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## **Administrative errors and the burden of correction and consequence: how information technology exacerbates the consequences of bureaucratic mistakes for citizens**

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**Abstract:** Administrative errors are an overlooked cause of administrative burdens. Citizens face costs in the correction of an error and in the material and immaterial consequences of an error, such as loss of access to benefits or services. This problem is especially relevant given the characteristics of information technology in the public sector, which is increasingly used to share data among multiple organisations through master data management systems. We conceptualise administrative errors and their burdens through the analysis of an exemplary case of a Dutch woman's Kafkaesque problems because of a registration error by the police regarding her stolen car.

**Keywords:** administrative errors; administrative burdens; master data systems; information technology; bureaucracy; ADM; automated decision making.

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## **1 Introduction**

### *1.1 A bug in the system*

In 1994, Ron – Dutch-Surinamese business man – is, for no apparent reason, subjected to intensive security screening at Schiphol airport. Later that year, he receives a subpoena for violating the Dutch Opium Law. Innocent of any crime, he reports himself at the Amsterdam police department to clear his name. After taking finger prints, the police are able to verify that he is, indeed, not the suspected criminal. It appears a distant acquaintance and noted drug dealer from Surinam is passing himself off as Ron. This, however, is far from the end of Ron’s problems:

- In 2003, Ron’s house is searched by 35 armed officers of the Dutch Fiscal Investigation Service on suspicion of laundering drug money.
- In 2004, he is called to appear for the appeal of his case at the Amsterdam Court of Justice.
- In 2005, a criminal investigation is started against him in Surinam. Police officers have already notified several of Ron’s business partners that he is a drug dealer.
- In 2006, the Ministry of Justice blocks his procedure to transform his business from a holding company into a private company, because he is not ‘of irreproachable behaviour’.
- In 2007, he is not allowed to board a flight to Surinam because he is labelled as an ‘unwanted foreigner’ and classified as a drug user. On various occasions, he is held up by airport security staff in front of his business associates.
- In 2008, Ron’s case is taken up by the Dutch National Ombudsman. By that time, his business is ruined. Nobody in Surinam wants to be associated with him anymore.

What happened here? Back in 2002, the aforementioned Surinamese criminal had again given up Ron’s name to the police. The criminal charges were corrected after the police found out about this attempted identity fraud, but the initial charges had, by then, already been submitted. These charges spread through the criminal justice information systems like wildfire. Ron’s name kept popping up in databases of various police forces and of the public prosecutor. As soon as the initial criminal charges were submitted to the system, this information was shared across the entire apparatus. The correction by the police did not lead to the automatic removal of the false criminal charges. There is no central database, but organisations merely copy each other’s data into their own system. As a result, registrations spread automatically through the system, but corrections do not.<sup>1</sup>

Ron's case seems like a real-life version of the identity mix-up in Terry Gilliam's dystopian film *Brazil*. In the film, a fly gets jammed in a printer which leads to a printing error and the subsequent arrest of Archibald Buttle instead of the suspected terrorist Archibald Tuttle. The correction of this error proves to be highly complicated and its consequences are severe. The film and Ron's case teach us several things. First, administrative errors can lead to huge consequences and costs for citizens. And second, information technology can exacerbate the consequences of errors and complicate their correction. Despite the fact that administrative errors are not a particularly new phenomenon – even though the effects of information technology are – there is surprisingly little research and literature on this topic. In this paper, we conceptualise administrative errors and analyse the burdens they cause in the context of emerging information technology.

## 1.2 Outline

The information architecture that guides the use of automated decision making (ADM) and data exchange, also known as automated administrative network decisions, turns the correction of administrative errors into a highly intractable problem. We analyse this issue from the perspective of 'administrative burdens' (Moynihan and Herd, 2010). This approach to bureaucratic dysfunction focuses on the direct interactions between citizens and government organisations, and on what citizens experience as onerous (Burden et al., 2012, p.742) and as barriers to access the services they are entitled to (De Jong and Rizvi, 2008). The performance of public service organisations is not just determined by formal rights and rules, but also by the bureaucratic operations designed to manage the access to those rights.

The literature on administrative burdens commonly understands burdens as the result of negligence – failure of organisations to look at the impact of their procedures on citizens (Moynihan and Herd, 2010, p.664) – or of a deliberate political strategy to render formal legislation ineffective through administrative means, such as defunding implementation or expanding local discretion to impose access barriers (Brodkin, 1997; Elster, 1992: 123; Hacker, 2004). We propose an additional explanation: administrative errors. Rather than design flaws in a bureaucratic procedure, administrative errors are unintended and unforeseen bugs in the system that can cause administrative burdens for citizens. Errors have always been a problem for bureaucracies, because they depend on identification and verification for the imposition of duties or delivery of services. We argue, however, that the consequences of these errors have grown exponentially with data being shared across various organisations and that the correction of these errors has become more complicated because of the specific design of information architecture (which facilitates automatic data exchange, but not automatic correction).

In the following, we first review the literature on administrative burdens and their causes, followed by an exploration of the concept of administrative errors and the importance of information technology for this topic. The empirical section of this paper consists of an exemplary case study of the dynamic between administrative errors and information architecture: the case of a stolen car and how a woman suffered psychological, physical, and financial consequences because of her and the system's inability to detect and correct an error in her vehicle registration. We then analyse the administrative burdens for citizens in terms of learning, psychological, and compliance costs (Moynihan et al., 2015) as well as the role of information architecture. In the

discussion section, we conceptualise the burdens of correction and consequence that administrative errors can cause and suggest measures to include correction and reparation mechanisms in the design and use of information technology.

## **2 Administrative burdens and administrative errors**

### *2.1 Administrative burdens and their causes*

Despite being of crucial value for the materialisation of the rule of law (e.g., Olsen, 2006), the bureaucratic organisational form has always been associated with its pathologies. As bureaucracies continue to survive and even thrive (Meier and Hill, 2007), critics continue to point out their dysfunctional tendencies. Most studies have focused on internal organisational mechanisms and organisational performance (e.g., Heinrich, 2016). Only relatively recently have scholars developed an interest in the way bureaucratic failure affects citizens' access to public benefits and services. The administrative burdens approach specifically focuses on the citizen experience of interactions with public organisations (Moynihan and Herd, 2010). We move beyond organisational performance to the question how "an individual's experience of policy implementation as onerous" (Burden et al., 2012, p.741) affects fair treatment and access to (social) rights (De Jong and Rizvi, 2008). Burdens can cause learning costs (finding out how procedures work and what services are available), psychological costs (social stigma associated with welfare services or stress caused by onerous procedures), and compliance costs (time and money spent on rules and requirements) (Moynihan et al., 2015). On a more general level, administrative burdens affect citizens' "orientations toward the institutions and policies of government" (Mettler and Soss, 2004, p.62) and their social capital and participation (Bruch et al., 2010; Wichowsky and Moynihan, 2008).

One of the underdeveloped topics in the field of administrative burdens is the question where burdens originate from. Two possible explanations are mentioned in the literature. The first is that burdens are a consequence of simple neglect: the failure of organisations to design or review their procedures with citizens in mind (Moynihan and Herd, 2010, p.664). A second, more popular, explanation is the 'hidden politics' of administrative burdens (Moynihan et al., 2015): deliberate choices made at the political level, including malevolent efforts to defund organisations responsible for the implementation of politically unpopular policies and laws, or to give local administrators more discretion to impose bureaucratic barriers as they see fit (Elster, 1992, p.123; Hacker, 2004). In the literature on street-level bureaucracy, we find a few additional explanations for barriers in citizens' access to the state. Limited resources and over-demand of services can push street-level bureaucrats to ration services (Brodtkin, 1997; Lipsky, 1984).<sup>2</sup> Red tape and a lack of efficiency can also be a strategy to protect street-level bureaucrats against cutbacks (Lipsky, 1980). In this paper, we argue that administrative errors are a crucial and currently overlooked source of administrative burdens.

## *2.2 Administrative errors and the burden of correction and consequence*

Bureaucracies are especially equipped to produce precision and predictability thanks to the formalisation of work (Gajduschek, 2003). Identification, verification, and procedural design are meant to guarantee that people are treated equally and in agreement with their formal rights. This does not mean, however, that bureaucracies are free of errors or inaccuracies in their operations. Interestingly, there is very little literature on bureaucratic or administrative errors in public administration research. Several related domains of study do, however, offer several insights. In statistics, data quality is vital and registration errors are identified as a major cause of false inferences (Mahapatra et al., 2007, p.1653; cf. Mikkelsen et al., 2015). This is, for instance, a problem in records of vital data (name, address) and vital events (birth, marriage, death) of citizens (Setel et al., 2007, p.1570). A proper registration is the only means of establishing and protecting identities, citizenship, and property rights, and data on demographic changes or cause-specific mortality are crucial for planning public services and public health policies (Mahapatra et al., 2007). Incorrect identification or localisation of citizens can also complicate matters for the state, ranging from criminal justice to taxation, and from determining eligibility for social benefits to designing effective health policies (Juárez et al., 2012).

Besides registration errors, the processing of otherwise correct information can also be a source of errors. In information theory literature, errors in the processing of data are understood as flaws in the design of procedures through which data is classified, transferred, analysed and decided upon. Standardisation is often crucial for the correct processing of information: classifications make sure that people interpret information in the same way (Bowker and Star, 2000), protocols make sure that data sent can also be received and understood by the receiver (Kurose and Ross, 2017; Yeh and Fiondella, 2017; Zukerman and Partovi, 2017), and algorithms secure “the isolation and black boxing of the sequential operations, ensuring their execution is protected from external interference” (Cordella and Tempini, 2015, p.281). The literature on specific, highly formalised, professions – such as medical professionals, public prosecutors, and air traffic controllers – highlights that processing errors can also occur on the operational level. The problem here are not so much flaws in the procedural design, but in the conclusions that are drawn from this data. This can lead to, for instance, the administration of a faulty medicine or the erroneous acquittal of a criminal (e.g., Keers et al., 2013; Peabody et al., 2004; WHO, 2016).

Administrative errors are only a subset of the administrative inaccuracies that might occur in bureaucratic operations. Inaccuracies can be both accidental and intentional and originate both from the citizen and from the government. In the case of the former, we speak of mistakes if the error is accidental and of fraud if it is intentional. Examples of errors are providing incorrect information, losing important documentation, interpreting information requests incorrectly or simply not having the correct or complete information. When the bureaucracy is the source of inaccuracies, we usually speak of administrative errors. We generally expect a bureaucracy to act according to the law and principles of good administration. However, there may be reasons, such as organisational interests, that leave known errors and known procedural flaws uncorrected. In this case we speak of maladministration. The various sources of administrative inaccuracies are summarised in Table 1.

**Table 1** Overview of administrative inaccuracies

<i>Administrative inaccuracies</i>	<i>Citizen (inaccuracies of provision)</i>	<i>Bureaucracy (inaccuracies of registration or processing)</i>
<i>Unintentional</i>	Mistake	Administrative error
<i>Intentional</i>	Fraud	Maladministration

In this paper, our focus is on administrative errors, which we define as any deviation from an intended action or outcome that is mandated by laws, rules or procedures (cf. Bullock, 2014). We will argue that the problem with errors is not only or primarily the error itself, but the fact that data-exchange causes errors to spread through organisations and that organisations attach all sorts of consequences to information in databases and registries (Peeters and Widlak, 2018). And while errors can have consequences for various actors, including politics or bureaucracy itself, our focus here is on errors that affect the decisions on obligations, rights and benefits for citizens. We distinguish four types of possible consequences of administrative errors for citizens (cf. De Jong, 2016, pp.43–44):

- False positives:
  - citizens have access to services or benefits they are formally not entitled to (such as unjustified access to social security benefits)
  - citizens do not have a formal obligation but are mistakenly forced to comply (such as unjustified taxation).
- False negatives:
  - citizens do not have access to services or benefits they are formally entitled to (such as exclusion from welfare support because of administrative burdens)
  - citizens have a formal obligation but are mistakenly not enforced to comply (such as failure to follow formal procedures).

We analyse administrative errors through the lens of administrative burdens (Moynihan and Herd, 2010). Small mistakes can have big consequences, as the literature on operational errors in highly formalised professions shows. Furthermore, the consequences of an error can be both positive and negative for individual citizens. An example of a positive consequence is acquittal from a trial because of a technical error by the public prosecutor. An example of a negative consequence is the unfair denial of access to social benefits. A negative consequence of an administrative error can lead to administrative burdens. Furthermore, the correction of administrative errors can produce specific administrative burdens as well. For instance, someone who is registered or believed to be registered under a wrong address in the civil registry might be required to follow a complex procedure and hand over official documentation to register the correct address. The extent of the burdens depends to a great extent on the correction and reparation mechanisms in place. Complaint and objection procedures are a common way for public bureaucracies to organise these mechanisms. However, as we will argue, the use of information architecture and data sharing complicates correction and exacerbates

consequences. Administrative errors may be incidental, but the burdens they produce can be explained by structural elements in the information architecture.

### *2.3 Administrative errors and information technology*

Critical analyses of information technology in public administration focus on its role in strengthening control and formalisation of procedures (e.g., Margetts, 1999). Information technology commonly works by breaking down a task into a sequential set of operations (simplification) which is then protected from external interference (closure) (Cordella and Tempini, 2015; Kallinikos, 2005). This makes organisations operate more machine-like: procedures are followed and decisions are made in an impersonal and standardised way (Widlak and Peeters, 2018, pp.87–88). In an e-bureaucracy (Cordella, 2007), Weberian rules are replaced by algorithms, but their effect is similar: a strengthening of instrumental rationality (Weber, 2006). This is especially evident in the reduction of street-level bureaucrats' discretionary space (Bovens and Zouridis, 2002). Websites replace window clerks. Databases replace case managers. Human interference in decision making is eliminated. Street-level bureaucrats become 'screen level bureaucrats' (Landsbergen, 2004). Judgement is replaced by classification.

These mechanisms are both amplified and distorted when information technology is introduced to work simultaneously for multiple organisations. An 'information architecture' extends beyond the boundaries of the individual organisations. It becomes the infrastructure upon which an entire 'bureaucratic cloud' depends (Peeters and Widlak, 2018, p.4). A typical example here are 'master data management systems' (Olson and Subodh, 2010), which are increasingly used to share data among government organisations. In the Netherlands for instance – where our empirical research is set – a total of 11 so-called 'basis registrations' digitalise and centralise vital data on citizens, business, geographical locations, buildings, vehicles, and so on.<sup>3</sup> Public and semi-public organisations that need this data for their primary processes can be given access through authorisation agreements. In the case of the civil registry, between 1000 and 2000 public, semi-public and private organisations use the data collected by municipalities for their internal decision making (Widlak and Peeters, 2018, p.73). A master data system contains 'authentic data' and one organisation is made responsible for the quality of the dataset. All organisations connected to the system receive their data from this authentic source. This improves efficiency and reduces double registrations and ambiguity of the data object (National Court of Audit/Algemene Rekenkamer, 2014).

However, data-exchange from master data systems has significant consequences for the burdens that administrative errors can cause. In this case – and in most cases in het Netherlands – the data from the master data system is perceived by each user organisation as input for their information system. From the perspective of the citizen the organisations operate as a single information system. However, the processing of corrections is not designed into the information architecture. This makes the system as a whole unpredictable and a black box. This effect is further exacerbated by three operating mechanisms (see also Peeters and Widlak, 2018, pp.180–182):

- 1 The informational hierarchy between the master data and the user organisations, who are obliged to use this data as the single authoritative point of reference for their operations, implies that the 'formal truth' of a registration is taken at face value. User

organisations no longer look at real situations and have very limited ways to deviate from the data system or to motivate the need for such a deviation.

- 2 The automatic application of master data by many user organisations creates a snowball effect of consequences. A mutation in the master data can have any number of consequences for the relation between citizens and user organisations, which cannot be overseen by neither the organisation responsible for the master data, nor by the user organisations, nor by citizens.<sup>4</sup>
- 3 Master data systems have a ‘single version of truth’, but ‘multiple sources of truth’ (Pang and Szafron, 2014): user organisations do not use the original master data in real-time, but copy mutations into their own registration systems – to filter out their own clients, for example). This implies the existence of time lags in mutations in the registration that differ per user organisation. Moreover, this means that a central correction of errors is only possible if a unified architecture of all organisations is in place. This also means that the identification of the source or an error is complicated for both user organisations and citizens.

### **3 Research design**

Given the lack of literature and theory building, our aim is to gain more insight in the administrative burdens caused by administrative errors, with special attention for the exacerbating effects of information technology. The case study method is appropriate for this purpose (Yin, 2009). It allows for further theory building and the identification of plausible causal mechanisms (Eisenhardt, 1989, p.537; Gerring, 2007, p.44) and for gathering rich data in ‘uncharted areas’ (Corbin and Strauss, 2008, p.145). Moreover, this method fits the administrative burdens approach, which calls for an in-depth analysis of the way bureaucratic practices affect citizens in their interactions with public organisations.

Our case is the story of a Dutch woman – Saskia de Meij – whose car was stolen. Despite reporting this to the police, she is still liable for motor vehicle tax and obliged to have the car inspected every year. Unable to convince the responsible agencies she no longer owns a car, her debts and personal problems pile up. Nineteen (!) years after her car was stolen, she remains entangled in the information system of the tax authority, the vehicle registration authority, and the judicial collection agency. This case is an example of an operational error leading to a false positive obligation: a person is unjustly made to comply with regulations. It is also exemplary of administrative errors in relation to contemporary information technology.

For our research, we followed the first three steps of the ‘Kafka Method’ for studying bureaucratic dysfunction, as developed by De Jong (2016, pp.125–126). The first step – explorative research and case selection – consisted of mapping the relevant actors and the broader issues at stake. Second, we reconstructed a narrative of the case from the citizen perspective alongside a factual description and timeline of the process. And third, a broader understanding of the problem and its origins is developed through interviews with other relevant actors as well as document analysis. The Kafka Method is a form of ‘action research’, which, in this case, implies that we assisted Saskia in her quest to understand what happened and to remedy the situation. We studied the case while



working for the Kafka Brigade Foundation – a non-profit organisation that studies and tackles dysfunctional bureaucracy.

We first met Saskia in July 2014, 16 years after the start of her problems. We introduced her to a lawyer to ensure her interests were not going to be harmed by our investigation. Saskia provided us with access to all documentation she had kept. This documentation is not complete regarding the period 2000–2011. We believe, however, that all key elements of her case are documented, given the full evidence she did present from before 2000 and after 2011. Moreover, all parties involved in the case – such as tax office and vehicle registration authority, agree with this view. Besides document analysis, we conducted interviews with 16 involved actors. We had regular contact with many of them during the research and they also provided us with information from their own registration systems. By the end of 2017, all involved parties were convinced that an administrative error had been made and reparation should take place. However, no party could (fully) correct the consequences they themselves had caused as a result of the error. At the time of writing, a liability lawsuit is in progress. In total, we built the case study on four years of real-time observation and 16 years of case reconstruction. In the following, we present the narrative of the case as it was experienced by the citizen involved. This case description includes a verification of facts through document analysis and interviews with other actors.

## **4 Case study: the stolen car**

### *4.1 Saskia's story*

On April 30th, 1998, Saskia's car is stolen. The same day she reports this to the police in the city of Rotterdam. When her motor vehicle license expires on August 20th, Saskia receives a letter to remind her to have her car tested. Initially, she thinks her police report has not been processed yet. In hindsight, however, it was the start of a long period of suffering. Only 16 years later, the case seems to be resolved. On September 4th, 2014, the police offer their apologies to Saskia. It turns out her car had already been found back on May 1st, 1998 – the day after Saskia had reported it stolen. The police had notified the vehicle registration authority, but had failed to inform Saskia. Hence, she never showed up to demand back her car, which was probably destroyed a month after according to procedure. Unfortunately, this acknowledgement did not lead to a full correction of the consequences of the error. Today, almost another four years later, Saskia is still fighting the authorities to refund the bulk of all the taxes and fines she unfairly paid over the years.

### *4.2 The consequences of an administrative error*

For years, Saskia thinks she has a conflict with the vehicle registration authority, the tax authority, and the judicial collection agency. These organisations have been sending her tax forms and fines. They were not convinced by the police report regarding her stolen car. Time and again, these organisations referred to the vehicle registration system in which the car was still registered on her name. Therefore, she remained liable for motor vehicle tax and vehicle safety tests. On several occasions, bailiffs and the police came by Saskia's house – sometimes with no less than six officers – when she had been unable to

pay her tax or fines. Saskia is a single mom. She tried to pay every time, even though she believes she should not. After all, what would happen to her parental authority if she ends up in jail? She borrows money – lots of money – from friends and relatives. The situation is very stressful for Saskia. Several years after the theft of her car, she loses her job and ends up on welfare support. From then on, the fiscal claims are automatically deducted from her monthly welfare check. Saskia is unable to pay for all her expenses. Starting in the year 2000, she increasingly suffers from stress rheumatism – which, according to her general practitioner, can be largely attributed to her financial problems.

In 2011, she succeeds in striking the title of ownership from the vehicle registration. From now on, no new taxes and fines are added. However, this does not automatically lead to a refund of all fines and taxes paid unjustly. Desperate, she sends a handwritten letter to the mayor of Rotterdam in March 2014. A few months later, the Kafka Brigade starts working on the case. Its contacts with the director of the vehicle registration authority trigger a quick response. Documentation shows that the police registered an ‘end date of theft’ in the vehicle registration the day after Saskia’s car was stolen. This means that the vehicle registration authority does not know what happened to the vehicle other than what the police has registered. After some pressure by the mayor’s personal assistant, the police agree to dig a bit deeper as well. They confirm the car was found back the day after the theft. It remains unclear, however, why Silvia was not informed. The car has been destroyed or sold off long ago: recovered cars are stored for no longer than a month.<sup>5</sup> Given these facts, the police offer their apologies to Silvia.

### *4.3 The correction of the error*

Based on the police’s letter of apology the tax authority is willing to nullify outstanding taxes. Here, new problems arise. The tax authority is able to nullify seven tax-bills. However, the tax authority is unable to provide a record of road tax settled with other taxes. Furthermore, they are unable to look back in their records more than five years. Older records are deleted from the registry. Complaint procedures are expired even though Saskia never had the opportunity to file a formal complaint. Saskia’s lawyer writes several letters to a special department of the tax service that retains older records. A year and a half later, the lawyer is notified that the records will not be provided, because Saskia’s case does not qualify as a ‘complex case’.<sup>6</sup>

Soon, more problems arise in the correction of the error. The vehicle registration authority informs Saskia that her registration cannot be retroactively changed for the period between 1998 and 2011. According to the authority, this “would severely harm the integrity of the registry”. They are, however, willing to send a request for correction to the judicial collection agency. This agency is, however, unable to process the vehicle registration authority’s request. They respond that Saskia is no longer in their system and, moreover, that they cannot reimburse the fines she paid because “we already sent the money to The Hague years ago”.<sup>7</sup> As a result, Saskia still has debts. She cannot pay for all her basic services. Her energy supplier cuts her off. The winter of 2017–2018 is the third in a row she is literally left in the cold.

For years, taxes and fines always found their way to Saskia thanks to the data sharing between the registration systems of the organisations involved. When it turns out these taxes and fines were unjustified, nothing happens and nobody takes responsibility. Confronted with this situation, Saskia’s lawyer contacts the National Ombudsman. The Ombudsman, however, will not take the case because it would violate the statute of

limitations, which states that citizen complaints need to be filed within a year. Another possible solution for Saskia might come from a government debt relief program. An enrolment condition is, however, that people accept their guilt for causing the debts – something Saskia cannot do because this would affect her legal position. By the way, Saskia's energy supplier has a policy to reconnect clients with financial problems on the condition, however, that the client is accepted in a government debt relief program.

Many large government agencies in the Netherlands have special teams to deal with complex cases, in which citizens fall between the cracks of the usual bureaucratic procedures. The tax authority's team, however, says Saskia's case does not qualify as 'complex' because only one unit of their organisation is involved. The judicial collection agency's team does not respond to several requests to take up the case. The vehicle registration authority is responsible for the chain computerisation. The chain computerisation coordination committee, however, decides not to take up the case as long as the Rotterdam police department has not taken up a claim for damages. The police, then, refers Saskia to its insurance company, where she can file for damages. After initially forgetting the case, the insurance company responds many months later that Saskia will need to prove the exact amount of money she says she is entitled to, to provide all file numbers of her fines, and to prove she has done enough to reduce the damages. To do this, Saskia needs the file numbers of all the fines that the judicial collection agency has collected over the years. The agency, however, is unable to recover old file numbers in their system – they are merely able to hand over a collection of numbers from the last year.

In a new meeting between Saskia and the police – two years after the police admitted their fault – she is offered a reimbursement of a small amount of her direct financial damages. Saskia is not willing to accept: "I fought 18 years for recognition. I borrowed money from my family and everybody thinks I am to blame for this situation". This leaves Saskia with no other option than to start a legal procedure against the Rotterdam police department. She demands 50.000,- euros in material damage plus a similar amount for immaterial damage.

## **5 Analysis**

In terms of administrative burdens, Saskia has been confronted with compliance, psychological, and learning costs (Moynihan et al., 2015). Compliance costs are the financial consequences of years of paying taxes and fines – and having to borrow money from relatives to be able to pay them. Saskia ended up in debts because she was forced to comply with the consequences of a faulty registration. Psychological costs come in the form of the stress caused by the entire process, such as the fear of losing parental authority. And the learning costs of Saskia were the 16 years it took her to find out the actual cause of the problem. Moreover, Saskia's case shows that the costs of administrative burdens can extend beyond this framework. She has also suffered physical and practical costs, such as being cut off by her energy supplier, developing stress rheumatism, and losing her car (which she would have been able to recover if the police had notified her).

The administrative error made by the police generated a cascade of burdens. First of all, the consequence of the error is that other organisations believe that Saskia is liable for various taxes. They never question the correctness of the master data, placing Saskia in

the position to prove them wrong. Second, the cause of the error proved to be extremely difficult for her to detect given the design of the information architecture. The only organisation that Saskia never communicated with directly after she reported her car as stolen proved to be the source. And third, once the error had been detected, it was extremely complicated to correct its consequences. Not only does correction need to take place in every single organisation Saskia has dealt with, but these organisations also pass the buck to each other when it comes to proving costs or accepting responsibility.

This escalation of consequences can be traced back to the way data is shared among the police, the vehicle registration authority, the tax authority, and the judicial collection agency. If the police find back a stolen car, this information is registered in the information system of the police. This information is automatically passed on to the motor vehicle registry, which falls under the responsibility of the vehicle registration authority. The consequence of having a vehicle registered is that the authority assumes you are obliged to a yearly vehicle security test. The tax authority also has access to the motor vehicle registry. For them, the consequence of having a vehicle registered is liability for motor vehicle tax. And when someone fails to pay, the case is automatically transferred to the judicial collection agency. None of these organisations questions the correctness of the data they receive. They act upon the data as if it were the truth. In other words, they comply with the logic of master data systems.

Interestingly, mutations in the master data spread automatically through the system, but corrections do not. It is one-way traffic. Rights and duties are only partially automated in the system as a whole. Errors remain unnoticed in the system and when the error is finally detected, there are no proper correction and reparation mechanisms in place. The official police apology was enough for Saskia to convince organisations that she no longer owned the car registered on her name, however no procedures were in place to handle the case or undo the negative consequences Saskia had faced for years. Information could not be found, had not been saved, or could not be changed retroactively. Moreover, the main reason that Saskia spent so long trying to fix her problem is that it was completely unclear for her where the error was made. For years, she assumed she had a problem with the vehicle registration authority. It turned out that the police had caused the error – an actor which she had not been in contact with since the day her car was stolen back in 1998. Citizens are not informed with whom what information is shared and for what purpose. Citizens are also not informed of the possible consequences of data sharing. It is up to them to figure this out all alone.

## **6 Conclusion and discussion: escaping the bureaucratic hyperreality**

In this paper, we have discussed how administrative errors can cause administrative burdens of correction and consequence for citizens. Moreover, information technology, such as the use of master data systems in data sharing, can cause errors to spread like wildfire through an entire network of organisations. Data-exchange can lead to highly unpredictable and opaque outcomes for both public organisations and citizens.<sup>8</sup> This exacerbates the burdens of what may have been a small mistake in the beginning. By using the administrative burdens approach (e.g., Moynihan and Herd, 2010) we have been able to highlight burdens that do not pop up from the perspective of individual organisations and remain largely hidden from sight for both professionals and managers.

Based on our analysis and our case study, we can develop a conceptualisation of the burdens that administrative errors can cause in general and in information systems in particular:

- The burden of correcting an error in a registration:
  - Input does not only come from the citizen or the professional, but can also come from the administration of another organisation. The professional or citizen is not a safety-valve anymore for erroneous information. The organisation has in this sense become blind for the citizen and for reality. The burden of detecting these errors falls on the citizen, which is of course a higher burden if the error has already spread and if the citizen is not seen any more as a natural or necessary node in the information stream.
  - Identification of the source of administrative errors in master data systems is complicated – it is often unclear, where the error was made, resulting in high learning costs.
  - Apart from the detection, the burden of correction of an administrative error itself falls on the citizen – it takes time and effort to correct an error through the available correction mechanisms and even more so if the error has spread over a network of organisations. Correction of an error is not applied retroactively in master data systems: correction has to be done separately in every single relevant organisation – there is no automatic roll back from corrections in the master data.
  - The burden of proof for the correction administrative errors falls on the citizen – public organisations take the correctness of their registration as a given.
- The burden of the consequences of decisions based on an administrative error:
  - The burden to undo a negative consequence is placed on the citizen. An unjust obligation such as a tax or fine often has to be paid before a complaint can be made – which is especially burdensome for low-income citizens.
  - Registration errors in master data systems spread across organisations like wildfire – one single error can affect a citizen’s relation with multiple public organisations, trigger unjust obligations with various services and hence require someone to claim compensation for every unjust obligation.
  - Negative consequences of an error cannot always be undone – material and immaterial damages can, at most, be compensated. From other research (Peeters and Widlak, 2018) we know that similar problems exist around public services. The loss of access to a service or benefit can usually only be repaired by going through the formal application procedure again. This renewed application for services might be complicated by waiting lists<sup>9</sup> or changed eligibility criteria.<sup>10</sup>
  - The costs to repair consequences might be higher than taking the loss caused by an administrative error – especially legal costs for dealing with organisations that are unwilling or unable to cooperate can be very high for individual citizens.

As government organisations are increasingly sharing data – also with private organisations – to improve the efficiency of their operations, it is very likely that the issue

of administrative errors will become more important. More citizens will suffer bigger consequences as a result of them. Public organisations and the people working there depend on the design of information architecture for their daily operations. Before the digitalisation and the sharing of master data across various organisations, professionals often had a discretionary space to correct registrations. Now, they are bound to the information provided to them by the system. Information architecture provides a truth that does not argue. Data is an abstraction from social reality. It produces a ‘bureaucratic hyperreality’ (cf. Baudrillard, 1994), in which it is impossible for a bureaucrat to distinguish what is real from what is fiction and what is reasonable from what is unfair.

The existing mechanisms for the correction and reparation of administrative errors – such as complaint departments, debt relief programs and Ombudsmen – do not suffice because of the limited focus of complaint departments, and the formal entry conditions set for formal objections, debt relief and Ombudsmen. Moreover, corrections are highly burdensome if the burden of proof falls on the citizen and multiple organisations are involved. We, therefore, argue for the inclusion of the citizen perspective in the design of information systems in public service organisations as well as in their daily use. Citizens and street-level professionals must have access to the tools necessary to correct administrative errors and their consequences. This, first of all, means improving citizens’ information position. The black box of master data sharing should be opened. It should be possible to know who is using the information of a citizen and for which purpose. There is currently no way to receive a (complete, validated) copy of the data, nor an overview of who used the data to what end in individual cases. These two elements make it near to impossible to challenge administrative decisions. Secondly, public organisations should pay more attention to correction and reparation mechanisms. The burdens caused by administrative errors are still too often shifted towards the citizen. Failure to address this issue comes close to intentional neglect and, therefore, maladministration.

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## Notes

<sup>1</sup>This case description is lifted from an investigation by the Dutch National Ombudsman, No. 2009/199: <https://www.nationaleombudsman.nl/uploads/rapport2009-199.pdf>

<sup>2</sup>Which can include limiting responsiveness to client demands, introducing queues to manage the flow of clients, sticking closely to formal procedures and opening hours, and categorising clients to routinise work.

<sup>3</sup>Tweede Kamer de Staten-Generaal, 2002–2003, Kamerstuk 26387, nr. 18.

<sup>4</sup>This mechanism is often further amplified by the common lack of purpose limitation in master data systems: any number of user organisations can be added and it is, therefore, unclear for which purposes information will be used.



<sup>5</sup>We assume that a second error must have been made when the car was destroyed, since this also did not trigger a deregistration of the vehicle. We have not been able to verify this.

<sup>6</sup>To qualify as a 'complex case' more than one department of the tax authority needs to be involved. Saskia's case only involves the road tax department.

<sup>7</sup>'The Hague' refers to the seat of Dutch government, where the Ministry of Justice is located.

<sup>8</sup>Outside the scope of this paper, but relevant for the study of information architecture are issues of proportionality. Proportionality requires insight in the practical consequences of a decision. These are, however, unknown when a mutation in master data is made. Registration and use are separated in such a way that enforcement or service organisations cannot change the registration and the registering organisation cannot know the consequences enforcement or service organisations attach to a mutation.

<sup>9</sup>For example, if someone loses his parking permit due to faulty deregistration as a resident, he would have to apply again and join a waiting list after re-registration.

<sup>10</sup>For example, a family from the city of Rotterdam in the Netherlands discovered that they were not registered at their current address in the civil registry, despite having gone through the proper procedures years ago. When trying to correct this error, they are notified they are no longer eligible for the social housing apartment where they have been living for years. New regulations intended to stop the influx of poor people in vulnerable neighbourhoods require the family to earn at least 120% of the minimum wage – which they do not. Personal interference from the Ombudsman of the city of Rotterdam was necessary to prevent home eviction.