Intricacies of back-office

Forward- and backward-looking recipes as modelling tools in administration

Sari Yli-Kauhaluoma and Mika Pantzar
Consumer Society Research Centre, University of Helsinki, Helsinki, Finland

Received 29 January 2016
Revised 15 April 2016
Accepted 26 April 2016

Abstract

Purpose – The purpose of this paper is to examine how back-office service staff cope with the intricacies of administrative work.

Design/methodology/approach – The paper applies the research approach of "at-home ethnography" in a university back-office. The primary method of data collection was participant listening in the field, either in formal interviews or casual conversations. Photography helped the authors to zoom the conversation in to specific artefacts in administrative offices.

Findings – The study identifies both forward- and backward-looking recipes as essential administrative tools that back-office staff develop and use to handle intricacies that emerge in their daily work. Forward-looking recipes are based on anticipatory cognitive representations, whereas backward-looking recipes are based on experiential wisdom. The study elaborates on the different kinds of modelling practices that back-office service staff engage in while building and applying these two different kinds of recipes.

Practical implications – The recipes support administrators in knowledge replication and thus help avoid interruptions, reduce uncertainty, and produce consistency in administrative processes.

Originality/value – In contrast to existing studies of formal bureaucracies, the study provides a unique empirical account to show how back-office service staff cope with the multiple intricacies existing in current office environments. The study shows how recipes as models contribute to stabilizing or even routinizing work processes in complex administrative situations.

Keywords Administrative work, Back-office intricacy, Backward-looking recipe, Forward-looking recipe, Knowledge replication, Modelling practice

Paper type Research paper

Introduction

The usual image of the well-ordered administrative world based on fixed and stable rules is essentially "an optical illusion" for uninformed outsiders; instead, administrative work is characterized by "complexity, indeterminacy, and the necessity to act on the situation at hand" (Wagenaar, 2004, pp. 643, 651). The question of how back-office service staff deal with the intricacies of administrative work is interesting and still somewhat unclear (cf. Cook and Wagenaar, 2012). It is the focus of this study. The study examines in what way back-office service staff handle various intricate administrative situations when such situations are novel and uncertain and there are only incomplete and partial legal and organizational formal procedures available. We focus particularly on administrative tools that may help back-office staff to "perform [their] tasks more efficiently, speedily, or both" (Gray, 2007, p. 498). Our aim, then, is to explore in more detail how back-office staff develop and use administrative tools in order to handle the complex administrative tasks emerging in their everyday work.

Based on an empirical analysis of administrative work in a university back-office, the study identifies specific types of models, i.e. recipes (cf. Baden-Fuller and Morgan, 2010) as the essential administrative tools that back-office staff build up and apply to various

Journal of Organizational Ethnography
Vol. 5 No. 2, 2016
pp. 167-183

2046-6749
DOI 10.1108/JOE-01-2016-0005

intricacies of their daily work. The study identifies two different types of such recipes, forward- and backward-looking recipes (cf. Gavetti and Levinthal, 2000), and elaborates on the different modelling practices (cf. Morgan, 2012) that back-office service staff engage in while building and applying these recipes. On the one hand, administrators build up and use forward-looking recipes to provide support for what they presume will be the same administrative tasks that they anticipate will frequently recur in the future. On the other hand, administrators apply backward-looking recipes based on occasionally emerging similar kinds of administrative tasks to those conducted in the past. The study elaborates on how administrators in a back-office continuously produce two different types of recipes as models and important administrative tools in their ongoing and situated action. These different recipes help administrators to replicate knowledge (Baden-Fuller and Winter, 2007) in order to avoid interruptions, reduce uncertainty, and produce consistency in administrative processes.

Intricacies of administrative work

The nature of administrative work is complex and overwhelmingly detailed (cf. Wagenaar, 2004; Cook and Wagenaar, 2012). The intricacy and complexity of administrative work can be traced to various sources. First, contemporary back-office staff increasingly interact with various information and communication technologies, leading to constant demand for mutual adjustment and adaptation of the social and technological systems in organizations (cf. Eriksson-Zetterquist *et al.*, 2009). Second, in recent years all administrative functions in various kinds of organizations, including universities, have faced growing demands for rationalization and modernization, resulting in an "intensification of work, reduced resources, and increased expectations" (Szekeres, 2006, p. 143) which administrators have to tackle daily.

From the perspective of this study, one of the key complexities of administrative work emerges from its content. According to Wagenaar (2004, p. 649) "everyday administrative situations are characterized by novelty, deep uncertainty, and the requirement to act on the situation, to find some kind of resolution that is both feasible and acceptable". This recognition has many fundamental elements in it. The first deals with the notion of novelty. The question of what makes tasks seem old (alike) or novel (different) is far from simple. In theories of categorization it has been assumed that classification of new tasks is based on their similarity to known examples or to a category prototype (Medin *et al.*, 1990, p. 64). This matches the *Oxford English Dictionary*'s definition of a novelty as "something new, not previously experienced, unusual, or unfamiliar". Economics and sociology, for example, have approached novelties primarily as experiential phenomena and only secondarily as historical or material changes. In an organizational context, it seems too narrow to assume that new tasks are defined only as experiential phenomena. Practice-based views (e.g. Orlikowski, 2000, 2006) would emphasize that novel tasks are tasks that either have new elements, such as symbolic meanings, skill requirements, or material artefacts, or alternatively new ways within which old elements are integrated. In other words, the underlying basis dissimilarity (i.e. novelty) of tasks is either that the components of the task are new or that the ways these components are linked is novel.

Wagenaar's (2004) second recognition of administrative tasks brings up the issue of uncertainty. He discusses one of the key tasks of administrators, i.e. rule application, and emphasizes how rules, such as legal orders or formal organizational instructions, always remain only incomplete or partial. Cook and Wagenaar (2012) continue that

sometimes even the formulation of the administrative problem may be unclear or disputable, which makes it even more difficult to determine which rule to follow in the situation at hand. Regarding the application of rules, Barnes (2001, p. 26) notes that "rules can never be sufficiently informative or well exemplified to keep instances of rule-following behaviour relevantly identical in all the diverse situations wherein rules are followed". As Wagenaar (2004) suggests, administrative tasks then constantly contain an improvisational flavour, but importantly, the related improvisation is by no means random. Instead, as he emphasizes, administrators use rules to help, for instance, in structuring the administrative situation or issue at hand, thus suggesting what is possible and feasible to do.

The third fundamental element of administrative work is the requirement to act on the situation (Wagenaar, 2004). Cook and Wagenaar (2012) emphasize that administrators are relentlessly forced to harness the uncertainty and other complexities of administrative situations and to produce answers to the question of what to do even if administrative problems or solutions may involve ambiguities. Importantly, as Wagenaar (2004) notes, the necessity to act on the situation does not imply that anything goes, but rather that administrators constantly have to ponder what is the right thing to do in each particular administrative situation at hand. As Boll (2015) shows, this is a constant balancing act. In administrative tasks the requirement to act on the situation also refers to the necessity to do things according to the calendar and the clock. Acting in timely fashion in administrative situations to keep and meet deadlines is necessary to create "smooth, swift, and thrifty" (Rämö, 2002, p. 572) flows of administrative services.

Finally, the fourth task of administrators is to produce resolutions that are both "feasible (it works) and acceptable (it will hold up when challenged in court)" (Wagenaar, 2004, p. 646). According to Wagenaar (2004), these resolutions respond to the question of rightness in a particular administrative situation and they emerge first and foremost from an understanding of administrative situations based on experience of actual administrative issues in a particular organization. This understanding explains why a particular rule is appropriate in a particular administrative context. Wagenaar (2004, p. 644) continues that this kind of understanding is collectively produced "in a dialectical interaction with the particulars of the situation at hand as is embedded in its wider organizational, social, and cultural context". Taken together, the well-ordered administrative world based on fixed and stable rules is then only "an optical illusion" (Wagenaar, 2004, p. 651). The most important question therefore is how back-office service staff go about dealing with the complexities of their work.

One important answer that Cook and Wagenaar (2012) provide to this question concerns the interaction of administrators with the range of mundane, sometimes almost invisible material artefacts that they continuously manipulate or act on at work. We regard all these various material artefacts in administration as common tools that help administrative staff "to perform tasks more efficiently, speedily, or both" (Gray, 2007, p. 498). The material properties of particular tools may provide either constraints or affordances at work, depending on the specific situated practices in which they are applied (e.g. Leonardi and Barley, 2008). Importantly, a tool is essentially useless if one lacks understanding of the conditions of activity and the ways it is used in the situation at hand (e.g. Thurk and Fine, 2003; Miettinen, 2006). Moreover, in practice tools are produced every day and this has important consequences for the daily functioning of organizations (Orlikowski, 2000).

Recipes as tools: their development and use practices

Recent research has recognized the importance of different kinds of models as essential tools in office work, for instance, in financial market analysis (cf. MacKenzie, 2003), strategic management (cf. Baden-Fuller and Morgan, 2010), or consultancy (cf. Collins, 2004). Importantly, models do not necessarily apply from one context to another, but instead, users often manipulate and modify the models for their own purposes (Collins, 2004). Moreover, models are found not only to describe but also to participate in producing the setting in which they are applied (cf. MacKenzie, 2003; Doganova and Eyquem-Renault, 2009; Pollock and Williams, 2009). This means that models "are not just passive 'guiding principles', setting the boundaries of what can be done and what cannot be done, as scholars have argued so far, but they contribute to shaping actual processes" at work (D'Adderio, 2008, p. 775). The materiality of models as tools at work then also matters (cf. Orlikowski, 2006). In back-offices, models may have various kinds of material features and exist in diverse locations. The significance of the materiality of models lies particularly in the fact that materiality is linked to "their capacity for circulation both in time and space, and also among actors" (Doganova and Eyquem-Renault, 2009, p. 1561).

Existing research has identified various types of models (cf. Baden-Fuller and Morgan, 2010), but in the context of this study, administrative office work, a more thorough exploration of recipes seems particularly relevant. According to their definition, recipes "lie between principles – general theory – and templates – exact and exhaustive rules" – and "demonstrate or give advice about how to do something so that the results will come out right" (Baden-Fuller and Morgan, 2010, p. 166). From the perspective of administrative work this definition has two particularly important notions. The first is related to the opening part of the definition and deals with the concepts of principles and templates. Baden-Fuller and Winter (2007) have elaborated these concepts in the context of knowledge replication: a highly relevant issue in administration, where the question of task similarity or dissimilarity is constantly present (Wagenaar, 2004). According to Baden-Fuller and Winter (2007), principles are about reasoning and causal understanding. Principles explain why something works and the reasons why a task should be done in a particular way. In comparison, templates are working examples of the tasks to be learned. Instead of focusing on the question of why, templates contain detailed step-by-step instructions and give advice on how to accomplish a task. Both principles and templates take a position with regard to the task similarity issue but from different perspectives. The definition of recipes lying between principles and templates then suggests a combination of an explanation of the why and how of knowledge in question. This is also where the potential advantage of recipes might lie in relation to novel or uncertain tasks that administrators have to deal with.

The second interesting notion emerging from the definition of the recipe is related more to its latter part. As noted earlier, another difficulty that administrators confront is that they constantly have to ponder what is the right or fitting thing to do in each particular administrative situation (Wagenaar, 2004). This is where recipes can be useful because their role is to provide advice to produce appropriate results. In sum, recipes have the capacity to act as a supportive tool for administrators to carry out their daily tasks. The question therefore is whether administrators use recipes as tools and as ways to harness the intricate administrative situations that they confront.

Importantly, however, recipes, like any other models, do not just simply emerge or make themselves (Boumans, 1999), but rather, are actively created and used for specific purposes. The active process of making and using recipes, which we describe as

modelling, can be a demanding job, requiring creative (cf. Svejenova *et al.*, 2010), imaginative (cf. Frigg, 2010), and intuitive abilities (Morgan, 2012), and in some cases even the ability to record and document processes (Lazaric and Denis, 2005). In the process of making recipes, Boumans (1999) has identified two critical elements: ingredients and integration. According to Boumans (1999), the process of recipe making begins by choosing the key elements or ingredients for a recipe and then integrating these elements together to give form to an idea, insight, intuition, or knowledge (Morgan, 2012). Relevant to this kind of process is both recognizing the most significant pieces of knowledge and connecting these together. One of the most important issues is the question of what will fit together and how (Morrison and Morgan, 1999). In administration, this issue seems particularly important, since administrators often need extensive and detailed information about the specificities of administrative processes (cf. Lynn *et al.*, 2000), and on subject matters requiring administrative implementation (cf. Keiser, 2010). In some cases, for instance in confrontation of novel or uncertain processes or matters, recipe-making may also require the ability to visualize similarities among matters (Morgan, 2012) and to perceive similarity relationships (Simpson, 2011) between the thing that forms the basis of a recipe and the thing that is to be dealt with or processed according to a recipe. Frequently, the making of a recipe requires a process of trial and error (cf. Boumans, 1999; Sosna *et al.*, 2010). Moreover, giving form to knowledge in a recipe also involves knowledge codification, a process of turning implicit understandings into a materialized form. Zollo and Winter (2002) suggest that the importance of knowledge codification even increases in cases of rare and novel tasks. Recipes are seldom available readily complete, but rather are created in a process of various iterative cycles (cf. Mason and Spring, 2011) and recursive inscription (Lanzara and Patriotta, 2007).

With regard to modelling, in addition to making recipes, it is also important to gain understanding of how recipes are put to use. Remarking more generally about different kinds of models, including recipes, Simpson (2011, p. 196) notes that "models are models because of how they are used"; this underscores that it is the using of the model that actually makes the model. Morrison and Morgan (1999, p. 32) express similar ideas in a different way by noting that "models can fulfil many functions, but they generally perform these functions by not being built, but by being used. They must be put to work". One of the most important functions of various kinds of models recognized thus far is that they are used for different kinds of enquiries (cf. Morgan, 2012). More particularly, in situations of uncertainty, tools such as (meta-) models are needed "to understand the conditions of activity, give new meaning to its elements, and to develop new ends-in-view and alternative forms of activity" (Miettinen, 2006, p. 403). The process of enquiry, with the help of models such as recipes, can take place in multiple ways. Baden-Fuller and Morgan (2010, p. 157), for example, point out that recipes are "ready for copying, but also open for variation and innovation". Their applicability, however, is highly dependent on the level of tacit or background knowledge, referring for instance to professional or organizational knowledge, of people either making the recipes or using them (Baden-Fuller and Morgan, 2010). Moreover, the way people use recipes at work may well be different from the use envisaged by those who developed them (cf. Pentland and Feldman, 2008).

Back-office service work in university administration: a study

At-home ethnography

The main research site of this study was the administrative department of personnel and legal affairs in the university where both of us have long working experience.

At the time of our study one of us had been employed full-time at the university for a decade and the other had just finished a five-year research visit here.

Our research approach resembles "at-home ethnography" (Alvesson, 2009). Although it is not always easy to define the exact territory for doing ethnography at-home (Alvesson, 2009), there are at least three important reasons why we can consider ourselves insiders within our research site (cf. Brannick and Coghlan, 2007): access, pre-understanding of the studied context and participation. First, "at-home ethnography" embraces a "natural access" to the cultural setting that a researcher aims to study (Alvesson, 2009). For us, this means that we operated in a context and were in close contact with people who were already familiar to us. During our many years of working at the university we have communicated with several administrators with regard to various administrative matters, and met them on different occasions from submitting documents at the registry's office to having lunch breaks at the canteen and participating in organizational parties. The existing personal contacts facilitated our access to the research site. Moreover, via the university intranet we have ready access to many existing administrative rules, regulations, and knowledge of administrative processes taking place at our university.

Second, our lived experience at our institute has provided us with pre-understanding of various issues relevant to this study, such as knowledge of the administrative bodies that exist at the university, or administrative meetings and processes that regularly take place. Third, according to Alvesson (2009) an important element in "at-home ethnography" is that a researcher is somehow an active participant in the cultural setting that s/he studies. Although as researchers we are not administrators, we nevertheless not only face but also constantly participate in many kinds of administrative processes; for example, we sign and even participate in preparing and formulating several kinds of contracts such as research project contracts, we prepare and deliver various grant applications, we negotiate and participate in the management of external project funding, and we regularly complete various forms, such as those related to the billing of teaching hours. In all of these contexts we are in close contact with administrative personnel both in our own department and the department of personnel and legal affairs.

The administrators in the department in focus here deal with human resources, finance, bookkeeping, and academic administration; in essence back-office services. Academic administration refers here to various kinds of preparatory and secretarial work for committee meetings in academic settings. Back-office work here means that administrators process different kinds of tasks, such as invoices, applications, and contracts that pour onto their desks mainly from other university administrators, namely, the academic service staff who are more often in closer contact with faculty members and students.

Doing ethnography

One of the main ideas of an ethnographic approach is that it focuses on the complexities of everyday life, on the mundane and ordinary, and day-to-day aspects of organizing (Ybema *et al.*, 2009). The essence of ethnography can then be defined by its purpose aiming at "understanding and explaining the cultural context of lived experience" (Forsey, 2010, p. 567); here referring to the everyday organizing of back-office administrators.

Our study was conducted from September 2009 to January 2010. From the perspective of administration this period was particularly interesting since the university was preparing for a merger with two other universities at the beginning of 2010.

The forthcoming merger meant, for instance, the outsourcing of some administrative tasks to a service centre. Additionally, application of electronic systems more extensively in administration was well underway. This resonated well with our original aim to study mundane material devices at work, particularly paper documents, and to explore if papers still matter, and how they do, in today's offices where information and communication technologies are ubiquitous. This interest emerged from being puzzled by the fact that despite ongoing endeavours to develop e-offices, including in our own institute, we still saw quantities of paper in administrative offices and confronted various paper documents in our own encounters with different administrative processes.

To collect empirical research material, we used combined fieldwork methods found in ethnography, such as conversing, observing, working, and photographing (Ybema *et al.*, 2009, p. 6). Our main method, however, was participant listening (Forsey, 2010). According to Forsey (2010), participant listening is not only a valid but also an important way of producing ethnographic data, which often, however, remains undervalued in comparison with participant observation. In our study, the primary method of collecting data was to focus on what we heard in the field through engaged listening (Forsey, 2010), either in formal interviews or casual conversations. In term of interviews, we conducted nine in-depth interviews of administrators in the department of personnel and legal affairs at our own institute and their coworkers in the administrative service centre to which some of the administrative back-service tasks had been outsourced.

We built our interview questions on various aspects relating to different kinds of papers in administration. We began by asking administrators to first talk about their work and then asked questions such as "what kinds of papers administrators use at their work, how they use papers at work, and why they use papers, in comparison, for instance, to computers, software programmes or digital files". The interview situations were facilitated by our knowledge of many administrative processes that administrators referred to and elaborated on, for example, internal budget negotiations, academic committee meetings, and different human resources practices at our institute. Additionally, in interview situations we were able to use examples from our lived experiences, such as paper documents and related processes regarding our work contracts, research projects or grant applications. Artefacts, here paper documents, constituted "a useful and practical starting point to orient the ethnographic gaze towards practices" (Nicolini, 2009, p. 123).

The interviews took place in the interviewees' personal offices. During interview sessions, we took photographs of the interviewees' offices. The aim was not to gather images (cf. Harper, 2003) of administrative offices for further analysis, but rather in the act of photographing in itself. Namely, it soon became evident that taking photographs helped us to zoom in (Nicolini, 2009) to specific artefacts in administrative offices, such as papers in binders and folders, or paper piles, and then to ask specific questions concerning these artefacts and practices related to them. The timing of the photography was important. We took the camera out only as our conversation approached an end. After granting permission to photograph, many administrators apologized for the messiness of their offices referring, for instance, to large paper piles or personal items on their desks. Some made quick evaluations as to which documents were confidential and turned these over so that they would not be visible in photos. Most importantly, however, photography helped us to extend and deepen the discussion on administrative paper practices. It also made administrators open their cabinets and talk about the hidden paper piles. Hence, the act of photography provided

us a way of seeing the offices and particularly the work that administrators conducted in their offices more closely (Plates 1 and 2).

Complementing interviews, we had numerous casual conversations relating to both administrators' and researchers' experiences and accounts of paper-related practices at our academic department. People felt a strong need to describe, even defend, their use of paper documents also in research work. These conversations were useful since they helped us to zoom out of administration and thereby reveal and crystallize possible specificities of paper-based administrative work practices; a method suggested by Nicolini (2009).

To analyse our data, we carefully read through our interview transcripts and field notes several times in order to first gain an understanding of what administrators do in offices. This first round of analysis resulted in an emergent understanding that

Plate 1.
An administrator's work desk

Plate 2.
Paper piles in back-office administration

there are several essential paper-based practices in administration (Yli-Kauhaluoma *et al.*, 2013). In other words, paper-based documents still matter and they support the work of administrators in various ways. We then followed the suggestion of Nicolini (2009) and zoomed in on one of the identified administrative practices where paper documents played an important role: the modelling of novel and uncertain administrative tasks. This means that we next carefully went through all our research material anew, and this time focused on our interviewees' accounts of their attempts to harness the novelty or uncertainty at work particularly through building and using models with the help of various (paper) documents at work. As a result, we were able to identify the specificities of two types of models, more particularly recipes, and the ways that administrators did modelling at their work. The emerging results were constantly interpreted and compared against existing literature.

Two types of recipes in administrative back-office work

The results reveal that administrators conducting service work in back-offices build up and use recipes as important administrative tools to help deal with the intricacies of their daily work. In particular, recipes help administrators to tackle both novel and uncertain administrative tasks and to find feasible and acceptable solutions to these more quickly (cf. Wagenaar, 2004; Cook and Wagenaar, 2012). Two different types of recipes were found: forward- and backward-looking. We have borrowed the concepts of forward- and backward-looking from Gavetti and Levinthal (2000), who examined the interrelationships between two different kinds of learning logic: cognitive representations and experiential wisdom. In this study, on the one hand administrators build up and use forward-looking recipes to provide support for what is assumed to be the same administrative tasks that they anticipate will frequently reoccur in the future. On the other hand, administrators apply backward-looking recipes that are based on occasionally emerging similar kinds of administrative tasks as conducted in the past. Seen in this way, forward-looking recipes are based on anticipatory cognitive representations of action-outcome linkages whereas backward-looking recipes are based on past experiences (see Gavetti and Levinthal, 2000). Both types of recipes support administrators in knowledge replication, but in different ways. Importantly, the modelling practices (cf. Morgan, 2012) vary while the staff engage in building and applying these two different kinds of recipes.

Forward-looking recipes

Administrative staff in this study created and used forward-looking recipes to anticipate and provide support for frequent future tasks that are from their view seemingly the same as those at hand. The main aim of these recipes was to harness the novelty of the tasks and to provide support in avoiding disruptions or failures in regularly forthcoming and assumedly same administrative tasks. The development of forward-looking recipes took place in two different administrative situations.

First, administrators built up these kinds of recipes while confronting tasks that were novel to themselves. An important question here was whether administrators would confront the same novel tasks frequently. In university administration, there are many tasks that are based on pre-determined and inflexible schedules appearing in a regular rhythm: for instance, bookkeeping procedures, academic committees, and the

like. When first confronting such regular and frequent tasks the question emerges of how administrators learn to carry out these tasks and replicate them correctly. The results of this study suggest that an important way of learning these novel tasks was the making of detailed recipes that acted as a means to facilitate, carry out, and learn to master and replicate the task. A secretary in the department of personnel and legal affairs explains this briefly:

> When I started in this job, I first wrote some instructions down since I did not want to ask every time.

The emphasis here was on the making of the recipes by administrators themselves and for themselves. In making recipes to anticipate the same frequent future tasks, administrators face the task of first capturing the knowledge of how to do the job (the ingredients) and then writing down the key elements or step-by-step instructions (the integration) (cf. Boumans, 1999; Morgan, 2012). An administrator taking care of the accounts payable gives one example of a recipe that she has made for herself as she carries out her daily tasks. In her work, she mainly deals with two different kinds of software systems: an electronic billing system, and a bookkeeping system. The university receives numerous e-bills each day and as the administrator processes the accounts payable one of the most important issues is to route each e-bill to the right person in various university departments. These persons are either administrators in academic departments, or the heads of departments and project group leaders with responsibility for various funds. The latter make sure that the bill is justified, that the amount of the payment is correct, authorize the payment and specify the account to be charged. To be able to perform the routing process the administrator with responsibility for accounts payable needs to know both who these people are and how to enter the data in the system correctly. Neither of these ingredients of knowledge is self-evident and therefore she has created a recipe:

> Here I have a list of persons in different [academic] departments who process bills. [In this column there is the name of the person who] controls the content of the matter [in the bill] and here the [name of the] chief [of the department]. I select the controller of the content and the chief and then I select a person who can make the payment order. The person making the payment order is always the same person. The person who controls the content does the posting. And the one who makes the payment order controls the value-added tax that it is correct throughout. This is a paper that I use a lot. I have made it myself. As I started in this job I had nothing at all, so I made this.

The example above underlines the aspect that recipes aimed at carrying out the same administrative tasks are particularly important in the kinds of administrative processes that contain a fixed, pre-determined schedule to avoid disruptions and to guarantee the timely continuity of the processes.

Importantly, it is not possible to separate recipe making from recipe using. Instead, these are closely intertwined processes. The administrator responsible for the accounts payable continues by explaining the use of recipes in situ. Besides operating the e-billing system, she also uses the bookkeeping system daily. To run the authorized payment orders, she needs to transfer data from one system to another. In the transfer process, the information regarding exact dates plays an important role and she needs to enter information relating to two different dates into the system precisely: the present day's date and that of the following day. Those bills that have been approved for payment receive the present day's date and those bills that will be paid out receive the

following day's date. To ensure a smooth flow of the complete payment process, the administrator uses a recipe while conducting the task:

> Even though I make [= run the payment orders from the system] every day, I need these [recipes] because the [process] must literally be done in the right way. […] Otherwise [mistakes] may happen, particularly in the morning when we type various dates in [the system]: the date of today or tomorrow. […] Your thinking may just suddenly get interrupted; the phone rings or something else. But, you must not mix up these dates; otherwise nobody can make anything out of these matters.

Second, besides making and using recipes for administrative tasks that are novel for themselves, administrators also build up recipes for other administrators to share knowledge and prepare for ad-hoc administrative tasks, for example, anticipating cases of future replacement to keep the administrative process ongoing and on time. An administrator gives an example of putting an agenda together for academic meetings:

> The agenda is put together on Monday if the meeting is on Friday. Last time I was sick on Monday, but Mary was able to do it. But, what if she had been sick [too]? […] Yesterday, I put things together in a binder. Just in case I am, for example, sick. In those kinds of cases someone else [then] knows what she needs to do here.

This is a sociomaterial task as the secretary in the department of personnel and legal affairs describes:

> I am not systematic at all, but I like to have my work matters in folders. […] I have just organized those folders containing instructions. There were so many good instructions, but they were so messy. Every time I tried to find something, I never found it. Now they should be well organized. […] I wanted to include some models in these instructions as well, and these I was able to include most easily as print-outs.

Importantly, the recipes are not static, but they are constantly under pressure for modification and refinement. This is in particular so when administrators face the same tasks that contain an exception to the normal or regular administrative case. The administrator in charge of the accounts payable gives an example of an exception related to the routing of e-bills to the appropriate people in academic departments:

> I take care of the phone bills and [the question] is who should I route these [to acceptance]. Within the[se] phone bills, […] [all] bills of the [people in the] whole department are together. When there is also the phone bill of the head of the department, they cannot approve their own bill. Someone else has to do it.

The identification of exceptions to the assumedly same, regular administrative tasks represent those moments at work when uncertainty becomes visible. To harness this uncertainty, administrators have to negotiate the details of the situation at hand, as noted by Wagenaar (2004). In practice this means that they carefully go through the existing legal or organizational formal rules, or contact colleagues or any authorities that they presume to possess critical supplementary information as described by an accountant:

> There are constantly cases that are somehow unusual, and therefore I have to check what the regulations say. For example, let's mention the kilometre allowance. A foreign visitor has driven a car here and charges it to us. The amount of travel allowance cannot necessarily be found in [government] regulations, but I have then called somewhere and solved this issue. Afterwards I have made my notes on the case and added them to these regulations.

The notion of note-making above suggests that the process of interpretation, complementation, and specification of formal orders result in notes that modify and refine the self-made recipes and thereby the existing formal rules and regulations in particular organizational contexts. Notes, therefore aim to capture the novel or uncertain elements in the existing rules and regulations:

> Every time I confront some kind of an exception to the case I make notes [on yellow post-it notes] on what to do in these kinds of situations, for instance, if the system seizes up but you still need to continue with [the processing in] the following section. It is these kinds of guidelines.

The driving force behind the note-making process is not only the administrators' general desire to do things right (Cook and Wagenaar, 2012), but also to capture the wanting elements in the existing formal orders and the ability to replicate the administrative processes in the assumedly same kind of cases in the future in order to allow smooth and timely administrative processes. Administrators continuously reach out for their forward-looking recipes in their daily tasks and they want to have them easily at hand as ways to learn to handle novel or uncertain administrative tasks and to avoid disruptions or failures in administrative processes.

Backward-looking recipes

Besides the development of forward-looking recipes to anticipate assumedly same tasks in the future, administrators also apply backward-looking recipes that are based on kinds of tasks from the past that are similar to those at hand. In comparison to forward-looking recipes, the emphasis here is not on the material-making but on the mind-using aspect of the recipe. According to our study, administrators use and apply these kinds of recipes when confronting rare administrative tasks. The core aspect of these recipes is that they emerge from the existing stock of experience in the back-office. The key issue is about finding and applying a pre-existing model to act as a recipe relevant to the context. The main aim of backward-looking recipes is to afford support in providing consistency in administrative processes in general, and among rarely emerging similar types of tasks in particular, when feasible and acceptable administrative solutions are produced.

Rare administrative tasks are typically not those assignments that administrators confront frequently or daily, but rather randomly and seldom. In these situations, the starting point for the recipe is whether similar kinds of tasks have been conducted before and where to find traces of such previously finalized tasks. The secretary in the department provides an example:

> A while ago there was a case [when we made an agenda for a meeting] concerning the recruitment of a professor. We formulated a condition in the agenda that in case all applicants meet some specific terms by a certain date, we can handle the applications. […] The head of our department had an idea that there had been a similar kind of a case before. And then I searched for this case in order to get [a model] of how we will formulate it in the agenda.

In this example, the secretary refers to a work task that is difficult in that it is somewhat rare, but particular accuracy is needed. The exact formulation of the matter in a meeting agenda raises careful consideration and the question arises of whether there is an existing recipe that administrators could follow here. In this example, the head of an administrative office was able to remember a similar case from the past, and in that way draw similarity relationships (Simpson, 2011) between the previous and current cases. The details of a formulation of a previous matter served as a specific recipe for administrators as they

made exact formulations concerning the current case relating to the meeting agenda. In our example, the specific details of the formulation were significant since they had direct consequences for the participants involved in the application and appointment process. More specifically, the previous formulation helped to set conditions for the applicants to meet the specific requirements of the application process, which then acted as guidelines for the decision-makers in the handling of applications.

Thus, unlike in the building of recipes to anticipate the assumedly same tasks in the future, the key issue in the case of rare administrative tasks is neither identifying the critical elements or building blocks for a recipe, nor in writing or making the recipe from scratch. Instead, the most relevant issue is to search for an existing recipe by visualizing similarities among matters (Morgan, 2012) and through the making of similarity relationships (Simpson, 2011). Hence, the core modelling issue here is about finding and applying a pre-existing model to act as a recipe in a current administrative situation. Therefore, in the case of rare administrative tasks in which administrators start the searching process, the question arises of how they can find possible existing documents to serve as recipes for their tasks, and how to gain access to these existing recipes. Finding a possible recipe seems to require organizational memory in general, and remembering specific administrative cases in particular; according to our study, these kinds of search processes often seem to begin with enquiries among colleagues. An administrator explains:

> Usually, we get enquiries from the units or from somewhere else about how [the matter] was dealt with last time. We may have had a comparable kind of a case perhaps a year ago. These become valuable pieces of paper then. We may even have enquiries reaching back beyond several years past. Therefore, it is great that we preserve these [papers] for a couple of years.

Thus, the finding and applying of a recipe for rare administrative tasks requires the abilities to first decontextualize and generalize knowledge from past experience based on similarity relationships between existing and previous administrative cases, and then to recontextualize and modify the key issues in the recipe in order to carry out the existing rare administrative task.

In this context, the question of access proved to be relevant. Administrators were ready to take many precautions to guarantee access to the relevant documents that they thought might function as recipes in the future. For example, they saved their document sets with attachments often in a paper format to avoid problems of confidentiality that would occur if they had to search for information within these documents in electronic records, such as the university intranet. Moreover, they took advantage of the various mnemonic qualities of their document sets, such as thickness, size, or colour, as they went through their files to find potentially appropriate recipes:

> I can already see from the thickness and size of an agenda where to look for something concerning a specific meeting. Therefore I use these [agendas in paper format]. I may not remember the date, but I do remember what [it] looks like. […] I can even recognize the headings better on paper than on a computer screen. It is kind of easier to get everything in the way that I take one pile and start going through it. Particularly as the matter was kind of urgent.

In brief, administrators wanted to ensure quick and certain access to the recipes if they were to confront similar untypical cases in the future to those at hand in order to provide consistency in their actions:

> On the computer, it takes a while when you search after them. […] In comparison to computers, paper feels safe. With computers I constantly have the feeling that I cannot get into the system. There is always something that you cannot gain access in the system.

> You have to wait. With paper you can immediately see the complete ensemble [of the matter]. […] For instance, at the end of the year they are making many updates to the system, which always causes small breaks. This means that the system is every now and then out of service. […] But, with papers, you can always dig them out. And, then you can immediately make comparisons between [the necessary items].

Conclusions

The study reveals that administrators conducting service work in back-offices build up and use recipes (cf. Baden-Fuller and Morgan, 2010) as important administrative tools to help deal with the intricacies of their daily tasks (cf. Wagenaar, 2004; Cook and Wagenaar, 2012). In particular, recipes help administrators to tackle both novel and uncertain administrative tasks and to find feasible and acceptable solutions to these kinds of tasks more quickly. Two different types of such recipes were found: forward- and backward-looking (cf. Gavetti and Levinthal, 2000). On the one hand, administrators build up and use forward-looking recipes to provide cognitive support for assumedly the same administrative tasks that they anticipate will frequently reoccur in the future. They build up these forward-looking recipes for situations that are at first novel for themselves or for colleagues in situations when they have to step in as replacement on an ad-hoc basis. Forward-looking recipes provide essential support in avoiding disruption or failure in regularly forthcoming and assumedly same administrative tasks.

In contrast, administrators apply backward-looking recipes that are based on occasionally emerging similar kinds of administrative tasks as conducted in the past. These recipes emerge from the existing stock of experience in the back-office. The backward-looking recipes provide support in producing consistency in administrative processes in general, and among rarely emerging similar types of tasks in particular, as administrators aim for feasible and acceptable administrative solutions. Both types of recipes support administrators in knowledge replication (Baden-Fuller and Winter, 2007).

With the help of forward- and backward-looking recipes, administrators aim to stabilize or even routinize the administrative processes (cf. D'Adderio, 2008). Administrators take advantage of recipes as devices or sociomaterial tools not only to deal with, but even to reduce the complexities and uncertainties in various kinds of administrative tasks. This study elaborates on how administrators in a back-office continuously produce two different types of recipes as important administrative tools in their ongoing and situated action. One question for future research remains whether recipes lock in the alternatives for finding the right or fitting things to do in each particular administrative situation at hand.

Additionally, this study also contributes to the discussion on modelling (cf. Morgan, 2012). Importantly, the modelling practices (cf. Morgan, 2012) vary while the back-office staff engage in building and applying these two different kinds of recipes. Even though the making and using of recipes are essentially tightly intertwined processes (cf. Baden-Fuller and Morgan, 2010) we found some differences in emphasis in either the making or using aspect of the recipe. In cases of forward-looking recipes, the emphasis was on building up these kinds of recipes. Moreover, we identified the process of capturing and inscribing the key ingredients of specific administrative tasks and writing step-by-step instructions as key modelling practices of these recipes. In cases of backward-looking recipes the emphasis was on the aspect of searching and applying these recipes from the existing stock of experience. We identified the

processes of visualizing similarity relationships between administrative tasks and localizing existing recipes as key modelling practices for these kinds of recipes.

The study also specifies the requirements or abilities in the process of modelling in administration. The existing literature has emphasized the creative (cf. Svejenova *et al.*, 2010), imaginative (cf. Frigg, 2010), and intuitive abilities (Morgan, 2012) of those who build and use models. This study emphasizes the abilities related to analytical, visualizing, and social skills, as well as the ability to memorize the detailed contents of documents. Thus, in the spirit of critical studies of the organization, our study stresses abstract and analytical competencies needed and used in administrative work.

Finally, the results suggest that the essence of modelling in administrative setting consists of being able to capture and communicate the core elements of administrative processes; to visualize similarity relationships among matters; to identify the missing elements in formal legal or organizational orders and to negotiate with other professionals to fill in these gaps in formal orders; and to locate possible documents as bases for existing models. An interesting avenue for further research would be to investigate the ways that these essential abilities for modelling emerge in practice as administrators conduct their administrative tasks in their daily-based settings. The materiality of recipes as administrative tools offers other interesting avenues for further research.

References

Alvesson, M. (2009), "At-home ethnography: struggling with closeness and closure", in Ybema, S., Yanow, D., Wels, H. and Kamsteeg, F. (Eds), *Organizational Ethnography*, Sage, London, pp. 156-174.

Baden-Fuller, C. and Morgan, M.S. (2010), "Business models as models", *Long Range Planning*, Vol. 43 Nos 2-3, pp. 156-171.

Baden-Fuller, C. and Winter, S.G. (2007), "Replicating organizational knowledge: principles or templates?", *Social Science Research Network eLibrary*, pp. 1-26, available at: http://ssrn.com/abstract=1118013 (accessed 13 January 2016).

Barnes, B. (2001), "Practice as collective action", in Schatzki, T.R., Knorr Cetina, K. and von Savigny, E. (Eds), *The Practice Turn in Contemporary Theory*, Routledge, London, pp. 17-28.

Boll, K. (2015), "Deciding on tax evasion – front line discretion and constraints", *Journal of Organizational Ethnography*, Vol. 4 No. 2, pp. 193-207.

Boumans, M. (1999), "Built-in justification", in Morgan, M.S. and Morrison, M. (Eds), *Models as Mediators*, Cambridge University Press, Cambridge, pp. 66-96.

Brannick, T. and Coghlan, D. (2007), "In defense of being 'native': the case for insider academic research", *Organizational Research Methods*, Vol. 10 No. 1, pp. 59-74.

Collins, D. (2004), "Who put the con in consultancy? Fads, recipes and 'vodka margarine'", *Human Relations*, Vol. 57 No. 5, pp. 553-572.

Cook, S.D.N. and Wagenaar, H. (2012), "Navigating the eternally unfolding present: toward an epistemology of practice", *The American Review of Public Administration*, Vol. 42 No. 1, pp. 3-38.

D'Adderio, L. (2008), "The performativity of routines: theorising the influence of artefacts and distributed agencies on routine dynamics", *Research Policy*, Vol. 37 No. 5, pp. 769-789.

Doganova, L. and Eyquem-Renault, M. (2009), "What do business models do? Innovation devices in technology entrepreneurship", *Research Policy*, Vol. 38 No. 10, pp. 1559-1570.

Eriksson-Zetterquist, U., Lindberg, K. and Styhre, A. (2009), "When the good times are over: professionals encountering new technology", *Human Relations*, Vol. 62 No. 8, pp. 1145-1170.

Forsey, M.G. (2010), "Ethnography as participant listening", *Ethnography*, Vol. 11 No. 4, pp. 558-572.

Frigg, R. (2010), "Models and fiction", *Synthese*, Vol. 172 No. 2, pp. 251-268.

Gavetti, G. and Levinthal, D. (2000), "Looking forward and looking backward: cognitive and experiental search", *Administrative Science Quarterly*, Vol. 45 No. 1, pp. 113-137.

Gray, D.E. (2007), "Facilitating management learning: developing critical reflection through reflective tools", *Management Learning*, Vol. 38 No. 5, pp. 495-517.

Harper, D. (2003), "Framing photographic ethnography: a case study", *Ethnography*, Vol. 4 No. 2, pp. 241-266.

Keiser, L.R. (2010), "Understanding street-level bureaucrats' decision making: determining eligibility in the social security disability program", *Public Administration Review*, Vol. 70 No. 2, pp. 247-257.

Lanzara, G.F. and Patriotta, G. (2007), "The institutionalization of knowledge in an automotive factory: templates, inscriptions, and the problem of durability", *Organization Studies*, Vol. 28 No. 5, pp. 635-660.

Lazaric, N. and Denis, B. (2005), "Routinization and memorization of tasks in a workshop: the case of the introduction of ISO norms", *Industrial and Corporate Change*, Vol. 14 No. 5, pp. 873-896.

Leonardi, P.M. and Barley, S.R. (2008), "Materiality and change: challenges to building better theory about technology and organizing", *Information and Organization*, Vol. 18 No. 3, pp. 159-176.

Lynn, L.E. Jr, Heinrich, C.J. and Hill, C.J. (2000), "Studying governance and public management: challenges and prospects", *Journal of Public Administration Research and Theory*, Vol. 10 No. 2, pp. 233-261.

MacKenzie, D. (2003), "An equation and its worlds: bricolage, exemplars, disunity and performativity in financial economics", *Social Studies of Science*, Vol. 33 No. 6, pp. 831-868.

Mason, K. and Spring, M. (2011), "The sites and practices of business models", *Industrial Marketing Management*, Vol. 40 No. 6, pp. 1032-1041.

Medin, D.L., Goldstone, R.L. and Gentner, D. (1990), "Similarity involving attributes and relations: judgements of similarity and difference are not inverses", *Psychological Science*, Vol. 1 No. 1, pp. 64-69.

Miettinen, R. (2006), "Epistemology of transformative material activity: John Dewey's pragmatism and cultural-historical activity theory", *Journal for the Theory of Social Behavior*, Vol. 36 No. 4, pp. 389-408.

Morgan, M.S. (2012), *The World in the Model: How Economists Work and Think*, Cambridge University Press, Cambridge.

Morrison, M. and Morgan, M.S. (1999), "Models as mediating instruments", in Morgan, M.S. and Morrison, M. (Eds), *Models as Mediators*, Cambridge University Press, Cambridge, pp. 10-37.

Nicolini, D. (2009), "Zooming in and zooming out: a package of method and theory to study work practices", in Ybema, S., Yanow, D., Wels, H. and Kamsteeg, F. (Eds), *Organizational Ethnography*, Sage, London, pp. 120-138.

Orlikowski, W.J. (2000), "Using technology and constituting structures: a practice lens for studying technology in organizations", *Organization Science*, Vol. 11 No. 4, pp. 404-428.

Orlikowski, W.J. (2006), "Material knowing: the scaffolding of human knowledgeability", *European Journal of Information Systems*, Vol. 15 No. 5, pp. 460-466.

Pentland, B.T. and Feldman, M.S. (2008), "Designing routines: on the folly of designing artifacts, while hoping for patterns of action", *Information and Organization*, Vol. 18 No. 4, pp. 235-250.

Pollock, N. and Williams, R. (2009), "The sociology of a market analysis tool: how industry analysts sort vendors and organize markets", *Information and Organization*, Vol. 19 No. 2, pp. 129-151.

Rämö, H. (2002), "Doing things right and doing the right things: time and timing in projects", *International Journal of Project Management*, Vol. 20 No. 7, pp. 569-574.

Simpson, J. (2011), "Identity crises: simulations and models", *Simulation & Gaming*, Vol. 42 No. 2, pp. 195-211.

Sosna, M., Trevinyo-Rodríguez, R. and Velamuri, S.R. (2010), "Business model innovation through trial-and-error learning: the naturhouse case", *Long Range Planning*, Vol. 43 Nos 2-3, pp. 383-407.

Svejenova, S., Planellas, M. and Vives, L. (2010), "An individual business model in the making: a chef's quest for creative freedom", *Long Range Planning*, Vol. 43 Nos 2-3, pp. 408-430.

Szekeres, J. (2006), "General staff experiences in the corporate university", *Journal of Higher Education Policy and Management*, Vol. 28 No. 2, pp. 133-145.

Thurk, J. and Fine, G.A. (2003), "The problem of tools: technology and the sharing of knowledge", *Acta Sociologica*, Vol. 46 No. 2, pp. 107-117.

Wagenaar, H. (2004), "'Knowing' the rules: administrative work as practice", *Public Administration Review*, Vol. 64 No. 6, pp. 643-655.

Ybema, S., Yanow, D., Wels, H. and Kamsteeg, F. (2009), "Studying everyday organizational life", in Ybema, S., Yanow, D., Wels, H. and Kamsteeg, F. (Eds), *Organizational Ethnography*, Sage, London, pp. 1-20.

Yli-Kauhaluoma, S., Pantzar, M. and Toyoki, S. (2013), "Mundane materials at work: paper in practice", in Shove, E. and Spurling, N. (Eds), *Sustainable Practice: Social Theory and Climate Change*, Routledge, London, pp. 69-85.

Zollo, M. and Winter, S.G. (2002), "Deliberate learning and the evolution of dynamic capabilities", *Organization Science*, Vol. 13 No. 3, pp. 339-351.

About the authors

Sari Yli-Kauhaluoma, DSc (Economics), is a University Researcher at the Consumer Society Research Centre at the University of Helsinki and an Adjunct Professor in the Department of Management at the Aalto University, School of Business in Helsinki, Finland. Her research interests include material- and technology-related practices in professional communities. Sari Yli-Kauhaluoma is the corresponding author and can be contacted at: sari.yli-kauhaluoma@helsinki.fi

Mika Pantzar, DSc (Economics), is a Research Director at the Consumer Society Research Centre at the University of Helsinki and an Adjunct Professor in the Department of Management at the Aalto University, School of Business in Helsinki, Finland. His research area varies from technology studies and consumer research to practice theory.