Critical infrastructure and crisis-affected actor? Investigating the double role of municipal administrations

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ABSTRACT

This WiP article presents first insights from two German research projects (one ongoing, one completed) on the double role of municipal administrations in crisis management. The ongoing project examines the municipal crisis management during COVID-19, the completed one focused on the 2015/2016 refugee situation in Germany.

While crisis management has previously rather been associated with "blue-light organizations", these two circumstances rather called for a predominantly administrative crisis management. While adapting to this new role, administrations had to maintain key public services: They had to perform as crisis managers while maintaining their function as a critical infrastructure despite being affected themselves for several reasons.

Since 2015, public administration in Germany has found itself in almost constant crisis management mode, giving opportunity to learn and to adjust self-perception.

Based on empirical analyses of interview data we aim to discuss the following questions: How did the two roles influence each other in the situations mentioned? Has anything changed between these situations?

Keywords: Public administration, crisis management, critical infrastructure, empirical research, social science

INTRODUCTION – GERMAN PUBLIC ADMINISTRATION IN PERMANENT CRISIS MANAGEMENT MODE

Public administrations extend across all subsystems of society. Their tasks and functions include internal security and order, education and culture, health care or energy, for example. This is nothing surprising, but rather – at least in Germany – something taken for granted. Exceptions are situations in which the "mills of administration" are challenged in an exceptional way, sometimes even pushed to their limits. This refers in particular to extreme events, the management of which is the primary responsibility of public administrations, i.e. crises. In recent years, public administrations in Germany had to deal with such unexpected crises – leaving little to no time for preparation, planning or preventive action. Simultaneously, administrations are under enormous pressure to "manage" these "ad hoc situations" as effectively as possible. Examples include the refugee situation in 2015/2016 and the COVID-19 pandemic starting in 2020. Although these scenarios were not entirely unexpected, their sudden severity hit stakeholders in unforeseen ways. One challenge was posed by the federal system, which regulates crisis management responsibilities at different levels in Germany (see figure 1). The Federal government is active in damage situations of national significance, wars, conflicts (civil protection), and disaster relief at home and abroad. The *Länder* or states are active in local and regional major emergencies. By law, they are the upper disaster control and civil protection authorities. The district governments (as a bridge between upper and lower authorities) are the middle disaster control and civil protection authorities. The municipalities are involved in everyday incidents, rescue services, fire protection and technical assistance. They are the lower disaster control and civil protection authorities.
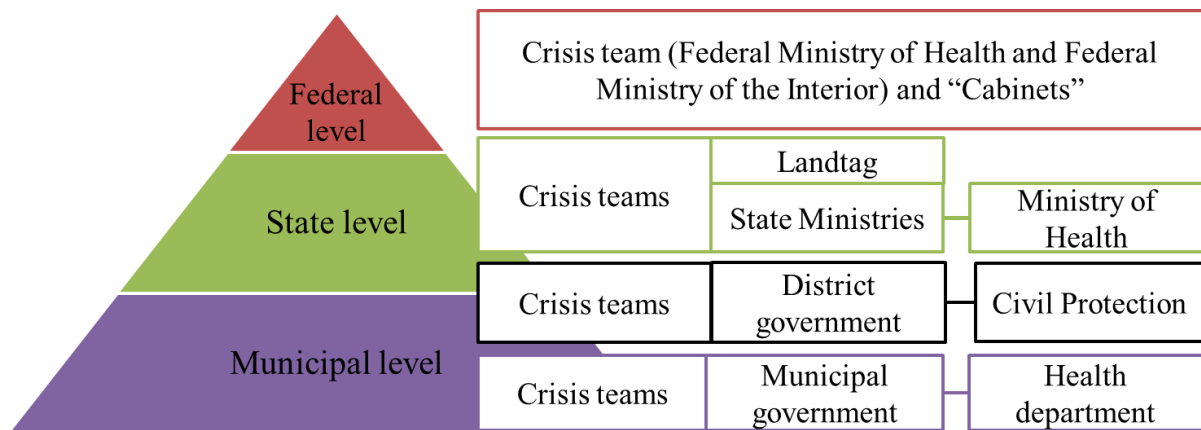
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Figure 1: Crisis Management in Germany on different levels using the example of a pandemic; own figure based on Geier 2017; Klinger et al. 2022

During the refugee movements in 2015/2016 and the COVID-19 pandemic, there was a coordination team at the federal level in each case, which regularly brought all the main actors involved "to the table". Nevertheless, the main responsibility for managing the situation laid with the federal states. The local governments or municipalities found themselves in a kind of "sandwich position" between the state administrations and the citizens. They received new instructions (e.g. for the establishment of reception facilities, daily changing corona regulations) and information (e.g. numbers of refugees, corona case numbers) from the state administrations on a daily basis and had to implement or communicate these to the citizens as quickly as possible. This short-termism of information flows and action requirements came up against classic bureaucratic principles such as the need to keep (written) records, a pronounced rule-bound nature, the requirement to adhere to so-called official channels, etc. as well as structures, which sometimes led to restrictions on action and protracted processes (Schulte et al., 2022).

Both the refugee movements in 2015/2016 and the COVID-19 pandemic put public administrations on state and municipal level under pressure. They had to make critical decisions under dynamic and uncertain circumstances (Rosenthal et al., 1989). In other terms, they found themselves in a permanent crisis (management) mode, which they had never experienced in this way before. In this context, public administrations differ from "classic" organizations representing disaster and crisis management (authorities and organizations with security tasks (AOS)), such as the police, fire departments, rescue and emergency services. While the latter are experienced in disaster and crisis management as it is already part of their training and put into practice regularly (almost day-to-day), many parts of the administration do not even perceive themselves as part of crisis management (Schulte et al. 2022). This may be because while local crisis management in Germany traditionally distinguishes between administrative and operational-tactical crisis management teams, the latter are usually the primary focus (Ausschuss für Feuerwehrangelegenheiten, Katastrophenschutz und zivile Verteidigung, 1999). The operational-tactical staff consists of representatives of AOS. They are among the established players in the field and are recognized as "crisis managers". In crises – often far less clearly regulated by law than in disaster situations – AOS are definitely important players. In the foreground and in positions of responsibility, however, are public administrations at all levels. At the federal, state, and local levels, appropriate coordination and crisis management teams are ramped up in crises to work with all levels to find appropriate solutions to difficult situations (Bundesministerium des Innern, 2015). In the few disasters that Germany – fortunately – has had to deal with, the AOS were nevertheless mostly the focus of attention. Public administrations and especially local governments received relatively little attention, despite their importance in local emergency management.

The mentioned crisis phenomena changed this massively and put various parts of public administrations under special attention as these phenomena were not primarily calling for an AOS response. These situations revealed the double role of German public administrations in general and municipalities in particular as a crisis manager or "administrator", but also as a critical infrastructure itself. A central thesis of this paper is therefore that both roles influence each other. This paper addresses this assumption and discusses the questions: How did the two roles influence each other in the refugee situation 2015/2016 and in the COVID-19 pandemic? Has anything changed between these situations? Our contribution is based on two domestic research projects, taking into special consideration the crisis management of public (municipal) administrations in relation to the phenomena mentioned. For answering the question and discussing the assumption, this paper draws on data from expert interviews with representatives from public administrations (state and municipal administration) who were part of the respective crisis management team during the refugee situation and or during the pandemic.

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SCIENTIFIC VIEWS ON PUBLIC ADMINISTRATION DURING CRISES AND RESEARCH GAPS

Recent administrative science overviews on public administrations in Germany include the topic "crisis-associated challenges" for German administrations and sometimes discuss potential changes and reforms resulting from them, but crisis management of local administrations, crisis management staffs or crisis communication of local administrations are not even mentioned (e.g. Bauer & Grande, 2018; Bogumil & Jann, 2020; Ziekow, 2018). Hustedt (2019) argues that "disasters and manifest crises are rarely studied in administrative science" (ibid., 183), although political and administrative organizations play a central role in such situations. Reasons for that are seen in a focus on controlling "normal situations" (Schuppan & Köhl, 2016, 115) and a lack of sensitivity for the topic of administrative crisis management. This is justified by the observation that administrations seemed to be reasonably successful in crisis management in past situations (ibid., 2016, 124). In the field of security (and safety) research, various disciplines address topics like crisis management. There are several publications on crisis management staffs in the economic, social, security and safety engineering sciences. However, the focus is usually on the classic AOS in the context of crisis and disaster management, as well as private sector organizations, like critical infrastructure providers, and the operational-tactical side. The administrative staff has thereby received unsatisfactory scientific attention so far (among others, Gahlen & Kranaster, 2019; Gißler, 2019; Hofinger & Heimann, 2016; Kapucu, 2016).

Crisis management of public administrations in general and of local governments in particular are rarely researched topics in recent years and in comparison to AOS or companies. Perceptions of (local) public administration could most likely be assigned to research fields of procedural justice, legitimacy and normative compliance, which have their roots in classical social science approaches concerning social order (Hough et al., 2013). Main thoughts of such studies (often based on Tyler, 1990; 2006) are transferable to local administrations. The assumption that "legitimacy of authorities, (…), is paramount for ensuring their ability to work effectively" and that "legitimacy is important because it promotes voluntary respect and cooperation from citizens" (Bates et al., 2015, 445) as well as a high probability that laws will be obeyed (Bradford et al., 2014; Tyler, e.g. 1990; 2006; 2011) are relevant in terms of local government actions, probably in particular, when they are acting in context of critical events and crises. However, local governments are usually not part of such research. A huge part of recent studies concentrates on legitimacy and procedural justice of police organizations (e.g. Antrobus et al., 2015; Bates et al., 2015; Bradford et al., 2015; Mazerolle et al., 2014; Pryce & Wilson, 2020).

Research on public administration with a focus on "refugee management" which developed gradually after 2016, indicated difficulties in coping with the situation at different levels of public administration. Some (scientific) articles mention "failure of authorities", "deficits in fragmented federal administrative enforcement" (Bogumil et al., 2016, 126), "management failure" (Schuppan & Köhl, 2016, 117) or "administrative crisis" (Frommer et al., 2020, 255). Empirical data from diverse research projects shows that the federal system produced a diversity of measures, different municipal logics and concepts. The research project "SECURITY COOPERATION AND MIGRATION (SiKoMi)"[1] explored the role of public administrations during the refugee situation in 2015/2016 (Schütte et al., 2022). Results from expert interviews with public administration staff (state and municipal level) show that usually they do not describe themselves explicitly as crisis managers or their organization as a central part of crisis management structures. They often emphasize that they are not responsible for such critical situations and that they feel unprepared (self-perception), which they refer to their organization. They describe, for example, that they only set up crisis teams when it was already more than obvious that they were overwhelmed by the situation. From external perspectives, e.g. from police officers or representatives of other emergency organizations, this (self-) perception was often supported: Interviewed representatives from blue-light organizations partly denied that public administrations have characteristics of typical emergency organizations. They sometimes portrayed them as hindering or strongly slowing down structures of "their" crisis management (external perception). Another issue in the interviews was the discussion of usefulness of bureaucratic principles, structures and processes in crises, i.e., to manage crises (see above). In some interviews, these bureaucratic principles are described as barriers, which can lead to restrictions on action, e.g. in terms of ad hoc decisions, quick action (as crisis response) and protracted processes. In addition, the remnants of earlier decisions, e.g., on restructuring, savings and staff reductions, are repeatedly mentioned in this context, which, among other issues, resulted in insufficient resources being available for crisis management (as an additional task). One conclusion from the results is therefore that representatives of public administrations thus first had to recognize, accept and learn their role as crisis managers. Another finding is that traditional bureaucratic structures needed to become more flexible in order to implement both efficient and effective crisis management in dynamic situations. Only in this way would public administrations succeed in acting as crisis managers "at eye level" with the blue-light organizations or AOS (Schulte et al., 2022). In the context of the COVID-19 pandemic, the question arises to what

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extent something has changed in the crisis management of (local) public administrations since the refugee situation in 2015/2016 and whether they have been able to learn lessons that help them under the conditions of crisis caused by a pandemic. Because, local governance in pandemics is far from being trivial. Moon (2020) calls COVID-19 a "wicked policy problem" (Rittel & Webber, 1973) that imposes new challenges on all levels of governance, including the local level – challenges to act with agility, adaptability, and transparency under uncertain circumstances. Mayne et al. (2020) identify this mode of governance as "problem-oriented governance" and localize it as part of a larger 'problem-orientation' turn that has influenced various academic fields, including public administration (van Bueren et al., 2003; Head, 2022; Koppenjan & Klijn, 2004). Wicked problems are of complex nature and "require collective action" (van Bueren et al., 2003, 193). In this regard, effective crisis management requires the ability of a municipal administration to perform in a mode of problem-oriented governance. However, it also requires increased self-awareness as a crisis manager and acceptance of the role.

Taking on the new role brought also other problems to light. For example, during the refugee movements of 2015/2016, the consequences of earlier restructuring and downsizing as well as outdated structures became publicly noticeable when in some places entire offices had to cease their services or even close down temporarily. This resulted in (internal) organizational crises (Schütte et al., 2022). Such restrictions on functionality are problematic as public administrations in Germany are defined as a part of Critical Infrastructures (CI) (State and Administration sector). They "provide frameworks for public order. They guarantee citizens security and fundamental liberties" (BBK, n.d. (a)). In the two enduring crisis situations mentioned above, maintaining one's own ability to function and, at the same time, "managing" the situation to maintain the state's ability to function was at least challenging, sometimes difficult or even temporarily impossible. The following section goes into more detail about this double role.

DOUBLE ROLE OF PUBLIC ADMINISTRATION IN CRISIS MANAGEMENT

In the following, we will take both roles of public administrations in crisis management under consideration. First, we look at the role of (municipal) administrations as CI: The generally accepted definition of CI in Germany is "organizations and facilities of major importance to the public domain, the failure or impairment of which would result in lasting supply bottlenecks, significant disruptions to public safety, or other dramatic consequences." (BBK, n.d. (b)). This certainly applies to local governments which administer services in various vital areas for citizens, e.g. the payment of social welfare, in the area of health protection or registration matters. The task as a CI in this sense is to maintain these processes for the citizen even in crises. This became very clear in the COVID 19 pandemic, when local governments in Germany struggled to ensure their own ability to function. In other words, they had to implement appropriate health protection measures for their employees (e.g., home offices or physical separation of staff) and thus maintain their own ability to function.

If we look in detail at the function of administrations as CI in Germany, we find that the various sectors of CI are, beyond the above mentioned generally accepted definition, precisely defined, containing threshold values for the criticality of facilities and, based on this, the requirements for protective measures (BBK, n.d. (a)). Public Administrations are mentioned in the sector "State and Administration". However, and this is of particular interest, there are no further-reaching obligations, tasks or thresholds for this sector and thus no binding standards to implement for securing the ability to act in times of crises. There will soon be changes in this area, because the European Union is currently renewing its guidelines for CI, which explicitly include the state and administration sector. This means that large parts of all administrative levels in the various European countries fall under the legal definition of CI (Vogel et al., 2023). In general, however, it can also be stated that the focus in the consideration of CI is on vulnerability and here primarily the technical and material aspects and in contrast, "facilities or services that make crises manageable" are not taken into account in Germany (Vogel et al., 2023; Voss, 2021).

The second role of public administrations is that of a crisis manager: Local governments are CI because they perform important functions for the common good. In addition, here the second role of the administrations becomes significant. They manage crises for the affected population, i.e. they take measures to manage the crisis, prevent its further escalation and return it to a situation of normalcy. The challenges that arose during the refugee movent in 2015/16 and the COVID-19 pandemic in the process have already been mentioned above: All areas of the administration were challenged to find solutions in e.g. pandemic management, at the same time they were important contact points for citizens in crises and had to ensure their own ability to act. Not only the refugee situation, but also the COVID-19 pandemic, required flexible redeployment, recruitment and training of personnel. Particularly during the pandemic, staff shortages due to increased sick leave and secondments to organizational units dealing with the crisis had an impact on both crisis management as well as everyday tasks. Furthermore, structurally induced "organizational crises" (such as digitalization gaps) became apparent, especially with regard to the registration of e.g. COVID-19 patients, as well as with regard to the data exchange between the different authorities.

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The double role as crisis manager and, at the same time, as a crisis-affected organization with important tasks for societal functioning goes hand in hand with central challenges, which the research team at the Institute for Public Safety and Emergency Management at the University of Wuppertal already identified in the SiKoMi project mentioned above. In the process, two key findings were made: Local governments perceive themselves neither as crisis managers nor as CI. The lack of legal requirements for CI in the area of public administrations, as well as the lack of (self-)perception as a CI, lead to that local administrations are not well positioned internally for crisis management. Although being a central part of the political-administrative system, public administrations follow different logics than those of operational crisis management (reform imperative vs. crisis management imperative). Boin &'t Hart (2003) argue "that effective crisis management is at odds with effective reform strategies", for example, effective crisis management often means to "bypass routine policy-making procedures to speed up decision making" (Boin & 't Hart, 2003, 550). Additionally, the local and the intermediary actors typically gain relatively low attention (by the public, media, research community etc.) in crises and disasters, compared to their counterparts on the national and federal level (Schneider & Park, 1989; Benton, 2002). This attention does not match with the high importance of local and regional emergency management. In an ongoing second research project, LOCAL GOVERNMENTS IN CRISIS MODE (KoViK)[2], which is funded by the German Research Foundation until the end of 2024, the researchers are now investigating the development of the outlined dual role in the context of the COVID-19 pandemic and are looking for indications of the extent to what has changed in recent years.

THE ONGOING KoViK PROJECT – STRUCTURE, METHODS, AND PROGRESS

In the course of the 36-month duration of the research project, various thematic foci are going to be addressed, which are backed up by corresponding methods (see figure 2). In the first year of the project – 2022 –, emphasis was placed on establishing a sound basis for further surveys. First, different approaches to municipal crisis management were identified. On this basis, comparisons can be drawn between the administrative approaches and the much better studied crisis management concepts of the AOS.

In a second step, we dealt with working through our focal scenario "COVID-19 pandemic": Especially in bureaucratic organizations like administrations, official documents play a prominent role also in crisis management and create realities in legal and process matters. Relevant documents from the COVID-19 pandemic, such as ordinances, organizational charts and others, were identified and analyzed with regard to their content, so that recurring patterns as well as unusual processes could be identified. This was accompanied by a media content analysis on the quality and performance of municipal crisis management – primarily in local newspapers, whose reporting area includes the case study municipalities. The combination of these results from document analysis and media analysis will point to possible (non-)correspondences of approaches that were officially communicated and those that were actually practiced.

The core of the research project consists of case studies in cooperation with municipalities, all of which are located in the German federal state "North Rhine-Westphalia" for reasons of comparability. The focus is on semi-structured interviews with municipal crisis management practitioners. Strategies for dealing with the pandemic situation, room for maneuver and limitations, as well as self-perception as a crisis actor will be collected and analyzed by means of a summarizing qualitative content analysis. The data on internal and external perceptions with regard to (practiced) municipal crisis management and crisis communication enable the identification of urgent fields of action, but also of good practices that have proven to be beneficial. Taken as a whole, the work done will provide a basis for the implementation of conceptual, technical, organizational and social optimization potentials of existing models of crisis management and crisis communication, which can be tested and evaluated by municipal stakeholders in the final third year of the research project, especially, of course, by those who have supported the project through their openness and expertise. Finally, transfer strategies will be developed to open the findings to all interested municipalities before the project ends at the end of 2024.

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[2] KoViK is funded by the German Research Foundation between 2022 and 2024; grant number 458544621; German title "Kommunalverwaltungen im Krisenmodus".
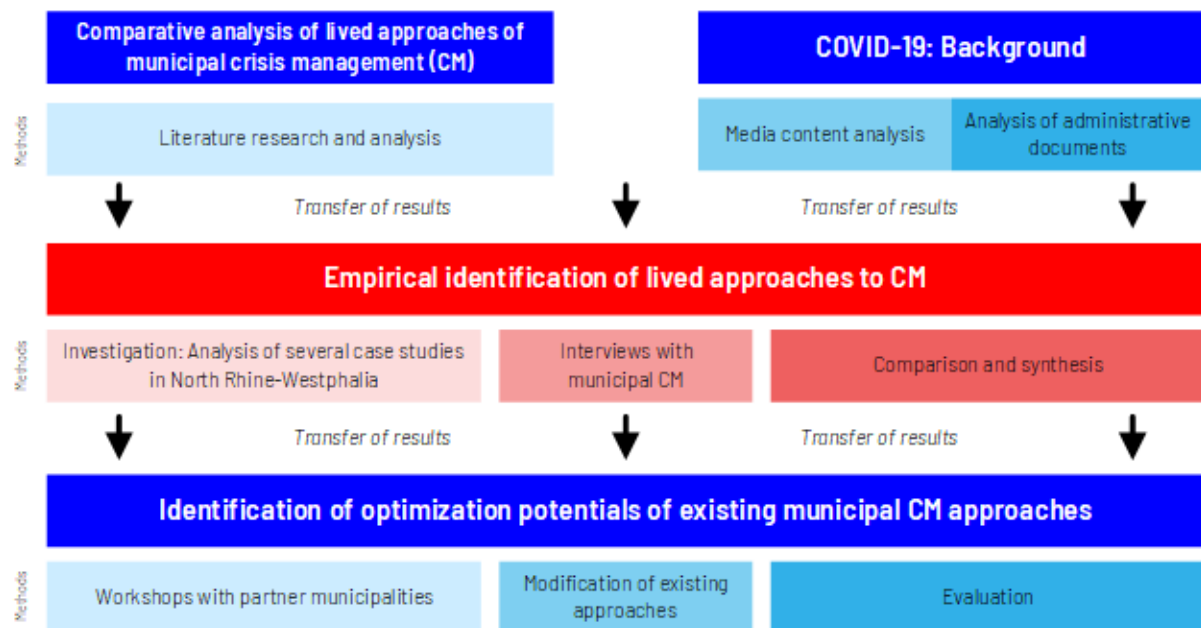
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Figure 2. Work plan of the KoViK research project on municipal crisis management (Source: own illustration)

PRELIMINARY RESULTS

As the empirical phase of the project is currently in full swing, the aim of this WiP contribution is to present first insights from interviews with municipal crisis managers at the ISCRAM conference in order to compare the internal and external organizational realities and aspects of self-perception, contrasting insights of refugee management and COVID-19 management. Besides, the contribution offers possibilities to investigate technical, organizational and social sides of municipal crisis management and communication.

The federal system of Germany is of course a critical factor to consider in crisis management as crises rarely stop at state borders. Each German state handles crisis situations with its own set of laws and institutions. COVID-19 has shown that this results in 16 different approaches and huge efforts for interstate harmonization. Anticipating a scenario where crises become the "new normal", administrative crisis management would become a permanent governance mode for normality, not for exception, calling for discussion whether the status quo is a proper set-up or whether creative changes are necessary.

COVID-19 also revealed what already became apparent in the refugee situation 2015/2016: The German information management during crises appears rather old-fashioned, slow, and incomplete. At the time of COVID-19, there was no update on the development of infections at the weekends. The reason is simple: Public health departments as part of the local administration were closed on Saturday and Sunday. Even when working, official reports about the pandemic situation were transmitted via fax machines. Similar observations could be made during the refugee situation 2015/2016. Germany could benefit from a nationwide and flexible tool for information sharing between administrations of various layers (e.g., for information about resources, capacities etc,).

Both crises show that the role of public administrations as CI in Germany is currently lacking a proper legal framework including indicators that would offer them orientation. Despite being legally defined as a CI, there are no further details elaborated, such as, e.g., prioritization of key public services during crises. Compared to other CI, such as the energy sector or health institutions, this lack of requirements appears remarkable and leaves public administrations somehow lost between their two roles. A solution for this unsolved situation might be on its way when the mentioned directive by the European Union will be implemented into German law.

REFERENCES

Antrobus, E., Bradford, B., Murphy, K. and Sargeant, E. (2015) Community Norms, Procedural Justice, and the Public's Perceptions of Police Legitimacy, *Journal of Contemporary Criminal Justice*, 31, 2, 151–170. doi: 10.1177/1043986214568840.

Ausschuss für Feuerwehrangelegenheiten, Katastrophenschutz und zivile Verteidigung (ed.) (1999) Führung und Leitung im Einsatz: Führungssystem. Feuerwehr-Dienstvorschrift 100 [Command and control in operations: command and control system. Fire department regulation 100].

WiP Paper – Enhancing Protection of Critical Infrastructures
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Bates, L. J., Antrobus, E., Bennett, S. and Martin, P. (2015) Comparing Police and Public Perceptions of a Routine Traffic Encounter, *Police Quarterly*, 18, 4, 442–468. doi: 10.1177/1098611115589290.

Bauer, M. W. and Grande, E. (2018) Perspektiven der Verwaltungswissenschaft (1. ed.) [Perspectives of Public Administration Science], Nomos Verlagsgesellschaft mbH & Co. KG. https://doi.org/10.5771/9783845288567

Benton, J. E. (2002) County Service Delivery: Does Government Structure Matter? *Public Administration Review*, 62, 4, 471–479. doi: 10.1111/0033-3352.00200.

Bogumil, J.and Jann, W. (2020) Verwaltung und Verwaltungswissenschaft in Deutschland: Eine Einführung (3. ed.) [Public Administration and Public Administration Science in Germany]. Grundwissen Politik. Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-28408-4

Bogumil, J., Hafner, J.and Kuhlmann, S. (2016) Verwaltungshandeln in der Flüchtlingskrise [Public Administration during the Refugee Crisis]. *VM Verwaltung und Management*, 22, 3, 126–136. https://www.uni-potsdam.de/fileadmin/projects/ls-kuhlmann/Starseite/Neuigkeiten/Bogumil_Hafner_Kuhlmann_2016_Verwaltungshandeln_in_der_Fl%C3%BCchtlingskrise.pdf

Boin, A. and Hart, P. t' (2003) Public Leadership in Times of Crisis: Mission Impossible? *Public Administration Review*, 63, 5, 544–553.

Bradford, B., Quinton, P., Myhill, A. and Porter, G. (2014) Why do 'the law' comply? Procedural justice, group identification and officer motivation in police organizations. *European Journal of Criminology*, 11, 1, 110–131. doi: 10.1177/1477370813491898.

Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (BBK) (n.d.)a Sektoren und Branchen KRITIS [Sectors and industries CI] [WWW document]. URL

Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (BBK) (n.d.)b Glossar [Glossary] [WWW document]. URL https://www.bbk.bund.de/DE/Infothek/Glossar/_functions/glossar.html?nn=19742&cms_lv2=19756

Bundesministerium des Innern (2015) System des Krisenmanagements in Deutschland [The German Crisis Management System] [WWW document]. URL https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/bevoelkerungsschutz/krisenmanagement-in-deutschland.pdf%3F__blob%3DpublicationFile%26v%3D1

Frommer, J.-A., Schönefeld, M., Schütte, P. M., Werner, A., Epple, G. and Fiedrich, F. (2020) "Die Geschichte lehrt dauernd, aber sie findet keine Schüler" – Ansatzpunkte für ein Lernen der Polizei aus den Flüchtlingsbewegungen 2015/2016 [History constantly teaches but cannot find students – How police can learn from refugee movements 2015/2016]. In H. Groß and P. Schmidt (Eds.), Schriften zur Empirischen Polizeiforschung: Vol. 22. Empirische Polizeiforschung XXIII: Polizei und Migration (pp. 251–271). Verl. für Polizeiwissenschaft.

Gahlen, M. and Kranaster, M. (2019) Krisenmanagement: Planung und Organisation von Krisenstäben (3rd ed.) [Crisis Management: Planning and Organision Crisis Management Staffs]. Handbuch. Kohlhammer.

Geier, W. (2017) Strukturen, Zuständigkeiten, Aufgaben und Akteure [Structures, responsibilities, tasks and actors]. In H. Karutz, W. Geier and T. Mitschke (Eds.) Bevölkerungsschutz. Springer, Berlin, Heidelberg. doi.org/10.1007/978-3-662-44635-5_4

Gißler, D. (2019) Führung und Stabsarbeit trainieren (1st ed.) [How to train leadership and staff work]. Kohlhammer.

Head, B. W. (2022) Wicked Problems in Public Policy, Springer International Publishing, Cham.

Hofinger, G. and Heimann, R. (2016). Handbuch Stabsarbeit: Führungs- und Krisenstäbe in Einsatzorganisationen, Behörden und Unternehmen (1st ed.) [Handbook staff work: Leadership and staff work in emergency organizations, public administration, and companies], Springer.

Hough, M. (2013) Procedural justice and professional policing in times of austerity, *Criminology & Criminal Justice*, 13, 2, 181–197. doi: 10.1177/1748895812466399.

Hustedt, T. (2019) Verwaltung und der Umgang mit Krisen und Katastrophen [Public administration and the handling of crises and disasters]. In S. Veit, C. Reichard, and G. Wewer (Eds.), Handbuch zur Verwaltungsreform (pp. 181–190), Springer. https://doi.org/10.1007/978-3-658-21563-7_17

Kapucu, N. (2016) Interagency Communication Networks During Emergencies, *The American Review of Public Administration*, 36, 2, 207–225. https://doi.org/10.1177/0275074005280605

WiP Paper – Enhancing Protection of Critical Infrastructures
Proceedings of the 20th ISCRAM Conference – Omaha, Nebraska, USA May 2023
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Klinger, I., Heckel, M., Shahda, S., Krisen, U., Stellmacher, S., Kurkowski, S., Junghanß, C. and Ostgathe, C. (2022) COVID-19-Pandemiekrisenstäbe: Organisation, Befugnisse und Herausforderungen – Strukturelle Gegebenheiten verstehen und nutzen [COVID-19 staff work: Organization, entitlements and challenges], *Bundesgesundheitsblatt* 65, 650–657.

Koppenjan, J. and Klijn, E.-H. (2004) Managing Uncertainties in Networks, Routledge.

Mayne, Q., Jong, J. de and Fernandez-Monge, F. (2020) State Capabilities for Problem-Oriented Governance, *Perspectives on Public Management and Governance*, 3, 1, 33–44. doi: 10.1093/ppmgov/gvz023.

Mazerolle, L., Sargeant, E., Cherney, A., Bennett, S., Murphy, K., Antrobus, E. and Martin, P. (2014) Procedural Justice and Legitimacy in Policing, Springer.

Moon, M. J. (2020) Fighting COVID-19 with Agility, Transparency, and Participation: Wicked Policy Problems and New Governance Challenges, *Public Administration Review*, 80 4, 651–656. doi: 10.1111/puar.13214.

Pryce, D. K. and Wilson, G. (2020) Police Procedural Justice, Lawyer Procedural Justice, Judge Procedural Justice, and Satisfaction With the Criminal Justice System: Findings From a Neglected Region of the World, *Criminal Justice Policy Review*, 31, 9, 1286–1311. doi: 10.1177/0887403419900230.

Rittel, H. W. J. and Webber M. M. (1973) Dilemmas in a General Theory of Planning, *Policy Science*, 4, 2, 155–169.

Rosenthal, U., Charles, M. T. and Hart, P. 't (eds.) (1989) Coping with crises: The management of disasters, riots and terrorism, Charles C Thomas Publisher.

Schütte, P.M., Schulte, Y. Schönefeld, M. and Fiedrich, F. (Ed.) (2022) Krisenmanagement am Beispiel der Flüchtlingslage 2015/2016. Akteure, Zusammenarbeit und der Umgang mit Wissen [The refugee situation 2015/2016 as an example for crisis management. Actors, cooperation, and knowledge], Springer.

Schulte, Y., Schütte, P.M., Schönefeld, M. and Fiedrich, F. (2022) Herausforderungen des Krisenmanagements für öffentliche Verwaltungen [Challenges for the crisis management of public administration]. In AA. Karsten and S. Voßschmidt (Eds.): Resilienz und Pandemie. Handlungsempfehlungen anhand von Erfahrungen mit COVID-19, Kohlhammer, pp. 130-137.

Schuppan, T. and Köhl, S. (2016) Krisenmanagement – Herausforderung für das Public Management?! [Crisis management – a challenge for Public Management?!] *Verwaltung & Management*, 22, 3, 115–125. https://doi.org/10.5771/0947-9856-2016-3-115.

Tyler, T. R. (1990) Why people obey the law, Princeton University Press.

Tyler, T. R. (2006) Why people obey the law, Princeton University Press.

Tyler, T. R. (2011) Why people cooperate: The role of social motivations, Princeton University Press.

van Bueren, E. M. (2003) Dealing with Wicked Problems in Networks: Analyzing an Environmental Debate from a Network Perspective, *Journal of Public Administration Research and Theory*, 13, 2, 193–212. doi: 10.1093/jopart/mug017.

Vogel, V. and Ziegler, N. (2023) Kritikalität: Von der BSI-KritisV zur NIS2-Richtlinie, *Int. Cybersecur. Law Rev*, 4, 1–19. https://doi.org/10.1365/s43439-022-00077-4

Voss, M. (2021) Lessons to learn – Zustand und Zukunft des Bevölkerungsschutzes in Deutschland vor dem Hintergrund der Corona-Pandemie [Lessons to learn – Current state and future of civil protection in Germany]. *KFS Working Paper, 20.* Berlin: Katastrophenforschungsstelle.

Ziekow, J. (2018) Verwaltungspraxis und Verwaltungswissenschaft (1st ed.) [Public administration practice and science], Schriften der Deutschen Sektion des Internationalen Instituts für Verwaltungswissenschaften: Vol. 41. Nomos.

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