

Title: A behavioral model of heuristics and biases in frontline policy implementation

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Abstract

This article theorises how behavioural public administration can help improve our understanding of frontline policy implementation. The human factors that characterise policy implementation remain undertheorised: individual variation in policy implementation is dismissed as mere “noise” that hinders predictability in policy implementation. This article aims to fill this gap. We provide a model for street level decision-making which outlines the role of heuristics and biases in frontline workers’ allocation of resources and sanctions. Based on an analysis of the behavioural and streetlevel bureaucracy literature, we present 11 testable propositions that point to predictable patterns in the ways that bounded rationality influences policy implementation and outcomes. Heuristics can help hard-pressed frontline public service workers to make decisions but may also produce social inequity or inefficient or ineffective service. Therefore, we need to improve understanding of biases that are common among frontline workers in order to inform the development of appropriate mitigation strategies, such as de-biasing or even ‘re-biasing’ (nudging).

Key words

behavioural public administration • bounded rationality • street-level bureaucracy • cognitive bias • heuristics • policy implementation • public administration • public services • nudge

Introduction

This paper proposes a novel framework for the influence of heuristics and biases on the allocation of resources and sanctions by frontline workers. Under the heading of “Behavioral Public Administration” (BPA), scholars increasingly engage in “the analysis of public administration from the micro-level perspective of individual behavior and attitudes by drawing on insights from psychology” (Grimmelikhuijsen et al. 2017). We focus on frontline workers, also called street-level bureaucrats or policy professionals, who are involved in either the delivery of public services, for example welfare or education providers, or the allocation of sanctions, such as police officers or inspectors. Street-level work entails direct social interactions with policy target groups, or clients, such as welfare applicants, students, car drivers, or farmers. Clearly, this interaction is not merely a rational, technocratic process. Yet, the “human factors” that characterise these processes remain remarkably undertheorised (Saetren 2014; Winter 2012).

Frontline workers ‘cope’ with work demands that typically exceed the limited time and resources available to them (Lipsky 1980; Maynard-Moody and Musheno 2000; Tummers et al. 2015). In such a context street-level bureaucrats use heuristics and biases to aid decision-making (Harrits 2019; Jilke and Tummers 2018). Accordingly, the policies “in action” can diverge significantly from the policy “on paper” (Gofen 2014). BPA-inspired research has undoubtedly fostered progress in our understanding of the micro-mechanisms that drive frontline policy implementation (Grimmelikhuijsen et al. 2017; James et al. 2017). For example, inspectors have different “styles” of enforcing public policies (de Boer 2018; de Boer et al. 2018; May and Wood 2003; Rutz et al. 2017). Or, frontline workers can feel “alienated” from the policies they should implement (Loyens 2015; Thomann et al. 2018b; Tummers 2011). Frontline bureaucrats’ actions may be influenced by the extent to which they share the political ideologies of their principals (Lee and Park, this volume). However, the full

potential of behavioral insights to *explain* street-level behavior including direct impacts on clients has not yet been exploited.

Frontline workers who put democratically decided upon public policies into practice have more direct social impact than other bureaucrats: citizens usually have their most direct experience with “the state” through them. Thus, systematic bias in frontline policy implementation can affect societal outcomes and has implications for democracy at large (Zacka 2019). Aiming toward a more general understanding of these phenomena, we theorise how different biases and heuristics can explain the behavior of policy implementers, and the consequent outcomes for clients. Thus we respond to recent calls for a better understanding of how micro-level behavioral processes translate into policy and social outcomes (Ewert et al, this volume). To date there has been little work which considers systematically how a range of cognitive biases and heuristics will affect frontline work and resulting client and societal outcomes.

Our framework builds on the bounded rationality approach to administrative decision-making (Simon 1978). Challenging rational models of decision-making, this approach highlights limitations in information searching and the use of heuristics as rules of thumb to guide decisions. A *heuristic* is a simple mental short-cut, used intuitively, which simplifies and assists decision-making and helps find ‘adequate, though often imperfect, answers to difficult questions’ (Kahneman 2011: 98). *Cognitive bias* occurs when heuristics lead to systematic deviations from the optimal or rational course of action in the judgments and decision-making processes of frontline workers. Heuristics are often very useful – and indeed are arguably imperative to daily work tasks - but they can also lead to systematic biases in decision-making (Tversky and Kahneman 1974), including in the public sector (see Battaglio *et al.* 2018; Thaler and Sustein 2008). To date, however, there has been little attempt to integrate behavioral insights into a more general framework of how policy implementers

behave toward clients (see however Gilke and Tummers 2018; Schneider and Ingram 1993; Weaver 2014).

Arguably, existing frameworks for explaining policy implementation outcomes neglect the behavioral aspects of street-level work. Indeed, street-level bureaucracy research lacks cumulative theory development (Maynard-Moody and Portillo 2010; Saetren 2014; Winter 2012). This limits policy implementation scholarship in deriving lessons with broader utility for policy practitioners (O'Toole 2004) and our capacity to actually understand the importance of frontline implementation within the broader democratic system. A behavioral perspective helps us develop an explicitly explanatory perspective linking biases with behaviors and resulting societal outcomes. We build on recent empirical behavioral work on bureaucrats (see Battaglio et al. 2018), but apply these insights to the specificities of street-level work and emphasise how biases may affect clients and societal outcomes.

Because of the direct implications for social equity (Schneider and Ingram 1993), we are particularly interested in frontline workers' behavior toward clients. Following Lipsky (1980), we argue that street-level behavior involves resource or sanction allocation, underpinned by processes of interaction with clients and information processing. In these processes, the decisions of frontline workers can lead them to move towards, away from, or against clients (Tummers et al. 2015). Our core goal is to map how these decisions may be affected by different heuristics and biases. Understanding how micro-level policy implementation translates into policy outcomes requires us to develop and test such propositions, in order to increase the value of behavioral public administration research for practice (Grimmelikhuijsen et al. 2017: 52).

We first model a behavioral perspective on frontline policy implementation. We then outline the key tasks and processes of frontline policy implementation that are of behavioral relevance. Next, we review the behavioral and street-level bureaucracy literature in order to

map out how different heuristics and biases could influence street-level behavior. The propositions that we derive from this review allow us to outline implications for the broader role of frontline workers in producing policy outcomes.

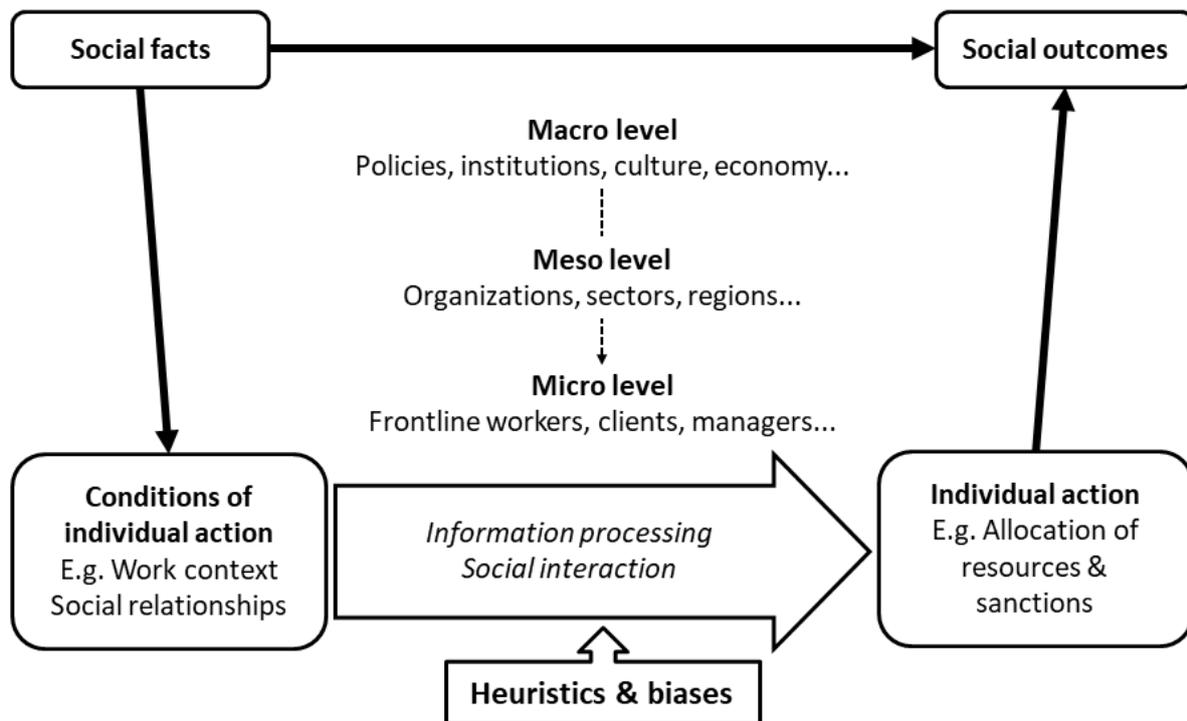
The article aims to advance the implementation field by linking implementation theory with behavioral science in order to consider systematically how a wide range of cognitive biases and heuristics can influence policy outcomes. Based on this analysis, we provide theoretically informed hypotheses that can be subject to empirical testing. We hope the paper provides value for public sector managers by drawing attention to areas where cognitive bias at the frontline may impact on clients either positively or negatively, and identifying instances where attempts should be made to mitigate such bias.

Behavioral perspectives on street-level bureaucracy

Since Thaler and Sunstein's book "Nudge" appeared in 2008, behavioral public policy and administration approaches have been using insights about psychological micro-mechanisms to improve the design and implementation of public policies (James et al. 2017).¹ As Figure 1 illustrates, this "behavioral turn" seeks to understand collective action at the macro level by studying the micro-foundations of individual attitudes and behavior (Coleman 1990). "Social facts" at the macro and meso level affect individual conditions for action. These conditions translate into individual actions that, in aggregate, produce social outcomes. The "analysis of public administration topics through a psychological lens can potentially be useful to confirm, add nuance to, or extend classical public administration theories" (Grimmelkhuijsen et al. 2017: 45).

¹ Although the use of experiments is widespread BPA, we do not associate behavioral perspectives with specific empirical research methods.

Figure 1: A behavioral model of frontline policy implementation



Source: Own illustration based on Coleman (1990)

The study of street-level bureaucracy has traditionally focused on the micro-level of administrative action (Lipsky 1980). Due to the discretion they have, frontline workers are particularly crucial *de facto* policy makers (Lipsky 1980). Not surprisingly, the study of frontline policy implementation has therefore become a key area of application for BPA. The model in Figure 1 highlights that frontline workers react cognitively to the macro-, meso-, and micro *contexts that condition their work*, such as the policies they implement, the discretion they possess, the political and bureaucratic institutions and organizations they are accountable toward, and the professional and societal norms that shape the sector in which they work. As state agents, citizen agents, and professionals, frontline workers then act upon these conditions within various *social relationships* with clients, peers, and superiors. Based on this

model, we now briefly review some key behaviorally informed recent street-level bureaucracy research and identify gaps that prevail.

Cognitive responses to conditions of street-level action

Street-level workers generally have high discretion and, simultaneously, face considerable demands resulting from scarce resources, high caseloads (van Loon and Jakobsen 2018), performance pressure (Soss et al. 2011), administrative burdens (Jilke et al. 2018; Moynihan et al. 2015), and multiple accountability relationships (Thomann et al. 2018a). Frontline workers exhibit various *cognitive responses* to these contexts. For instance, policy alienation (Loyens 2015; Tummers 2011) refers to a cognitive state of psychological disconnection from the policy program to be implemented. Competing demands may lead to accountability dilemmas (Hall et al. 2017; Thomann et al. 2018a). “Coping” then captures their efforts to master, tolerate, or reduce external and internal demands and conflicts they face on an everyday basis (Tummers et al. 2015). Next to policy alienation, for implementation willingness it also matters how much discretion frontline workers perceive themselves to have (Thomann et al. 2018b; Tummers and Bekkers 2014).

Street-level action

Street-level action refers to *how frontline workers use their discretion*. It can include individual or collective patterns (Gofen 2014; Rutz et al. 2017), such as (non-)compliance with rules (Weaver 2014) or performance relating to organizational or policy targets; or covert or overt divergence from policies on paper, which may both entail creative interpretations and non-compliance (Gofen 2014); or different “styles” of using discretion (de Boer 2018; May and Wood 2003; Rutz et al. 2017). Behavioral coping happens in social interaction or

individually (Tummers et al. 2015; Van Loon and Jakobsen 2017). Frontline workers often use heuristics in order to evaluate the deservingness, truthfulness and trustworthiness of clients, leading to an unequal treatment of different clients (Akram 2018; Harrits 2019; Hong 2017; Pedersen et al. 2018; Raaphorst and van de Walle 2018; Thomann and Rapp 2018).

Unaddressed questions

The question to what extent or under what conditions street-level discretion is desirable or beneficial, as opposed to undesirable, harmful, or even unethical needs to be addressed (see for example Cohen and Klenk 2019; Gofen 2014; Ventriss et al. 2019; Zacka 2019). More research should then address how to effectively reduce undesirable uses of street-level discretion (Andersen and Guul 2018). Much of current BPA research assumes that people often feel and behave based on their perceptions of reality, not on the basis of reality itself (Thomann et al. 2018b). More research should analyze how descriptive concepts such as policy alienation or cognitive coping translate into actual street-level behavior beyond behavioral intentions (for example Loyens 2015). A behavioral perspective that enriches street-level bureaucracy theory should help us gain a more general understanding of policy outcomes resulting from street-level action. Only if we understand this link, can we understand the implications for policy outcomes and democracy at large.

BPA has contributed important descriptive concepts of cognitive and behavioral aspects of street-level work. However, there has not been a systematic conceptual mapping of cognitive biases and heuristics onto the processes undertaken by street-level bureaucrats and potential outcomes for clients. To fill this gap, we model the heuristics and biases linking the conditions of street-level work with the behaviors of frontline workers towards clients—that is, the lower part of Figure 1.

A behavioral framework of frontline policy implementation

At the heart of our analysis is a focus on the allocation of resources (such as welfare benefits, information services, time or efforts) and sanctions (such as pulling over a car driver, issuing fines, or performing follow-up inspections) to clients (Soss et al. 2011). Allocating resources or sanctions encompass the majority of street-level bureaucrats' work. These two major tasks are underpinned by two key processes: interaction with peers and clients (Raaphorst and van de Walle 2018), and information processing (Lipsky 1980). In order to decide how to allocate resources and sanctions, street-level bureaucrats consult colleagues for advice, follow cues, and are influenced by peer group and professional norms and by clients themselves. These often unconscious peer and client influences can be subject to cognitive biases. Distributing sanctions and resources also involves information processing; such as evaluating applications for assistance, or assessing eligibility against formal rules or criteria. Information processing too is influenced by a range of biases and heuristics.

Although street-level action has many facets (Cohen and Klenk 2019), our core focus here is in how frontline workers treat clients and thus contribute to policy outcomes. Street-level bureaucrats move *toward* clients when they pragmatically adjust to their needs for the client's benefit (Tummers et al. 2015). Other-serving forms of street-level divergence (Gofen 2014) or educational enforcement styles (de Boer 2018) too are ways of moving toward clients. Frontline workers move *away* from clients when they prioritise something other than the clients (Tummers et al. 2015), or when they engage in self-serving street-level divergence from policy, or employ formalistic enforcement styles. Finally, moving *against* clients generally refers to street-level behaviors that specifically confront, de-prioritise or harm - for example, discriminate against - specific clients. While initially used to describe types of coping (Tummers et al. 2015), we illustrate below that such directions of movement also describe more general patterns of behavior when frontline workers allocate sanctions or

resources to clients. Modelling them helps us to identify potential social impacts of biases in street-level behavior. Of course, “the clients” themselves are a heterogeneous group: some biases may lead frontline workers to move toward certain clients, at the expense of others.

Heuristics and biases affecting street-level action

Heuristics can be, and often are, useful, in creating efficiencies and reducing complexity, and their use can help generate accurate and appropriate decisions (Gigerenzer 2016). However, relying on heuristics can lead to systematic bias when decisions do not conform to a normative standard of how things *ought* to be done in the particular circumstance, had all relevant information been taken into account (Kahneman et al. 1982). Heuristics and biases typically operate at a subconscious level (Pronin and Schmidt 2013; Simon 1978).

We formulate general, testable propositions and give specific examples of how several heuristics and biases might commonly influence frontline workers’ behavioral responses to pressurised contexts, including potential outcomes for clients.² Numerous heuristics and biases have been documented in behavioral economics and psychology literature; indeed, a single list which has been amalgamated over time on Wikipedia identifies as many as 188 different cognitive biases. Battaglio et al. (2018) identify 23 specific observable cognitive biases that have been documented in studies of public administration. Here, we focus on a subset of biases and heuristics, those which are most relevant to information processing and social interactions between frontline workers and clients, two processes that underpin the allocation of resource and sanctions which themselves form the core part of street-level bureaucrats’ work. Our propositions are derived from existing empirical literature as well as from systematic reviews, as discussed in the next section.

² We do not theorise the normative dimensions of frontline workers’ exercise of these biases (but see Gigerenzer 2016; Simon 1978; Zacka 2019). Empirically understanding the link of heuristics with policy outcomes is necessary for normatively appraising these outcomes (Ventriss et al. 2019).

Representativeness heuristic

The representativeness heuristic is employed when ‘probabilities are evaluated by the degree to which A is representative of B’ (Tversky and Kahneman 1974: 1124). This could entail a frontline worker making judgments about whether the client is the kind of person that merits help or that will succeed if resources are allocated, regardless of the true probability of that person benefitting from this input (Harrits 2019; Jilke and Tummers 2018). Or, the frontline worker may allocate sanctions on the basis of their perception that a person or organization is typical of a person or entity who might fall foul of regulations (Pedersen et al. 2018; Schneider and Ingram 1993; Soss et al. 2011). Such judgments occur in the context of direct social interaction with clients, but can also take place on the basis of written information, such as names or ethnic origin. They can lead to divergence from the use of formal criteria for assessing eligibility, selecting clients which require the least resources (creaming), or even discrimination, creating suboptimal outcomes for clients in areas such as social welfare (Thomann and Rapp 2018); voter registration (White et al. 2015); and elderly care (Jilke et al. 2018). The representativeness heuristic suggests the following proposition:

Proposition 1: Frontline workers allocate resources and sanctions and interact with clients according to the client’s representativeness of relevant stereotypes, such as deservingness, power, or client profiles.

The representativeness heuristic should thus lead frontline workers to move toward clients they deem deserving and/ or powerful, and away from or even against powerless or undeserving clients (Jilke and Tummers 2018; Schneider and Ingram 1993; Thomann and Rapp 2017). Moreover, in some fields such as policing or welfare work, profiling plays an important role in the training and practices of frontline workers (Epp et al. 2017). This can be problematic for those clients that represent a specific profile, if frontline workers choose to

allocate less resources or more sanctions based on representativeness rather than an actual assessment of the case.

Availability heuristic

Due to lack of time and inadequate information sources, frontline bureaucrats have to economise on information searching. The availability heuristic (Tversky and Kahneman 1974) provides a quick rule of thumb when cognitive bandwidth is limited. It involves assessing the probability of an event occurring based on the ease with which a similar event comes to mind, often related to the recency of a similar event occurring, or to a personal or particularly memorable experience. To illustrate, a social worker making a mental health assessment, rather than conducting a full risk analysis, may be unconsciously influenced by a recent case where a client committed suicide, leading to an over-estimation of risk in relation to the client in question and influencing the allocation of mental health support. The availability heuristic here leads to bias because the decision to treat does not reflect the laws of probability. This may affect the availability of that resource to other eligible, and more needy clients. The availability heuristic is important in information processing amongst citizens (Haynes et al. 2013) and students (Karens et al. 2016). Research into the operation of availability bias amongst bureaucrats is an interesting area for future research. Generally, the availability heuristic leads to the following expectation:

Proposition 2: Frontline workers, to economise on information searching, allocate resources and sanctions according to the similarity of the case with recent, personal, or memorable experiences.

Frontline workers will try to avoid repeating negative experiences, and might react overly positively to situations resembling positive experiences. In this way, the availability heuristic is linked with the affect heuristic, discussed below.

Affinity bias

Affinity bias refers to the propensity to subconsciously act favourably toward others with whom one has an affinity, that is with people who are like oneself, who share a similar background or who one likes, or even finds attractive (Folley and Williamson 2018). Affinity bias can result in differential treatment of clients in the allocation of sanctions or resources, depending on whether they share characteristics with the street-level bureaucrat, such as their gender, or their cultural, social or ethnic background. Literature on representative bureaucracy provides evidence of inequitable treatment of service users on the basis of race, gender and class and its effects (Ricucci and Van Ryzin 2017; Hong 2017; Akram 2018). Affinity bias may also be something which develops during repeated social interactions with clients over time, or in the course of an encounter, as trust grows between frontline workers and clients. Affinity bias can also occur where an inspector views a regulatee as compliant and therefore trustworthy, leading to a more lenient enforcement style during inspections (de Boer 2018). It suggests the following proposition:

Proposition 3: When distributing resources or sanctions, frontline workers tend to move toward clients who are similar to themselves or whom they like or trust, and away from those with whom they have no affinity.

Affinity bias can disadvantage minority populations particularly if the composition of the bureaucracy does not reflect the diversity of the client population.

Affect heuristic

The affect heuristic involves relying on intuitive feelings or emotions that occur ‘rapidly and automatically’ (Slovic et al. 2002: 397) in response to stimuli in bureaucratic decision-making (Nørgaard 2018; Welch 1997). To illustrate, under conditions of high discretion and

multiple pressures on resources, clients that make an emotional connection with a frontline worker may be more likely to succeed in a request for assistance or to receive a lesser sanction. For instance, in one study of prisons, drug users who were ‘tearful and repentant’ received more lenient sanctions than those who are ‘upset and testy’ (Jensen and Pedersen 2017). The affect heuristic may also be triggered by frontline workers’ own personal or recent experiences of an issue, which itself relates to the availability heuristic. Depending on how their circumstances accord with their own experience and their recollection of this, this may affect their empathic abilities (Jensen and Pedersen 2017). The affect heuristic suggests the following general proposition:

Proposition 4: When allocating sanctions or resources or during social interactions, frontline workers are likely to move towards clients whose circumstances or demeanor generate empathy or emotional resonance, or potentially away from them if they trigger negative emotions.

This mechanism can disadvantage certain client groups over others based on their general ability to evoke positive emotional resonance, for instance due to attractiveness, gender, social competences or certain mental health conditions. Empathy does not however always create inequity, and can lead street-level bureaucrats to act as policy entrepreneurs and collectively diverge from policies, potentially resulting in policy reform and better outcomes (Gofen 2014; Maynard-Moody and Musheno 2000; Visintin et al, this volume).

Confirmation bias

Some heuristics and biases are associated particularly with information processing. The first of these is confirmation bias (Nickerson 1998) which is the unconscious interpretation of evidence in light of previous beliefs or convictions, and selective attendance to evidence that confirms one’s prior beliefs. This may be exacerbated in a frontline context characterised by

time constraints, high caseloads and insufficient resources. An example of this would be police officers searching for supporting evidence to back up assumed motive, in effect moving against clients (Wallace 2015). There have been far more studies investigating confirmation bias in citizens or elected officials than among bureaucrats or street-level bureaucrats specifically (see Battaglio et al. 2018). However, we generally expect the following:

Proposition 5: Frontline workers process information selectively, by paying more attention to evidence that confirms their prior beliefs or convictions.

Confirmation bias can lead frontline workers to inaccurately assess cases that do not confirm their prior beliefs or convictions, potentially moving away from or even against clients. However, it can also lead them to privilege some clients by selectively interpreting the information on their case.

Framing

Framing effects are another category of heuristic that influence information processing. Decision-makers can be influenced by irrelevant information in the choice environment ('primes'), by order effects, by language, by anchors, or they may interpret two pieces of statistically equivalent information differently because of their presentation (Slovic et al. 2002). Citizens' reactions to performance information about public services are influenced by the way the information is framed (e.g. James and Moseley 2014; Olsen 2015). Bureaucrats themselves are sensitive to framing effects (Belardinelli et al. 2018; Cantarelli et al. 2018; Feeney 2012; Gilad et al. 2018). However to date there is limited research on how the framing of information provided directly by clients influences the decisions that frontline workers take. Overall, we can derive the following general expectation:

Proposition 6: How frontline workers process information – and their subsequent decisions -

depend partly on how the information is framed and presented by clients.

Priming, for instance, can lead to adverse outcomes for clients if the information presented gives frontline workers irrelevant cues about their identity (e.g. when application files are not anonymised), fostering stereotyping. Three specific framing effects with potential relevance for street-level bureaucrats' work include anchoring, negativity bias, and halo bias.

Anchoring

Anchoring is a cognitive bias whereby an individual is influenced by an initial, or prominent, piece of information when making decisions (Tversky and Kahneman 1974). They are subconsciously influenced by such anchors and fail to 'adjust' sufficiently from these when making subsequent judgements. These anchors may or may not be related to the decision itself, and can be arbitrary. The anchoring effect is 'one of the most reliable and robust findings in experimental psychology' (Kahneman 2011:119), influencing judgements in relation to risk estimates, price evaluation and negotiations (Mussweiler and Strack 2001). Anchors influence decision making amongst frontline public workers and managers in a variety of contexts (Bellé et al 2017, 2018; Cantarelli et al. 2018). Taken together, this suggests the following:

Proposition 7: How frontline workers process information is disproportionately influenced by the first piece of information they view, or by a salient piece of information in the decision-making environment.

For instance, when assessing the level of financial support for which a client may be eligible, a frontline worker could be influenced by noticing the amount of funding allocated on a previous occasion, even if this figure is irrelevant for determining current eligibility. This could work either in favour of or against the client, but in either case may lead to inequities.

Negativity bias

Negativity bias involves placing more weight on negatively framed than on positively framed information. Negativity bias influences the judgments made by citizens, for example about performance information (James and Moseley 2014; Olsen 2015). Similarly, because of negativity bias in the political arena (Nielsen and Moynihan 2017), public employees' attention may be focused disproportionately on low performance or negatively framed information (Holm 2018). We may expect the following about how negativity bias influences the judgments of street-level bureaucrats:

Proposition 8: When processing information provided by clients, frontline workers place more weight on negatively framed information than on positively framed information.

Negativity bias could for instance influence how regulators respond to school reports about pupil performance in contexts that use such inspection systems. Where statistics revealing low performance are contextualised by explanatory comments or supplemented by positive commentary from teachers or boards of governors, regulatory responses may differ to instances when low performance figures are presented in isolation. In systems where there is discretion about how performance is reported or contextualised, schools could be penalised (or rewarded) for the manner in which performance is framed, rather than for the performance itself.

Halo bias

Street-level bureaucrats have been shown in some contexts to exhibit 'halo bias'. This occurs when judgments about one aspect of performance influence judgements of overall performance (Nisbett and Wilson 1977). Halo bias can lead to an inaccurate judgment about

clients' performance. Public employees such as nurses, municipal clerks and public managers have been found to be influenced by such halo effects (Favero et al. 2014; Bellé et al. 2017).

Proposition 9: When processing information, frontline workers sometimes evaluate a client's overall performance based on only one aspect of performance.

Arguably, halo bias becomes problematic if it systematically interacts with another bias, such as the representativeness or affect heuristic. This can lead frontline workers to a systematically incorrect assessment of some types of clients, if their selective assessment is influenced by characteristics that are not directly relevant for performance.

Sunk costs heuristic

The sunk costs heuristic refers to a propensity to continue investing in an approach because of the time or resource one has already put in, regardless of the value of continuing, and reflects our tendency to be loss averse (Kahneman and Tversky 1979). When bureaucrats continue with existing projects that have cost considerable money despite not achieving their objectives, the sunk costs heuristic may be at play. Policy professionals may support and continue projects that are bound to fail or vastly exceed their budgets because of a desire to avoid a feeling of having 'wasting' resources already committed (Banuri et al. 2017). We generally contend that:

Proposition 10: When allocating resources, frontline workers seek to avoid wasting resources that have already been incurred which can lead to a continuation with existing practices regardless of their effectiveness.

The sunk cost heuristic can disadvantage those groups of clients that would benefit from a change of practices, potentially leading frontline workers to systematically move away from such clients.

Status quo bias

Status quo bias refers to the propensity to stick with the current option when confronted with choices which include the status quo, particularly in contexts of uncertainty (Samuelson and Zeckhauser 1988). Governments using behavioral insights in public policy increasingly change defaults in light of status quo bias, in order to elicit desired social outcomes, in fields such as retirement savings and organ donation. Public administration scholars have reported the presence of status quo bias amongst citizens (Moseley and Stoker 2015; Gilke et al. 2016), street-level bureaucrats and policy makers (Bellé et al. 2018; Schpaizman 2017). Status quo bias may become more pronounced as the number of choices increases (Gilke et al. 2016; Bellé et al. 2018). Thus, we suggest the following:

Proposition 11: When deciding on allocating sanctions or resources, frontline workers generally prefer the current state of how things are done, thus resisting new criteria, procedures, technologies, or other attempts at reforms. In complex decision environments where multiple options are present, the default will become more sticky.

Status quo bias, if occurring systematically, will disadvantage client groups that would benefit from a change in practice.

Discussion

We can thus identify several factors that should be of behavioral relevance for how frontline workers assess information and interact with clients in order to allocate sanctions and resources. First, (*perceived*) *attributes of clients* influence how frontline workers interact with clients and allocate resources or sanctions to them: stereotypes about clients as well as their similarity to the frontline worker. Moreover, *attributes of frontline workers* influence how

they allocate resources and sanctions and process information: the experiences of frontline workers, their emotional responses to clients, their prior beliefs and convictions, their risk aversion, their preference for the status quo, and their own selectivity in perceiving information. Finally, how frontline workers process information depends on *how the information is framed and presented* to them.

These are all “human” factors not to be found in the letters of the policies that frontline workers are traditionally expected to implement faithfully. Instead, they emerge from the contexts of bounded rationality within which frontline workers operate. However, it would be a mistake to dismiss these insights merely as individual-level “noise”. Instead, a behavioral perspective points to predictable patterns relating to the importance of identity, emotions, and communication for the ways in which public policies eventually translate into practice. The behavioral perspective highlights that street-level discretion can lead frontline workers to work in favour of clients. For example, there is a role for emotions and empathy and the potential to communicate and present information to frontline workers in ways that achieve better outcomes (Jensen and Pedersen 2017; Visintin et al. this volume). Empathy and emotional resonance with clients can lead frontline workers to individually or collectively diverge from policies in ways that benefit clients, for instance, disadvantaged groups (Gofen 2014).

At the same time, this perspective shows us that such human factors can lead to problematic outcomes for certain groups of clients, and to deviance from democratically formulated policies. Arguably, the use of *heuristics* is both inevitable and often useful in street-level decisions. Whether or not a *systematic bias* in frontline implementation is ultimately problematic depends on the societal outcomes it produces. Relating to the model we presented in figure 1, the question is how individual-level behavior in response to heuristics aggregates into social outcomes. While it is difficult to generally predict these

outcomes, biases in frontline implementation arguably may require mitigation in two situations. First, biases can lead to *social inequity* when they lead frontline workers to move systematically (and collectively) away from or even against some clients, and systematically toward others. For example, affinity bias, the affect or representativeness heuristic can make frontline workers discriminate against certain clients. This can lead, for instance, to racial disparities in policing (Epp et al. 2017; Hong 2017) or unfair applications of welfare policies (Pedersen et al. 2018; Thomann and Rapp 2018), with potentially far-reaching implications for society (see Schneider and Ingram 1993). Second, some biases can systematically contribute to inefficient or ineffective policy delivery. For instance, confirmation bias and several framing effects, such as anchoring, negativity bias, or halo bias, can systematically lead to an inappropriate processing of information by frontline workers. Moreover, the sunk cost heuristic and status quo bias can contribute to ineffective policies and procedures, unnecessary administrative procedures, and misguided bureaucratic decisions (Jilke et al. 2018; Moynihan et al. 2015).

The model we have presented makes a new contribution by providing a more robust understanding of the role of biases and heuristics in shaping policy outcomes at the frontline and provides a first step towards a broader behavioral theory of frontline implementation. Such a theory would then also need to include more systematically contextual and organizational factors, and comprehensively specify underlying assumptions about the laws governing policy implementation. The propositions we have developed should now be subject to empirical scrutiny and testing. While we have cited evidence pertaining to the existence of several heuristics and biases amongst bureaucrats, it is relatively rare for these to be examined in the context of frontline workers' actual interactions and day-to-day work with citizens. We therefore hope to have made a modest contribution towards developing a research agenda for further work in this area.

Implications and conclusion

Our review of the behavioral literature allows us to broadly identify three sets of behavioral factors influencing street-level action: perceived attributes of the clients, attributes of the frontline worker, and the presentation of information. Arguably, if our propositions are corroborated there will be broader implications for questions of equity and representation, accountability, and policy design and management at the street-level.

The behavioral perspective highlights how important *identity* is for the ways in which frontline workers treat clients. Frontline workers prefer clients that are similar to them, and they resort to stereotypes to classify clients—with consequences for social equity, democracy, and the rule of law (Epp et al. 2017). Arguably, these insights reinforce the importance of passive and active representation, so that the interactions between clients and bureaucrats do justice to the diversity of identities in the population (Akram 2018; Hong 2017; Riccucci and Van Ryzin 2017). Moreover, unconscious stereotypes and resulting discrimination may require strategies to mitigate bias in frontline workers. Bias mitigation to address these kinds of biases and others highlighted in this article can be achieved in several ways, such as through training, the use of debiasing cues, ‘re-biasing’ (e.g. nudging) which entails countering one cognitive bias with another, and deliberation exercises to create more space for reflection before decisions are taken (Andersen and Gul 2018; Banuri et al. 2017; Brest 2012; Cantarelli et al. 2018; Tetlock and Mitchell 2009; Visintin et al. this volume).

Second, the behavioral perspective enriches our traditional understanding of *street-level accountability* (Thomann et al. 2018a). BPA tells us how information can be presented in ways that can ensure frontline workers adhere to the relevant criteria for processing the information and taking decisions (de Boer et al. 2018; Paolini et al. 2009). How policies are framed and communicated matters for how clients and frontline workers respond and adhere to them. Research knowledge about the effects of information framing and presentation on

street-level bureaucrats' decision-making can be used to avoid erroneous or biased judgements. Moreover, how frontline workers exercise accountabilities within social relationships with clients, peers, customers, and as “political animals” (Hall et al. 2017; Thomann et al. 2018a) will depend, amongst other things, on emotional factors, their own experiences and, again, identity. Client-oriented forms of accountability thus become more likely when the frontline worker relates to the client emotionally or in terms of identity.

The utility of our model depends not least on its ability to identify situations when broader societal outcomes are affected, and then it is incumbent to understand the reasons, and find ways to tackle such situations. For improving policy outcomes, policy designers and managers need to capitalise on these factors in order to make frontline workers move toward clients, rather than against them, work toward overarching policy goals, and problem-solve independently at the frontline. Frontline workers themselves can benefit from an awareness of the factors shaping their decisions. At the same time, BPA also highlights potential limitations of reforming street-level bureaucracies, since frontline workers, like other decision-makers, process information selectively, are risk adverse, and prefer the status quo over change. Ideally, these insights can generate a behaviorally informed environment of “better regulation”, policy and organizational design and management, where the “human side” of frontline policy implementation is recognised (Weaver 2014). For example, the fact that many biases come into play in contexts of exceedingly high performance pressures and caseloads could inform the allocation of resources to the public sector (Moynihan et al. 2015; Soss et al. 2011).

A better understanding of cognitive bias in street-level bureaucracy contexts can inform the design of effective bias mitigation strategies (Banuri et al. 2017; Battaglio et al. 2018; Brest 2012; Cantarelli et al. 2018; Hallsworth et al. 2018), which in turn can help ensure more equitable treatment of clients, and more efficient and effective policy

implementation. Part of this agenda should include attempts to understand the conditions under which heuristics and biases may improve, or be determinantal toward, decision-making at the frontline. At the very least, heightened knowledge about the operation of biases and heuristics in this context can help us gain a more systematic understanding of the role of street-level bureaucrats in shaping policy outcomes for clients and society more widely. We hope our article takes a step in this direction, by specifying several propositions that consider how heuristics and biases come into play during processes of frontline policy implementation and consequently shape policy outcomes.

References

- Akram, S. (2018) 'Representative Bureaucracy and Unconscious Bias: Exploring the Unconscious Dimension of Active Representation', *Public Administration*, 96(1): 119–33.
- Andersen, S. C., and Guul, T. S. (2018) 'Reducing Minority Discrimination at the Front Line—Combined Survey and Field Experimental Evidence', *Journal of Public Administration Research and Theory*, 29(3): 429-444.
- Banuri, S., Dercon, S. and Gauri, V. (2017) *Biased Policy Professionals*. World Bank Group, Policy Research Working Paper 8113.
- Battaglio, P.R., Belardinelli, P., Bellé, N. and Cantarelli, P. (2018) 'Behavioral Public Administration ad fontes: A Synthesis of Research on Bounded Rationality, Cognitive Biases, and Nudging in Public Organizations', *Public Administration Review*, 1-17.
- Belardinelli, P., Bellé, N., Sicilia, M. and Steccolini, I. (2018) 'Framing Effects under Different Uses of Performance Information: An Experimental Study on Public Managers', *Public Administration Review*, 78(6): 841-851.
- Bellé, N., Cantarelli, P. and Belardinelli, P. (2017) 'Cognitive Biases in Performance Appraisal: Experimental Evidence on Anchoring and Halo Effects With Public Sector Managers and Employees', *Review of Public Personnel Administration*, 37(3): 275-294.
- Bellé, N., Cantarelli, P. and Belardinelli, P. (2018) 'Prospect Theory Goes Public: Experimental Evidence on Cognitive Biases in Public Policy and Management Decisions', *Public Administration Review*, 78(6): 828-840.
- Brest, P. (2012) 'Quis custodiet ipsos custodiet? Debiasing the Policy Makers Themselves', in E. Shafir (ed), *The Behavioural Foundations of Public Policy*. Princetown University Press. pp. 481-493.
- Cantarelli, P., Bellé, N., and Belardinelli, P. (2018) 'Behavioral Public HR: Experimental

Evidence on Cognitive Biases and Debiasing Interventions’, *Review of Public Personnel Administration*, 1-26.

Cohen, N., and Klenk, T. (2019) ‘Policy re-design from the street-level’, in P.H. Hupe (ed), *Research Handbook on Street-Level Bureaucracy: The Ground Floor of Government in Context*, London, Edward Elgar. London, Edward Elgar Publishing.

Coleman, J. S. (1990) *Foundations of social theory*, Cambridge, MA: Belknap Press of Harvard University Press.

de Boer, N. (2018) ‘Street-level enforcement style: A multidimensional measurement instrument’, *International Journal of Public Administration*, 42(5): 1-12.

de Boer, N., Eshuis, J. and E.H. Klijn (2018) ‘Does Disclosure of Performance Information Influence Street-Level Bureaucrats’ Enforcement Style?’, *Public Administration Review*, 78(5): 694-704.

Epp, C.R., Maynard-Moody, S. and Haider-Markel, D. (2017) ‘Beyond Profiling: The Institutional Sources of Racial Disparities in Policing’, *Public Administration Review* 77(2): 168-178.

Ewert, B., Loer, K. & Thomann, E. ‘Beyond nudge. Advancing the state-of-the-art of Behavioural Public Policy and Administration’. *Policy & Politics*, this volume.

Favero, N., Meier, K.J. and O’Toole, L.J. Jr. (2014) ‘Goals, Trust, Participation, and Feedback: Linking Internal Management with Performance Outcomes’, *Journal of Public Administration Research and Theory* 26(2): 327–43.

Feeney, M.K. (2012) ‘Organizational Red Tape: A Measurement Experiment’. *Journal of Public Administration Research and Theory*, 22(3): 427–44.

Folley, M. and Williamson, S. (2019) ‘Managerial Perspectives on Implicit Bias, Affirmative Action, and Merit’, *Public Administration Review*, 79(1): 35-45.

Gigerenzer, G. (2016) 'Towards a Rational Theory of Heuristics'. In R. Frantz and L. Marsh (eds), *Minds, Models and Milieux, Archival Insights into the Evolution of Economics*, London. Palgrave Macmillan.

Gilad, S, Ben-Nun Bloom, P. and Assouline, M. (2018) 'Bureaucrats' Processing of Organizational Reputation Signals', *Journal of Behavioral Public Administration*, 1(1).

Gofen, A. (2014) 'Mind the gap: Dimensions and influence of street-level divergence'. *Journal of Public Administration Research and Theory*, 24(2): 473–493.

Grimmelikhuijsen, S., Jilk, S, Olsen, A.L. and Tummers, L.G. (2017) 'Behavioral public administration: Combining insights from public administration and psychology'. *Public Administration Review*, 77: 45-56.

Hall, A. T., Frink, D. D., and Buckley, M. R. (2017) 'An accountability account: A review and synthesis of the theoretical and empirical research on felt accountability', *Journal of Organizational Behavior*, 38(2), 204-224.

Hallsworth, M. Egan, M., Rutter, J. and McCrae, Y. (2018) *Behavioural Government: Using behavioural science to improve how governments make decisions*. London, Behavioural Insights Team.

Harrits, G. S. (2019) 'Stereotypes in Context: How and When Do Street-Level Bureaucrats Use Class Stereotypes?', *Public Administration Review*, 79(1), 93-103.

Haynes, L.C., Green, D.P., Gallagher, R., John, P. and Torgerson, D.J. (2013) 'Collection of Delinquent Fines: An Adaptive Randomized Trial to Assess the Effectiveness of Alternative Text Messages', *Journal of Policy Analysis and Management*, 32(4): 718–30.

Holm, J.M. (2018) 'Successful Problem Solvers? Managerial Performance Information Use to Improve Low Organizational Performance'. *Journal of Public Administration Research and Theory*, 28(3): 303–20.

Hong, S. (2017) 'Black in blue: Racial profiling and representative bureaucracy in policing revisited', *Journal of Public Administration Research and Theory* 27(4): 547-561.

James, O. and Moseley, A. (2014) 'Does performance information about public services affect citizens' perceptions, satisfaction, and voice behaviour? Field experiments with absolute and relative performance information', *Public Administration*, 92(2): 493-511.

James, O., Gilke, S. R., and Van Ryzin, G. G. (2017) 'Behavioural and experimental public administration: Emerging contributions and new directions', *Public Administration*, 95(4): 865-873.

Jensen, D.C. and Pedersen, L.B. (2017) 'The Impact of Empathy—Explaining Diversity in Street-Level Decision-Making', *Journal of Public Administration Research and Theory*, 27 (3): 433–449.

Jilke, S., Van Ryzin, G.G and Van de Walle, S. (2016) 'Responses to Decline in Marketized Public Services: An Experimental Evaluation of Choice Overload', *Journal of Public Administration Research and Theory*, 26(3): 421–32.

Jilke, S. and Tummers, L. (2018) 'Which Clients are Deserving of Help? A Theoretical Model and Experimental Test', *Journal of Public Administration Research and Theory*, 28(2): 226-238.

Jilke, S., Van Dooren, W. and Tummers, L. (2018) 'Discrimination and Administrative Burden in Public Service Markets: Does a Public-Private Difference Exist? *Journal of Public Administration Research and Theory*, 28 (3): 423–439.

Kahneman, D. Slovic, P. and Tversky, A. (eds) (1982) *Judgment under uncertainty: Heuristics and biases*. Cambridge, Cambridge University Press.

Kahneman, D. and Tversky, A. (1979) 'Prospect Theory: An Analysis of Decision under Risk'. *Econometrica*, 47(2): 263–91.

- Kahneman, D. (2011) *Thinking, Fast and Slow*. London, Penguin.
- Karens, R., Eshuis, J. Klijn, E-H. and Voets, J. (2016) ‘The Impact of Public Branding: An Experimental Study on the Effects of Branding Policy on Citizen Trust’. *Public Administration Review*, 76(3): 486–94.
- Lee, D.S. and Park, S. ‘Rules versus Discretion? Foundations of Bureaucratic Decision Making in Implementation of Policy Change’, *Policy & Politics*, this volume.
- Lipsky, M. (1980) *Street-Level Bureaucracy: The Dilemmas of the Individual in Public Services*. New York, Russell Sage Foundation, xi-80.
- Loyens, K. (2015) ‘Law enforcement and policy alienation: Coping by labour inspectors and federal police officers’, in P. Hupe, M. Hill & A. Buffat (eds), *Understanding Street-level Bureaucracy*. Bristol, Policy Press.
- May, P.J., and Wood, R.S. (2003) ‘At the Regulatory Front Lines: Inspectors’ Enforcement Styles and Regulatory Compliance’. *Journal of Public Administration Research and Theory* 13(2): 117–39.
- Maynard-Moody, S., and Musheno, M. (2000) ‘State agent or citizen agent: Two narratives of discretion’, *Journal of Public Administration Research and Theory*, 10(2): 329-358.
- Maynard-Moody, S. and Portillo, S. (2010) ‘Street-Level Bureaucracy Theory’. In R. Durant (ed.) *Oxford Handbook of American Bureaucracy*. Oxford, Oxford University Press. pp. 252–77.
- Moseley, A. and Stoker, G. (2015) ‘Putting Public Policy Defaults to the Test: The Case of Organ Donor Registration’, *International Public Management Journal* 18(2): 246–64.
- Moynihan, D., Herd, P. and Harvey, H. (2015) ‘Administrative Burden: Learning, Psychological, and Compliance Costs in Citizen-State Interactions’, *Journal of Public Administration Research and Theory* 25(1): 43–69.

- Mussweiler, T. & Strack, F. (2001) 'The semantics of anchoring', *Organizational Behavior and Human Decision Processes*, 86: 234-255.
- Nielsen, P.A., and Moynihan, D. (2017) 'How Do Politicians Attribute Bureaucratic Responsibility for Performance? Negativity Bias and Interest Group Advocacy', *Journal of Public Administration Research and Theory*, 27(2): 269–83.
- Nickerson, R. S. (1998) 'Confirmation bias: A ubiquitous phenomenon in many guises'. *Review of General Psychology*, 2: 175–220.
- Nisbett, R. E., and Wilson, T. D. (1977) 'The halo effect: Evidence for unconscious alteration of judgments', *Journal of Personality and Social Psychology*, 35, 250-256.
- Nørgaard, A.S. (2018) 'Human Behaviour Inside and Outside the Bureaucracy: Lessons from Psychology', *Journal of Behavioral Public Administration*, 1(1): 1-16.
- Olsen, A.L. (2015) 'Citizen (Dis)satisfaction: An Experimental Equivalence Framing Study', *Public Administration Review*, 75(3): 469–78.
- O'Toole Jr, L.J. (2004) "The theory–practice issue in policy implementation research", *Public Administration*, 82(2): 309-329.
- Paolini, S., Crisp, R. J., and McIntyre, K. (2009) 'Accountability moderates member-to-group generalization: Testing a dual process model of stereotype change', *Journal of Experimental Social Psychology*, 45(4): 676-685.
- Pedersen, M.J., Stritch, J.M. and Thuesen, F. (2018) 'Punishment on the Frontlines of Public Service Delivery: Client Ethnicity and Caseworker Sanctioning Decisions in a Scandinavian Welfare State', *Journal of Public Administration Research and Theory*, 28(3): 339–354.
- Pronin, E., and Schmidt, K. (2013) 'Claims and denials of bias and their implications for policy'. In E. Shafir (ed), *The Behavioral Foundations of Public Policy*, Princeton, NJ, Princeton University Press. pp. 195-216.

- Raaphorst, N, and Van de Walle, S. (2018) 'A signaling perspective on bureaucratic encounters: How public officials interpret signals and cues', *Social Policy and Administration*, 52(7): 1367-1378.
- Riccucci, N. M., and Van Ryzin, G. G. (2017) 'Representative bureaucracy: A lever to enhance social equity, coproduction, and democracy', *Public Administration Review*, 77(1): 21-30.
- Rutz, S., Mathew, D., Robben, P., and de Bont, A. (2017) 'Enhancing responsiveness and consistency: Comparing the collective use of discretion and discretionary room at inspectorates in England and the Netherlands', *Regulation and Governance*, 11(1): 81-94.
- Sætren, H. (2014) 'Implementing the third generation research paradigm in policy implementation research: An empirical assessment', *Public Policy and Administration* 29 (2): 84-105.
- Samuelson, W. and Zeckhauser, R. (1988) 'Status Quo Bias in Decision Making', *Journal of Risk and Uncertainty* 1(1): 7-59.
- Schneider, A.L. and Ingram, H.M. (1993) 'Social Construction of Target Populations: Implications for Politics and Policy', *The American Political Science Review* 87(2): 334-347.
- Simon, H. (1978) 'Rationality as Process and as Product of Thought', *The American Economic Review*, 68(2): 1-16.
- Slovic, P., Finucane, M. L., Peters, E., and MacGregor, D. G. (2002) 'The affect heuristic', in T. Gilovich, D. Griffin, and D. Kahneman (eds), *Heuristics and biases: The psychology of intuitive judgment*, New York, Cambridge University Press. pp. 397-420.
- Soss, J., Fording, R. and Schram, S.F. (2011) 'The organization of discipline: From performance management to perversity and punishment.' *Journal of Public Administration Research and Theory* 21.suppl_2: i203-i232.

- Tetlock, P.E., and Mitchell, G. (2009) ‘Implicit bias and accountability systems: What must organizations do to prevent discrimination?’, *Research in Organizational Behavior* 29: 3-38.
- Thomann, E. and Rapp, C. (2018) ‘Who Deserves Solidarity? Unequal Treatment of Immigrants in Swiss Welfare Policy Delivery’, *Policy Studies Journal* 46(3): 531-552
- Thomann, E., Hupe, P. and Sager, F. (2018a) ‘Serving Many Masters: Public Accountability in Private Policy Implementation’, *Governance* 31(2): 299–319.
- Thomann, E. van Engen, N. and L. Tummers. (2018b) ‘The necessity of discretion: a behavioral evaluation of bottom-up implementation theory’, *Journal of Public Administration Research and Theory*, DOI: 10.1093/jopart/muy024.
- Tummers, LG, Bekkers, V., Vink, E. and Musheno, M. (2015) ‘Coping During Public Service Delivery: A Conceptualization and Systematic Review of the Literature’, *Journal of Public Administration Research and Theory*, 25(4): 1099-1126.
- Tummers, L.G. (2011) ‘Explaining the willingness of public professionals to implement new policies: A policy alienation framework’. *International Review of Administrative Sciences*, 77: 55-81.
- Tummers, L.G. and Bekkers, V. (2014) ‘Policy implementation, street-level bureaucracy, and the importance of discretion’, *Public Management Review*, 16: 527-47.
- Tummers, L., Bekkers, V., van Thiel, S., and Steijn, B. (2015) ‘The effects of work alienation and policy alienation on behavior of public employees’, *Administration and Society*, 47(5): 596-617.
- Tversky, A. and Kahneman, D. (1974) ‘Judgement Under Uncertainty: Heuristics and Biases’, *Science*, New Series, 185 (4157): 1124-1131.
- van Loon, N. M. and Jakobsen, M.L. (2018) ‘Connecting governance and the front lines: How work pressure and autonomy matter for coping in different performance regimes’, *Public*

Administration, 96(3): 435-451.

Ventriss, C., Perry, J. L., Nabatchi, T., Milward, H. B., and Johnston, J. M. (2019) 'Democracy, Public Administration, and Public Values in an Era of Estrangement', *Perspectives on Public Management and Governance*, 2(4): 275–282.

Visintin, A. Bonvin, J-M. Varone, F., Butera, F., Lovey, M. and Rosenstein, E. 'Nudging Street-Level Bureaucrats into Effective Decisions on Requests for Welfare Benefits: A Field Experiment to Promote a Life-Course Mindset', *Policy and Politics*, this volume.

Wallace, W.A. (2015) *The Effect of Confirmation Bias on Criminal Investigative Decision Making*. Doctoral Dissertation. Walden University.

Weaver, R. K. (2014) 'Compliance regimes and barriers to behavioral change', *Governance*, 27(2): 243-265.

Welch, D.D. (1997) 'Ruling with the Heart: Emotion-Based Public Policy', *Southern California Interdisciplinary Law Journal*, 6 (1): 55-88.

White, A. R., Nathan, N.L., Faller, J.K. (2015) 'What Do I Need to Vote? Bureaucratic Discretion and Discrimination by Local Election Officials', *The American Political Science Review*, 109 (1): 129-142.

Winter, S. (2012) 'Implementation perspectives: Status and reconsideration'. In B.G. Peters and J. Pierre (eds), *The SAGE handbook of public administration*, Thousand Oaks, CA/London: Sage. pp. 265–278.

Zacka, B. (2019) 'Street-Level Bureaucracy and Democratic Theory', in P.H. Hupe (ed), *Research Handbook on Street-Level Bureaucracy: The Ground Floor of Government in Context*, London, Edward Elgar.

