Grizelj, *(Fehl)Lektüren der Kybernetik*, in Theorietheorie, 111 (Mario Grizelj & Oliver Jahraus eds., 2011) (advancing a "theory of theory" interpretation of cybernetics).

[194]Francisco Varela, *The Reenchantment of the Concrete*, in Incorporations, 320, 336 (Jonathan Crary & Sanford Kwinter eds., 1992).

integrated into some enormous totality regulating the veracity of the smaller parts. It is more like an unruly conversational interaction: the very presence of this unruliness allows a cognitive moment to come into being according to the system's constitution and history."[195]

The central figure in said turn was Heinz von Foerster.[196] In a series of works, published between 1974 and 1982,[197] he developed its central ideas. He held "that the cybernetics of observed systems we may consider to be first-order cybernetics; while second-order cybernetics is the cybernetics of observing systems."[198] A second-order observer "is observing another observer to see what the latter can and cannot see."[199] That process "occurs only when we observe an observer *as observers*."[200]

Where traditional cybernetics held the perspective of *reflexivity*,[201] the new cybernetics was based on *recursion*. Recursion means that processes use their own results as bases for further processes. Thus, two sides of a relation are alternatively basis and result of each other. In contrast to reflexivity, recursion entails a closure. Whatever is processed is not imported from elsewhere, but rather produced by the process itself. Epistemologically, the switch from reflexivity to recursion revealed the closed, contingent nature of observation. The observer has only her own operations at her disposal. To make sense of what is happening, to construct "order from noise,"[202] she cannot import the structures of her observation from elsewhere.[203] An observer's descriptions are always *the* observer's descriptions. As Luhmann put it, "the descriptive marking of structures is completely relative to a system's operations."[204] Each specific perspective brings necessary blind spots with it.[205] All pretensions of static ontologies and utopian stasis disappeared.

Crucially, von Foerster also pondered the ethical consequences of his switch. His "*cybernethics*" invited "the observer of systems to 'enter the domain of his own descriptions' and accept the responsibility for being in the world."[206] Once this contingency of observation and description is accepted, "cognitive efforts have the purpose of helping us cope in the world of experience, rather than the traditional goal of furnishing an 'objective' representation of a world as it might 'exist' apart from us and our experience."[207] As Humberto Maturana and Varela poetically put it: "The *knowledge of knowledge compels* ... us to realize that the world everyone sees is not *the* world but *a* world which we bring forth with others. It compels us to see that the world will be different only if we live differently."[208]

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[195]*Id.*

[196]Austrian-American scientist, philosopher, and polymath (1911–2002).

[197]*See* Bruce Clarke, *Heinz von Foerster's Demons*, *in* EMERGENCE AND EMBODIMENT 34, 35 (Bruce Clarke & Mark B. N. Hansen eds., 2009) (listing von Foerster's relevant works). Von Foerster's writings of the era were in essence a consolidation of already present "alternative cybernetic trends." Interestingly, the shift also represented a step away from practical orientation. *See* Hörl, *supra* note 192, at 98 (noting that von Foerster "never built any physical machines.").

[198]Heinz von Foerster, *Cybernetics of Cybernetics*, *in* UNDERSTANDING UNDERSTANDING 283, 285 (2003).

[199]NIKLAS LUHMANN, RISK 21 (1993).

[200]*Id.* at 223 (emphasis added).

[201]*See supra* B.I.

[202]Heinz von Foerster, *On Self-Organizing Systems and Their Environments*, *in* UNDERSTANDING UNDERSTANDING 1, 11 (2003).

[203]Niklas Luhmann, *Self-Organization and Autopoiesis*, *in* EMERGENCE AND EMBODIMENT 143, 143 (Bruce Clarke & Mark B. N. Hansen eds., 2009).

[204]*Id.* at 144.

[205]*See* Heinz von Foerster, *On Constructing a Reality*, *in* UNDERSTANDING UNDERSTANDING 211, 212 (2003) (drawing on the example of the localized blindness in the eye being a result of the absence of photo receptors in the disk of the retina, where the eye's fibers converge and form the optic nerve—this partial blindness is a prerequisite of the ability of seeing itself).

[206]Scott, *supra* note 26, at 1373.

[207]*Id.*

[208]HUMBERTO MATURANA & FRANCISCO VARELA, THE TREE OF KNOWLEDGE 245 (1987) (emphasis in original).

II. Second-Order Cybernetics and Jurisprudence

Second-order cybernetics entered legal discourse mainly by way of Niklas Luhmann's systems theory and its vocabulary.

In his obituary for Niklas Luhmann, Friedrich Kittler remarked that "an offshoot of computer science (diluted by the Pentagon for security reasons) degenerated into Wiener's cybernetics" and that this cybernetics in turn "fell prey to sociologists, anthropologists, and biologists, until a legacy of the legacy of hardware yet became philosophy"—that is, Luhmann's philosophy of systems.[209] Indeed, Luhmann's systems theory rests on the epistemology of second-order cybernetics.[210] It represents "a grandiose concretion" of the "translation of the increasingly cybernetic aspect of all domains of being into a new, theoretically advanced semantic register."[211]

Luhmann's systems theory rests on the assumption that society is functionally differentiated. Consequently, in lieu of hierarchic structures of order, Luhmann posits functional structures. These structures form "systems" that develop their own logic, rationality, and types of communication specific to their respective function. For Luhmann, the law is such a system, functioning along the binary code of legal and illegal.[212] Due to their specific functions, systems are not part of a unitary whole, but autonomous. Luhmann calls this autonomy "autopoiesis," a term developed by the biologists Maturana and Varela with second-order cybernetics as a basis.[213]

Crucially for jurisprudence, Luhmann turned the *epistemological* gaze of second-order cybernetics towards law. On the most fundamental level, he focused second-order observation on the law itself, remarking that there is a "cybernetic circle in which the law observes itself at the level of secondary observations."[214] Through this mechanism, the law gains its code and thus its *eigen*-rationality.[215]

For Luhmann, the law is "a regulatory mechanism, serving the adaption of society to its environment."[216] He goes on to say that the law "does this, however, in a secondary position, as society itself always achieves its own adaptation to its environment . . . . The law can then be seen outright as a cybernetic machine in a cybernetic machine, which is programmed to maintain a steady state."[217] This allows Luhmann to repeatedly invoke second-order cybernetics in the development of his legal theory. The fields of application range from the relation between legislation and judiciary[218] to a theory of legal-decision-making[219] to a concept of judicial argumentation.[220]

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[209]Naturally, the doyen of German media theory deemed the original cybernetics not to be attuned enough to the significance of the medium. *See* Friedrich Kittler, *Niklas Luhmann, in* UNSTERBLICHE 93, 97 (2004).

[210]*See* Pias, *supra* note 18, at 24 ("[it is] the result of a division of labor between those who construct systems and those who describe them—as a product of the separation between functioning for the sake of description and the description of functioning, though each is based on the same epistemological foundation.").

[211]Hörl, *supra* note 192, at 95.

[212]NIKLAS LUHMANN, LAW AS A SOCIAL SYSTEM 101–09 (2004).

[213]*See generally* HUMBERTO MATURANA & FRANCISCO VARELA, AUTOPOIESIS AND COGNITION (1979).

[214]Luhmann, *supra* note 212, at 278.

[215]Like law, politics is a system—however, this equivalency has significant consequences for the conception of the relationship between law and politics. With law being an autonomous world of its own and the same being the case for politics, the latter loses its control over the former. In Luhmann's conception, politics and law, whilst connected,—Luhmann refers to this connection as a "structural coupling"—are different worlds.

[216]Luhmann, *supra* note 212, at 465.

[217]*Id.*

[218]*Id.* at 278 (conceiving the relation between legislation and judiciary as "a kind of cybernetic circle in which the law observes itself at the level of secondary observations.").

[219]Luhmann grounds his theory on the earlier works of von Foerster. *See id.* at 282 (citing Heinz von Foerster, *Ethics and Second-Order Cybernetics, in* UNDERSTANDING UNDERSTANDING 287, 293 (2003) ("[o]nly those questions that are in principle undecidable, *we* can decide.") (emphasis in original).

[220]*See* Luhmann, *supra* note 212, at 314 (theorizing that judicial argumentation in courts promotes "the amplification in the cybernetical sense of positive feedback loops.").

Subsequently, a fruitful discussion arose between Luhmann and his contemporaries within legal science. Innovative legal theorists such as Gunther Teubner[221] and Karl-Heinz Ladeur[222] developed Luhmann's impulses and placed them firmly within legal discourse.[223] In this way, the vocabulary of second-order cybernetics became part of German jurisprudence.[224]

Ladeur in particular transformed Luhmann's systems theory of law into a postmodern legal theory.[225] He emphasizes that the ubiquitous epistemic uncertainty of postmodernity should motivate the legal order to introduce "new reflexive moments of design, of modelling of self-revision and of monitoring."[226] "Knowledge 'gaps' cannot be filled, but they are an unavoidable element of the new experimental logic."[227] In what Ladeur calls "social epistemology," a "more open conception of modelling, designing and experimenting, which makes decision-making more process-oriented, more flexible and more reflexive" is constructed.[228]

Law's function is viewed as that of guaranteeing the internal functionalities of societal pluralisms. "There is no room for 'steering' technologies, but only for introducing reflexive elements into open processes of self-organization."[229] As a result, "the idea of the best decision no longer exists, only that of a satisfying decision" protecting the internal functioning of each societal sub-order.[230]

Significantly, Luhmann did not adapt the—somewhat—prescriptive ethical point of view of cybernetics. Consequently, the turn of second-order cybernetics towards ethics remains to be fully appreciated by legal theory.[231] I will illustrate this by using the example of techno-policing and racial discrimination.

III. Cybernet(h)ic Police Law

Many still dream of Herold's techno-utopia today.[232] Our contemporary intellectual framework has been profoundly shaped by cybernetics—to an extent that some claim "it has deeply permeated the fabric of knowledge,"[233] perhaps even "turned into our epoch's imaginary

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[221]*See generally* GUNTHER TEUBNER, LAW AS AN AUTOPOIETIC SYSTEM (1993).

[222]*See generally* KARL-HEINZ LADEUR, POSTMODERNE RECHTSTHEORIE (1995).

[223]*See, e.g.*, Luhmann, *supra* note 212, at 154 n. 26, 166 n. 44, 261, 309 n. 15, 310 n. 18, 355, 411 n. 88, 454, 455 n. 95, 467 n. 14, 470 n. 19 (referring to Ladeur); Luhmann, *supra* note 212, at vii n. 3, 59 n. 18, 83 n. 17, 89 n. 29, 95 n. 41, 102 n. 58, 135 n. 145, 165 n. 43, 184 n. 29, 219 n. 31, 230 n. 1, 293 n. 52, 294 n. 53, 310 n. 16, 335 n. 101, 390 n. 29, 424 n. 1, 429 n. 15, 469 n. 17 (referring to Teubner).

[224]Thomas Vesting, *Die Bedeutung von Information und Kommunikation für die verwaltungsrechtliche Systembildung, in* GRUNDLAGEN DES VERWALTUNGSRECHTS, BAND II 1, 13–16 (Wolfgang Hoffmann-Riem, Eberhard Schmidt-Aßmann & Andreas Voßkuhle eds., 2012) (charting the significance of cybernetics for the way jurisprudence conceptualizes information and communication). It is one of the few studies to explicitly address cybernetics' influence on German legal thought.

[225]*See generally* Ladeur, *supra* note 222; Ladeur, *supra* note 73. For an illustration of Ladeur's central contributions to jurisprudence, see Ino Augsberg, Lars Viellechner & Peer Zumbansen, *A Tribute to Karl-Heinz Ladeur*, 10 GERMAN L.J. 305 (2009); *see also* INO AUGSBERG, TOBIAS GOSTOMZYK & LARS VIELLECHNER, DENKEN IN NETZWERKEN (2009).

[226]Ladeur, *supra* note 73, at 99.

[227]*Id.*

[228]Ladeur, *supra* note 73, at 87.

[229]*Id.* at 105; *see also* Teubner, *supra* note 221 (advancing the concept of "reflexive law").

[230]Ladeur, *supra* note 73, at 99.

[231]In the discourse around a systems theory of law, productive discussions necessarily reflected Luhmann's one-sided adaption of second-order cybernetics—they theorized and developed the epistemological consequences of second-order cybernetics for law by way of Luhmann's systems theory. That is not meant as a critique. The discussion of Luhmann's epistemology was in itself a major achievement for legal theory and an avant-gardist enterprise for those legal theorists who undertook it in regard to the legal mainstream of their era. Additionally, modern law does not easily lend itself to ethical reflections. *See* Christian Becker, *Die normativ verweiste Gemeinschaft*, 27 JAHRBUCH FÜR RECHT UND ETHIK 39 (2019).

[232]*See supra* D.III.

[233]Robert Feustel, *Eine andere Ordnung der Dinge?*, 1 LE FOUCALDIEN 1, 2 (2015).

standpoint."[234] Those who put their hopes in cyber-policing can easily formulate their visions in the terms of our age.[235]

The contemporary discourse around so-called predictive policing is an illustrative example of our continuing Heroldian cybernetic imaginary. It speaks of extracting patterns from past behavior by harnessing large amounts of data and identifies crime risks in order to prevent or reduce them.[236] It promises advancements in techno-policing on a new scale, particularly the "holy grail of policing," completely "preventing crime before it happens."[237] Nowadays, institutions like the BKA are transformed into multifunctional intelligence agencies whose conception of prevention penetrates deeply into the preliminary stages of potential crimes.

At the same time, much like Herold did, many still imagine techno-policing as liberating policing "from human biases or inefficiencies."[238] There are some who place great hopes in the ability of such advances to deal with racial discrimination in particular.[239] They believe that techno-policing will "reduce racialized policing" if applied correctly.[240] Significantly, they argue in favor of an *increase* of policing throughout every sphere of society, advocating for "*more* public surveillance cameras,"[241] for "facial recognition technology," and for application of "Big Data."[242] As they put it, "cameras and terahertz scanners do not have implicit biases. Nor do they suffer from unconscious racism."[243] In effect, "everyone would be subjected to the same soft surveillance."[244]

Others remain skeptical. They stress the dangers of limitless technological surveillance, arguing that "unconstrained surveillance … threatens to a cognitive revolution that cuts at the core of the freedom of the mind that our political institutions presuppose"[245] and that predictive policing "results in increasingly disproportionate policing of historically over-policed [minority] communities."[246] They view techno-policing as providing a veneer of legitimacy over the same discriminatory policies, arguing that "although predictive policing is reproducing and magnifying the same biases the police have historically held, filtering this decision-making process through sophisticated software that few people understand lends unwarranted legitimacy to biased policing strategies."[247] As the director of the ACLU's Criminal Law Reform project recently put it,

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[234]Hörl, *supra* note 192, at 95 (citing HANS BLUMENBERG, THE GENESIS OF THE COPERNICAN WORLD 43 (1987)); Grizelj, *supra* note 193, at 112 (calling cybernetics a "specter" haunting the sciences).

[235]*See* Timo Rademacher, *Artificial Intelligence and Law Enforcement*, in REGULATING ARTIFICIAL INTELLIGENCE 225, 226 (Thomas Wischmeyer & Timo Rademacher eds., 2020) ("police forces and other law enforcement agencies all around the world are trying to enhance their visual capacities, hearing abilities, senses of smell, and their memories by means of AI and big data technologies.").

[236]Jessica Saunders, Priscillia Hunt, & John S. Hollywood, *Predictions Put into Practice*, 12 J. EXPERIMENTAL CRIMINOLOGY 347, 348 (2016). *See also* Timo Rademacher, *Predictive Policing im deutschen Polizeirecht*, 142 AöR 366 (2017) (considering this evolution in a German and European context); Rademacher, *supra* note 235, at 243 (same); Christian Ernst, *Artifical Intelligence and Autonomy*, in REGULATING ARTIFICIAL INTELLIGENCE 53 (Thomas Wischmeyer & Timo Rademacher eds., 2020); Thomas Wischmeyer, *Predictive Policing*, in DER TERRORIST ALS FEIND?, 193 (Andreas Kulick & Michael Goldhammer eds., 2020).

[237]Andrew G. Ferguson, *Policing Predictive Policing*, 94 WASH. U.L. REV. 1109, 1112 (2017).

[238]*Id.* at 1114.

[239]*See* Alexander Tischbirek, *Artificial Intelligence and Discrimination*, in REGULATING ARTIFICIAL INTELLIGENCE, 103 (Thomas Wischmeyer & Timo Rademacher eds., 2020) (considering techno-policing and its possible effects on discriminatory practices). *See also* MICHAEL GRÜNBERGER, ANNA KATHARINA MANGOLD, NORA MARKARD, MEHRDAD PAYANDEH, EMANUEL VAHID TOWFIGH, DIVERSITÄT IN RECHTSWISSENSCHAFT UND RECHTSPRAXIS (2021) (considering the broader subject of race and German law); DORIS LIEBSCHER, RASSE IM RECHT—RECHT GEGEN RASSISMUS (2021) (same).

[240]Capers, *supra* note 14, at 1246.

[241]*Id.* at 1271 (emphasis in original).

[242]*Id.* at 1273.

[243]*Id.* at 1276.

[244]*Id.* at 1281.

[245]Neil M. Richards, *The Dangers of Surveillance*, 126 HARV. L. REV. 1934, 1964 (2013) (presenting a well-balanced view in sum).

[246]Kristian Lum & William Isaac, *To Predict and Serve?*, 13 SIGNIFICANCE 14, 19 (2016).

[247]*Id.*

predictive policing would constitute the "tech-washing of racially discriminatory law-enforcement practices."[248] The trajectory of modern security law seems to lend credence to these fears.

The primary *legal* safeguard against these threats is constitutional law. However, the question of constitutional law's efficacy in doing so remains open. Yet, courts on the European and national level are struggling to "update their respective constitutional frameworks to accommodate smart law enforcement technologies with established concepts of individual rights."[249] Furthermore, constitutional jurisprudence is a malleable process, particularly when confronted with new technological developments. In such cases, constitutional law opens itself up to a supplementation on the level of legal theory.

Consequently, merely referring to constitutional guards against the delimitation of data-based policing will not be sufficient. Rather, a more fundamental perspective of legal *theory* might be needed to supplement the constitutional point of view.

I argue that second-order cybernetics might be particularly suited to this task. Why draw specifically on second-order cybernetics? As established above, cybernetics still informs "how we talk, think, and act on our digital present and future, from the utopian visions invoked by the terms *information age* and *cyberspace* to the dystopian visions associated with enemy *cyborgs* and *cyber warfare*."[250] Its traces "permeate the sciences, technology, and culture of our daily lives."[251] Additionally, through Luhmann and his interlocutors in the world of jurisprudence, second-order cybernetics' vocabulary entered the legal world. Hence, it is particularly suited for addressing convergences of law and technology such as technological policing.[252]

Rather, we should look to reinvigorate cybernetics' humanistic potentials. On an *epistemic* level, such reinvigoration would emphasize that technological modelling approaches and legal operations both construct *their own realities*. We should not confuse the map for the territory.[253] Neither law nor technology correspond to a given, preexisting reality.

The law creates its own realities.[254] In doing so, it must set "boundaries between what counts as real and what has to be regarded as unreal."[255] Its mechanisms "exclude those aspects of reality that do not fit its schemes."[256] *Quod non est in actis non est in mundo*.[257] At the same time, it employs operations such as legal fictions that assert normative validity precisely by consciously breaking with reality.[258] Facts and norms "are not as clearly separated as the established mode of self-observation of the legal system maintains."[259]

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[248]Ezekiel Edwards, *Predictive Policing Software Is More Accurate at Predicting Policing Than Predicting Crime*, Am. Civ. Liberties Union (Aug. 13, 2016, 12:15 PM), https://www.aclu.org/blog/criminal-law-reform/reforming-police/predictive-policing-software-more-accurate-predicting.

[249]Rademacher, *supra* note 235, at 241; *see also* Hans-Heinrich Trute & Simone Kuhlmann, *Predictive Policing als Formen polizeilicher Wissensgenerierung*, 4 Zeitschrift für das Gesamte Sicherheitsrecht 103, 107 (2021); Matthias Bäcker, *supra* note 172, at 127–29; Wolf-Rüdiger Schenke, Kurt Graulich & Josef Ruthig, *supra* note 180, at 22–25.

[250]Kline, *supra* note 22, at 4.

[251]*Id.*

[252]The premise of my conception here is the belief that there is no single method that allows us to address every theoretical or practical question. Rather, each object we take into view brings with itself its own set of questions, leading to the employment of a patchwork of theories. *See* Ino Augsberg, Die Lesbarkeit des Rechts 25 (2009) (describing the benefits of such a syncretistic approach for jurisprudence).

[253]See the famous one-paragraph short-story by Jorge Luis Borges, *On Exactitude in Science*, *in* Collected Fictions, 325 (1998).

[254]*See* Gunther Teubner, "*And God Laughed . . .*", 12 German L.J. 376, 392–393 (2011).

[255]Ino Augsberg, *Some Realism About New Legal Realism*, 28 Leiden J. Int'l L. 457, 466 (2015).

[256]Ino Augsberg, *The Normality of Normativity*, *in* Vienna Lectures on Legal Philosophy, Vol. 2, 1, 8 (Christoph Bezemek, Michael Potacs & Alexander Somek eds., 2020).

[257]*See generally* Cornelia Vismann, Akten: Medientechnik und Recht (2001).

[258]*See* Hans Kelsen, *Zur Theorie der juristischen Fiktionen*, *in* Werke, Band 4: Veröffentlichte Schriften 1918–1920, 209 (Matthias Jestaedt ed., 2013); Yan Thomas, *Fictio legis*, 21 Droits 17 (1995).

[259]Ladeur, *supra* note 73, at 87.

This "epistemic independence"[260] of law leads to a paradox. First, in a normative operation in the strongest sense of the term, the law "imagines a situation which does not (yet) correspond to the normal state of society,"[261] marking a deviation between Is and Ought. Then, however, law "imagines that this correspondence between normality and normativity already exists." Consequently, "normativity, as a notion referring to a certain desired state of affairs, is a process of *representation without the represented*. It is a process simultaneously demonstrating and dissimulating its own inscrutability."[262]

Technology creates its own realities.[263] Modelling and predictions give rise to virtual universes. Beyond simply reproducing those biases that are already present in the minds of those who construct the models, an entire reality of big data is computed in an "ecstasy of communication."[264] "The ambiguous and enigmatic real is eradicated and superseded by the copy and the clone."[265] This hyperreality has the potential to monopolize "all the other worlds" and to totalize "the real by evacuating any imaginary alternative … with the virtual, we enter not only upon the era of the liquidation of the real and the referential, but that of the extermination of the other."[266]

Thus, the perspective changes. The question should not be how law can best correspond to reality, but rather in what ways legal and technological constructions of realities are adaptable both in a mutually beneficial as well as in a potentially dangerous, self-reinforcing way. Consequently, we would neither lament the "law's state under information-technological conditions,"[267] nor antagonize policing and technology as such. Supplementing the epistemic perspective with an *ethical* one might lead to further insight. Naturally, this would not be ethics that posit immutable "objective" moral guidelines. Rather, it would be ethics informed by second-order cybernetics—ethics of alterity for law.

Second-order cybernetic ethics is fundamentally based on "other people's humanity."[268] As von Glasersfeld put it, it arises from its observer-dependent epistemology. Its "concern for others can be grounded in the individual subject's *need* for other people in order to establish an intersubjective viability of ways of thinking and acting. Others have to be considered because they are irreplaceable in the construction of a more solid experiential reality."[269] This insight into the ethical dimension of constructing realities allows us to reformulate the issue of techno-policing as a loss of *alterity*. If (wo-)man is erased, "like a face drawn in the sand at the edge of the sea,"[270] inhumanity threatens to take the place of humanity. Against this drive towards an almost Nietzschean pathos of distance between the law and its subjects, the responsibility towards the *other* needs to be reaffirmed.

This ethics should not be set against law, but rather transmitted towards law.[271] The unbearableness of law's responsibility would not be viewed as a deficiency. On the contrary, the promise

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[260]Augsberg, *supra* note 255, at 8.

[261]*Id.* at 10.

[262]*Id.* (emphasis added).

[263]Compare this with the well-known aphorism among statisticians: "All models are wrong." In a more serious vein, *see* Nate Breznau et al., *Observing Many Researchers Using the Same Data and Hypothesis Reveals a Hidden Universe of Uncertainty*, METAARXIV PREPRINTS (Mar. 24, 2021), osf.io/preprints/metaarxiv/cd5j9 (a recent study examining decisions made among 73 research teams as they independently conducted studies on the same hypothesis with identical starting data that lead them to strikingly different outcomes.)

[264]The term is taken from JACQUES BAUDRILLARD,THE ECSTASY OF COMMUNICATION (1988).

[265]Jon Baldwin, '*Self-Immolation by Technology*', *in* THE PALGRAVE HANDBOOK OF POSTHUMANISM IN FILM AND TELEVISION, 19, 20 (Michael Hauskeller, Thomas D. Philbeck, & Curtis D. Carbonell eds., 2015).

[266]*Id.* at 21.

[267]This warning of unfruitful lamentation is taken from Vaios Karavas, *The Force of Code*, 10 GERMAN L.J. 463, 478 (2009).

[268]ERNST VON GLASERSFELD, RADICAL CONSTRUCTIVISM 127 (1995).

[269]*Id.* (emphasis in original).

[270]MICHEL FOUCAULT, LES MOTS ET LES CHOSES 398 (1966).

[271]*See* Becker, *supra* note 231, at 41 (emphasizing the particular eschatology of liberal democracies and their dependance on a paradoxical eternal deferment of the arrival of absolute morality).

of law misses "its own performative objective with structurally determined inevitability."[272] In the face of the infinitely demanding demand of alterity,[273] we would never let the law reach "the ostensible equilibrium of congruence."[274] Instead, the law would operate in a status of permanent stable instability,[275] perpetually falling short of itself, yet never stopping, denying the law any utopian stasis. The stasis produced by supposedly perfect juridico-technical systems threatens this fundamental promise of legal ethics.

Particularly for the question of racial discrimination, techno-policing threatens to replace the multiplicity of the individual with hypostasized collective characteristics such as "race." It would transform what is merely a name for a social construct into an unchanging fact of being. Instead, "[a]ny anti-racist discourse … must strive not to naturalize/ontologize race and race-thinking and thereby perpetuate that which it seeks to contest."[276] Doing justice to another human being should entail shielding them from being reduced to a mere numerical element. On an operational level, this would mean halting both the depersonalization of technologized administrative decision-making and the increasing juridification of data itself at a certain point.

Whilst both law and technological models might gather knowledge and conceive ever more detailed imaginaries of their realities, this ersatz-knowledge is not *the real thing*, insofar as the real thing is inaccessible—there is no unitary perspective, no Archimedean point. Instead, the blind spots and specific observatory consequences of a specific perspective become the focal point of discourse. This could ultimately lead to another paradigm shift in police law that might also be put in the terms of cybernetics—in this case, second-order cybernetics. The shift would once again transform our understanding of knowledge, accepting that paradoxically, gathering knowledge and conceiving ever more precise cybernetic models of criminality does not allow us to attain all-encompassing knowledge. As a result, administrative law would no longer view uncertainty or a lack of knowledge from a standpoint of deficiency. Rather, it would concentrate on the procedural means to deal with the state of uncertainty and free itself of the utopian drive towards homeostasis.

F. Conclusion

In Campanella's *City of the Sun*, its inhabitants, the Solarians bestow surnames on eminent citizens. "It is not mere chance that determines the name of a person," but rather it is assigned "according to some characteristic."[277] Herold's appellation as "*Kommissar Computer*" might be read as such an awarded name. Of course, that appellation was pejorative, and Herold ultimately felt himself to be a failure after the assassinations of 1977—he could have legitimately refused an appellation that wholly identified him with the shortcomings of his technological apparatus. Perhaps a more fitting view that follows the Solarian naming tradition would consider Herold's actual surname. Herold *heralded* the dawning of the digital age—he was a predecessor, not the one to enact the changes of the new epoch, but the one to proclaim them and announce them to the world. Technology has become "our epoch's imaginary standpoint."[278] Cybernetics does not merely inform us about "scientific, technical, social, and cultural turns of the post-war era." Rather, it remains an "imaginary point" that continues to produce novel

[272]Ino Augsberg, *Promise as Premise, in* Sociology of Constitutions, 49 (Alberto Febbrajo & Giancarlo Corsi eds., 2016).

[273]*See* Simon Critchley, Infinitely Demanding (2013).

[274]Augsberg, *supra* note 272, at 49.

[275]*See* Christian Becker & Amadou K. Sow, *Eppur si muove, in* Kafka, 235, 242 (Günther Ortmann & Marianne Schuller eds., 2019).

[276]Zahi Zalloua, Žižek on Race 7 (2020).

[277]Tommaso Campanella, La Città del Sole/The City of the Sun 59 (Daniel J. Donno, trans., 1981) ("*Li nomi loro non si mettono a caso, ma dal Metafisico, secondo la proprietà, come usavan li Romani*.").

[278]Hörl, *supra* note 192, at 95.

and relevant effects,[279] including for the world of law. It is up to us to decide how to deal with it.

For all of Herold's faults, his hopes of a democratic and just policing remain significant. As Herold tragically stated towards the end of his tenure in 1979:

> One has to create a liveable [*lebenswert*] state. A citizens' state—a transparent state. And that you can only render transparent in a technical manner. Yes, of course that is a City of the Sun, but one that is feasible today. Here, within the police, it's feasible. I don't know why one does not want to understand that—or am I barking up the wrong tree? (*oder bin ich da auf einem ganz falschen Dampfer*?)[280]

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[279]Hörl & Hagner, *supra* note 17, at 7–8.
[280]Cobler, *supra* note 8, at 40.