Rethinking Stability and Change in the Study of Organizational Routines: Difference and Repetition in a Newspaper-Printing Factory

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Organizational life consists of an ever-changing world of encounters, experiences, and complex sociomaterial relations. Within this context, standard routines can be seen as a solution to problems of inefficiency within organizations, especially when associated with images of stability, repeatability, and standardization. This can bring a sense of order where there is disorder, and stability in the face of change. However, whereas standard routines may be seen as providing solutions within complex and ever-changing organizational worlds, they can also be viewed as sources of organizational problems. Through an ethnographic examination of two routines within a newspaper-printing factory, our paper seeks to build on and add to contributions within routine dynamics (RD) by highlighting the emergence and coexistence of change and stability and the enactment of standard routines through a performative process of difference and repetition. In particular, our paper examines how organizational stability and change emerge through the dynamic relations underlying the enactment of difference and repetition and how these relations involve various—sometimes hidden—microprocesses that include the simplification and amplification of facts, scripts, and concerns. By drawing together the findings from our ethnographic research, studies within the area of RD, and concepts relating to a Deleuzian and Latourian perspective, our paper therefore contributes to the work on the repetition of routines by further unpacking the generative sociomaterial dynamics, creative forces, and microprocesses that underlie the emergence of stability and change through difference and repetition.

Keywords: routines; stability; change; repetition; difference; scripts; simplification; amplification
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1. Introduction

The growing interest in stability and change as key processes in the study of organizations and organizational routines has informed many different approaches and perspectives (Becker 2004, Becker et al. 2005, Howard-Grenville 2005, Zbaracki and Bergen 2010). Whereas some have anchored routines to ideas of stability and inertia (Cohen et al. 1996), others have highlighted the possibility for routines to undergo changes (Cyert and March 1963, Nelson and Winter 1982). However, understanding routines and change in relation to routine dynamics (RD) is a much more recent development within this area of study (Feldman 2000, Feldman and Pentland 2003). More specifically, the increased recognition of routines as sources of both stability and change (Feldman 2000, Farjoun 2010, van der Steen 2011) has opened up a rich vein of research for scholars to explore the complexity and dynamicity underlying routines and practices within diverse organizational settings.

More recent literature has taken this further with an increased emphasis on practice-based approaches that attend to the dynamic and processual nature of routines (Howard-Grenville 2005, Pentland and Feldman 2008, Pentland et al. 2012). In addition to highlighting the importance of agency (Feldman and Pentland 2003), this work has shed light on the performativity of organizational routines including the constitutive qualities of both humans and nonhumans in the performance of routines (D'Adderio 2008) and the role practices can play in both stabilizing and generating possibilities for further actions (D'Adderio 2011, 2014; Leonardi 2011). Much of this recent work in RD has also engaged in a more detailed and process-based analysis of stability and change (Feldman and Pentland 2008, D'Adderio 2014), with an increased focus on the performativity, materiality, and heterogeneity of organizational routines (Becker 2008, Pentland et al. 2010, Salvato and Rerup 2010, D'Adderio 2011). In particular, by engaging with the micro-level dynamics of stability and change, D'Adderio (2014) shows how similarity is emergent and the outcome of heterogeneous sociomaterial assemblages that perform routines in different contexts and times. In that sense, even though routines may appear to have been transferred identically through a linear and simple process of repetition, they actually undergo an active, emergent, and creative process of routine replication (D'Adderio 2014).

This paper seeks to build upon these contributions by examining in further detail how the microprocesses underlying the repetition of routines rely on and create complex sociomaterial assemblages, enacting different instances of stability and change and therefore producing specific organizational outcomes. This involves going

beyond the early black-boxed image of routines as entities and contributing further to the more recent analysis in RD by examining the conditions, relations, and creative sociomaterial processes that underlie the process of repetition and the difference, multiplicity, relationality, and materiality through which routines are repeated into action. Through a detailed analysis of these microprocesses, this paper also examines how specific organizational problems and solutions, facts and concerns, images of stability and change, and ideas of good/bad practice emerge from the repetition of routines and how this process connects to specific scripts and practices of "simplification" and "amplification."

The three main research questions underlying this paper are as follows: How can we go beyond early essentialist and black-boxed images of repetition, stability, and change to capture the complexity, difference, and heterogeneity underlying the repetition of organizational routines in practice? How can we theorize the different microprocesses, creative forces, and sociomaterial conditions that underlie this process of repetition by which certain entities and images of stability and change emerge? What are the implications of this form of analysis on our understanding of stability and change in relation to organizational routines?

These questions emerged during an ethnographic study of routines within a newspaper-printing factory and in response to a range of different issues and concerns that transpired in connection with two standardized routines: ink density usage and the assessment of newspaper quality. During the research process, we became aware that while certain standards provided a productive image of stability and change in terms of solving certain organizational problems, they could also be seen as the source of many different concerns and problematic issues for managers and workers alike. Exploring this issue therefore called for a deeper analysis of the micro-level processes underlying the repetition of routines.

To delve deeper into the sociomaterial assemblages and microprocesses underlying the repetition of routines, our research drew on the conceptual thinking underlying the work of Deleuze (2004) and Latour (2004), and a diverse set of concepts and thinking connected to routine dynamics (Feldman and Pentland 2003; Howard-Grenville 2005; D'Adderio 2008, 2011, 2014; Pentland and Feldman 2008; Salvato and Rerup 2010). This involves a shift away from relying on the existence of discrete entities (objects, subjects, etc.) in an a priori form to a focus on different complex and heterogeneous sociomaterial relations, assemblages, forces, and actions that underlie an alternative view of repetition. Such a shift allows us to examine in more detail the various microprocesses of simplification (assembling and closing down spaces of action) and amplification (opening up of further spaces and forms action) and the role of certain organizational scripts associated with the repetition of these routines.

We find that standard routines can be usefully theorized as ongoing assemblages of distributed actions, agencies, and creative forces that continually undergo a process of repetition, as they emerge and are repeated through specific events and different sociomaterial assemblages. To set the stage for our findings and provide an overview of the conceptual thinking underlying this paper, we begin by situating the research in the context of the broader debates and concepts within RD and the work of Deleuze (2004) and Latour (2004), which provide the conceptual thinking underlying this paper.

2. Routines and Repetition

2.1. Organizational Routines, Stability, and Change

Although a dense theoretical plurality underlies the study of routines (Becker 2004), Feldman and Pentland (2003, p. 95) provide an all-embracing definition of routines as "repetitive, recognizable pattern of interdependent actions, involving multiple actors." This definition highlights the collectiveness of routines (Nelson and Winter 1982, Lazaric 2000), the view of routines as "effortful accomplishments" (Pentland and Rueter 1994, p. 488), and the continual process of repetition aligned with organizational routines (Pentland 1992, Costello 2013). In particular, more recent research in routine dynamics has highlighted the processual dimension of organizational routines (Becker 2004, Becker et al. 2005) with caution being exercised to avoid the reification of routines (Feldman and Pentland 2003, Pentland and Feldman 2008, D'Adderio 2011). Furthermore, Feldman and Pentland (2008) have highlighted the importance of developing our understanding of routines in relation to stability and change. These include the connections between routine participants (Feldman and Rafaeli 2002, Turner and Rindova 2012), the temporal orientation of actors and performances (Howard-Grenville 2005, Turner 2014), the internal properties of routines (Feldman 2000, Pentland and Feldman 2008), and the way routines play a role in articulating tensions between stability and change (Farjoun 2010).

Keying further into stability and change in relation to organizational routines, Feldman and Pentland (2003) distinguish between the ostensive and the performative aspects of routines. Whereas the ostensive refers to the routine *in principle* (e.g., specific patterns and structural aspects of the routine), the performative relates to the routine *in practice* (e.g., the specific actions performed by participants). Although not predetermining the action of the routine participants, the ostensive not only structures and shapes further actions, but also connects to the reshaping of routines through the performative process (Feldman and Pentland 2003). In this sense, change is possible through the improvisations associated with routine participants and through the reshaping of the

routine (Feldman 2000, 2003; Feldman and Pentland 2003; Pentland and Feldman 2005).

Stability and change have also been viewed through the lens of organizational scripts and standards (D'Adderio 2008, 2011, 2014; Turner and Rindova 2012). Scripts can broadly be defined as a set of rules and assumptions embedded in a particular practice or technology (Akrich 1992). This processual approach to the complexity of organizational routines has also led to the development of further insights through the ostensive/performative duality, the multiplicity of routines' performances, and the role of competing ostensive scripts (Howard-Grenville 2005, Zbaracki and Bergen 2010). Consequently, whereas earlier approaches in routine theory have adopted an entitative approach to the study of routines, the more recent contributions to RD have followed a processual and performative approach. Additionally, certain work within the area of routine dynamics has also sought to develop our understanding of stability and change further by embracing the sociomateriality of agency and ideas of materiality.

2.2. Organizational Routines: Performativity, Materiality, and Scripts

The increasing focus on the heterogeneity and performativity of routine assemblages (Suchman 2007; Becker 2008; D'Adderio 2008, 2014) has been paralleled by a greater awareness of nonhuman and material forms of agency (Pentland and Feldman 2008, Pentland et al. 2010). This includes the role of certain artifacts as mediators and intermediaries in the development and application of routines (D'Adderio 2008). In this respect, Pentland and Hærem (2015) argue that artifacts have been granted three different types of roles in the RD literature: affordances or constraints (Robey et al. 2012, Norman 2013), extensions of the intentions of the routines' designers (Pentland and Feldman 2008), and actors taking actions (D'Adderio 2011, 2014; Leonardi 2011; Pentland et al. 2011). D'Adderio (2008, p. 786) also highlights the importance of keying into the microdynamics, performativity, and materiality of organizational routines and the different ways in which "artefacts as intermediaries shape the interactions between different sides of routines." The two major turns in the field of RD, therefore, are the rethinking of routines in relation to process, practice, agency, and performativity and the positioning of materiality and artifacts as key aspects in the study of routines (D'Adderio 2011).

Other authors in organizational theory have also engaged with the microdynamics of organizational routines through a focus on the intertwining of human and material forms of agency (Orlikowski and Scott 2008, Leonardi 2011). The discussion of materiality has therefore contributed to wider debates within organization studies (Leonardi et al. 2012, Carlile et al. 2013), with sociomaterial approaches seeking to provide a fresh outlook on organizational practices in

relation to technology and materiality (Orlikowski and Scott 2008, Orlikowski 2010). A focus on scripts and materiality connects this work to the work of D'Adderio (2011, 2014), especially in relation to the ways in which she explores different competing scripts in the performance of organizational routines. As argued by D'Adderio (2011, p. 213), "taking the notion of scripts seriously implies recognizing that agency can be embedded in artifacts, both as traces of actions (as in a step-by-step instructions procedure) and of intentions, assumptions, rationales, and logics." The coperformance of stabilizing and changing forces in organizational routines and scripts therefore echoes with the recent discussion of repetition within routine theory and the paradox of the (n)ever-changing world by Birnholtz et al. (2007, p. 316): "one does not step into the same river twice" (Heraclitus); there is no new thing under the sun (Ecclesiastes)." Such reflection is aligned with D'Adderio's (2014) examination of similarity as an emergent outcome of different sociotechnical or sociomaterial assemblages. Stability is thus seen as an outcome of the continual process by which routines and relations are recreated through each performance (D'Adderio 2014). This literature has therefore contributed to further our understanding of routines by drawing our attention to the heterogeneous agency, materiality, and difference underlying the repetition of routines. Although this literature has been particularly insightful to this discussion of routines, it has also highlighted the need to further develop our understanding of the role of artifacts (such as standard routines and procedures) in the (re)creation of routines (D'Adderio 2011). In this paper, we posit that additional contributions to this analysis are possible by engaging further with the microprocesses connected to the repetition of routines and the different practices and mediations that underlie the process. In particular, scope is left for exploring how certain relations become stabilized and simplified and the implications of this for routines. We do so by building on routine dynamics and extending this approach through the work of Latour (2004) and Deleuze (2004), whose ideas provide vantage points for examining our understanding of stability and change through difference and repetition.

2.3. Difference and Repetition: The Intensive and Extensive Relationship

The shared interest of Deleuze and Latour in repetition through difference reflects a desire to capture the complex and processual nature of events, actions, and practices, while avoiding a reliance on generality, representation, and identity (Linstead and Thanem 2007). Such a stance enables an engagement with the multifaceted forces, actions, and potentialities that surround everyday practices without relying on some preestablished framework of entities and simple, linear notions of causality. In contrast to the image of simplicity, stability, and linearity often associated with the process of repetition, Deleuze (2004)

seeks to explore the complex assemblages (the coming together and interacting of heterogeneous actions, forces, and qualities) underlying this continuous process. To move away from ideas of representation and identity (i.e., a form of repetition that repeats identically), Deleuze (2004) suggests exploring repetition through the lens of difference. In other words, rather than grounding repetition on some preestablished framework, he positions difference as an affirmative and creative force of action. Repetition is no longer thought as "the repetition of the same," but rather as the "repetition of difference" (i.e., a performative form of repetition). In that sense, repetition is an active process relying on complex assemblages of mediators and intensive forces (Deleuze 2004). This further implies that repetition is concerned with the production of novelty, even in situations where "things" appear to repeat in the image of the "Same" or the "Similar.' For Deleuze (2004, p. 113), "we produce something new only on condition that we repeat.'' In contrast to viewing difference as an aberration requiring standardization and stabilization, Deleuze (2004) suggests that it should be seen as a powerful conceptual device that enables an appreciation of the complexity and heterogeneity underlying everyday action.

In *Difference and Repetition*, Deleuze (2004) also usefully distinguishes between the intensive and the extensive. The intensive domain encapsulates heterogeneous forces and desires, whereas the extensive refers to the homogenous, independent, and grid-like forms of things themselves (e.g., entities, metrics, measurements, specific forms and goals of efficiency, etc.). A shift away from an essentialist ontology (focusing on distinct, fixed, and a priori forms) requires a greater sensitivity to the relational, active, and affective forces that may be left by the wayside and hidden in the depths of the intensive (Delanda 2005). In other words, the work of intensive difference is often hidden by the extensive properties/qualities that they generate (Duff 2014) as lying beneath and hidden by the extensive (of things themselves) are the dynamisms of the intensive. For Deleuze (2004), to study the generation of entities or extensive forms requires an appreciation of the intensive differences and assemblages connected to this process of repetition. Therefore, by delving into the minutiae of repetition as grounded on difference, it becomes possible to explore the processes underlying the creation of extensive forms and the different capacities and sociomaterial assemblages connected to this process.

2.4. Performing Stability and Change: Matters of Fact and Matters of Concern

When studying stability and change in relation to routine dynamics, actor-network theory (ANT) also provides valuable conceptual devices, such as a focus on matters of fact and concern and organizational scripts. These concepts enable a deeper examination of difference and repetition and the potentially hidden sociomaterial dynamisms of the intensive. The desire within ANT to explore how

"actors and organizations mobilize, juxtapose, and hold together the bits and pieces out of which they are composed" (Law 1992, p. 386) clearly resonates with certain research interests underlying the work on RD. Despite the plurality underlying the mobilization of ANT within the organizational studies literature (McLean and Hassard 2004), authors have shared a commitment to challenge a priori assumptions about reality, truth, and divides (Latour 1996, 2005). This includes examining how certain relations become stabilized and how the heterogeneity of the network can appear simplified (Latour 1996). In particular, Latour (2004) examines ideas of stability and change through his work on regimes of truth and the distinction between "matters of fact" and "matters of concern." For Latour (2004), whereas matters of fact may be taken for granted as stable, discrete, and independent entities as they emerge as stubborn, indisputable, and obstinate facts, they can also be fragile and transient, due to work and effort required in producing this image of endurance. In contrast, a focus on matters of concern involves adding the scenography of difference, mediations, and work that lies behind the scenes. Matters of fact then begin to look different as they overflow their boundaries, move in different directions, and become attached to different actions, spaces, and times (Latour 2004). Such a focus also calls for the exploration of the different regimes of truth making and organizational scripts that underlie the process by which certain positions (such as roles) and facts become assigned and mobilized (Latour 2013) and are therefore particularly relevant for capturing routine dynamics.

To conclude, although the use of Deleuze's (2004) work on difference and repetition remains fairly atypical in the management and organizational literature (Clegg et al. 2005, Linstead and Thanem 2007, McLean and Aroles 2014), this paper seeks to show how a focus on repetition and intensive forces provides a range of thought-provoking insights into the process of organizing and the study of routines. In particular, our paper seeks to show how a focus on difference and repetition through an examination of the intensive/extensive relationship can help us rethink stability and change in the repetition of routines. This involves delving further into the process of difference and repetition by examining the sociomaterial dynamics and microprocesses that underlie the emergence and complex interplay between different intensive forces, scripts, facts, and concerns. Before discussing this in greater detail in relation to the findings of our research, we first provide an overview of the methodological approach underlying this study.

3. Methodology

3.1. Introducing the Empirical Site: Crystal Print
Crystal Print is part of a national media company with several newspaper-printing factories spread over the United Kingdom. It has become one of the largest printing

factories in England and prints both local and national newspapers as well as other forms of papers and magazines. The factory is divided into five organizational areas: engineering, material holding, prepress, press hall, and postpress, and each of these sections possesses its own maintenance and managerial team. It is organized on a shift basis with four different teams split between day and night shifts. Indicators of the performance for each team are recorded and displayed on a board in the press corridor, thus allowing comparisons between different teams (e.g., different forms of performance and productivity).

Numerous organizational changes have occurred within Crystal Print over the past decade. These have included several changes in the organizational structure and the shift system, mergers, redundancies, new computerized printing presses, and the introduction of new manufacturing approaches (such as lean manufacturing). The printing sector in general has seen a reduction in the demand for printed newspapers and a greater emphasis on production efficiency (Cooke 2000) and routinization. Certain strategies such as lean manufacturing have been seen as attractive "solutions," especially as "problems" have become increasingly defined in terms of high costs and waste levels, lack of standardization and routinization, and the need for a greater focus on continuous improvement (CI), quality, planning, and measurement within the factory. This is illustrated by the vast array of new organizational routines, standards, measurement, and assessment techniques that have been introduced within Crystal Print.

3.2. Data Collection

Our methodological approach to study routines within this newspaper-printing factory took the form of an ethnographic style of investigation.[1] Rather than a unified method of methodology (Atkinson et al. 2001), ethnography can be seen as a facilitator or facilitating device in the study of organizational practices, processes, and controversies. It not only provides a multifaceted style of investigation involving a wide range of methods, it also enables researchers to explore the messy and complex "realities" of mundane and everyday situations and events where practices are entangled in complex webs of tensions, forces, and possibilities (Law 2004). In other words, not only did ethnography sit at ease with the conceptual focus of our research, it also provided an excellent basis upon which to delve into the complexities underling the empirical setting. By exploring ideas of multiplicity and heterogeneity associated with the intricacies of stability and change, our research involved "following" different events, practices, relations, actants, and actions (Latour 2005, D'Adderio and Pollock 2014).

The data were collected over a period of seven years and amounted to several hundred hours of ethnographic interaction and analysis, many pages of field notes, and documentary evidence. The phases of the research adopted similar research methods and were divided into four periods. The first phase was conducted over a period of one year during 2006/2007 and involved different periods of intensity, ranging from two to four visits per week to the factory. During the second period, certain changes to the organization and the introduction of new practices were examined through visits from 2007 to 2011. The third intense period of research was conducted during 2011 and 2012 and included visits two to three times per week by an additional researcher. Finally, both researchers conducted the final in-depth phase in 2013, over a period of six months.

In addition to conducting interviews with various managers and workers (e.g., the managing director, production and engineering managers, health and safety (H&S) managers, the human resources manager, continuous improvement and quality managers, team leaders, engineers, shop-floor based workers), many informal discussions took place with a variety of Crystal Print's employees. These discussions often occurred while observing or working on the shop floor, within management offices, after meetings, and during coffee breaks. These discussions provided opportunities to understand the technical complexities of the printing process, and through them we also gained further insights into the problems, tensions, and controversies emerging through everyday practices. We also conducted various phases of observation, which included observing printers and other workers during print runs, team leaders during their shifts, postpress workers collating the copies, engineers maintaining the presses, Materials Handling organizing the supply of paper, various workers and managers involved in meetings (such as key performance indicator meetings, daily production meetings), and the CI manager as he went about his everyday tasks. Finally, the research involved the examination of a multitude of documents emanating from various departments within Crystal Print (e.g., H&S regulations, financial statements, performance reports, to name but a few); field notes were produced following each interaction.

3.3. Data Analysis

To highlight the recurring themes, patterns, and concepts that emerged during the research process, both researchers systematically analyzed and coded the empirical data collected using an inductive approach (Nag et al. 2007). This included working through our interview scripts, field notes, and the documentary evidence to identify recurrent themes through our first-order codes (cf. Van Maanen 1979). Different aspects and patterns emerged during this research process, and these first-order codes focused our attention on two specific organizational routines: ink density usage and newspaper quality assessment. These codes emerged from many different sources and included managers highlighting the role of routines in solving certain organizational problems, printers raising concerns

about the operation of certain routines, observations of certain difficulties associated with the performance of standard routines, problems where printers felt forced to follow certain aspects of the routine at the expense of good practice elsewhere, and a focus on the role of devices and reports in producing simplified accounts and how specific explanations could become hidden or lost. This led to the generation of many first-order codes from these data (e.g., ink density, routines, quality assessment, standards, color register, lean manufacturing, performance management, good/bad practice, densitometer, concerns, frustration, problems, solutions, etc.). The second-order codes then emerged through an iterative process of engaging with the first-order codes, the data, and different ideas, debates, and concepts within different literatures. These literatures included the research on RD relating to the microdynamics of organizational routines, sociomateriality, and stability and change (Feldman and Pentland 2003; Birnholtz et al. 2007; D'Adderio 2008, 2014; Pentland et al. 2011); the work of Deleuze (2004) on difference and repetition and the intensive/extensive relation; the role of scripts (Akrich 1992; D'Adderio 2008, 2014; Latour 2013); and the distinction between matters of fact and matters of concern (Latour 2004).

This iterative process highlighted significant issues relating to the different and relational forces underlying the process of repetition and the dynamic microprocesses that produce certain forms of stability and change. For instance, when examining the development and application of standard routines connected to ink density usage and quality assessment, it became apparent that many different forces, practices of simplification and fact making, competing scripts, and conflicting ideas of good and bad practice (e.g., getting the paper out the door versus reducing ink usage) lay behind this process of repetition and the emergence of different instances of stability and change and extensive forms (e.g., good or poorly performing team, high-quality newspaper copies, poor recording practice, lower ink costs, improving production performance, double runs). The constant process of moving back and forth between our data, the theories, and the emergent coding scheme thus ensured that the second-order codes and themes were faithful to our data and provided a basis to continually connect the empirical findings with the development of our conceptual thinking. This iterative process also allowed us to ensure consistency and rigor in our coding process and provided the basis to developed specific research themes connected to the repetition of organizational routines.

Three main second-order codes were identified through this iterative process between data and theory. Our first second-order code relates to the repetition of routines through difference, with a focus on the intensive/extensive relationship. Our second second-order code focuses on the relationship between sociomateriality, scripts, and the practices of simplification and amplification in the repetition of routines. Our third second-order code captures the complex interplay between matters of fact and matters of concern underlying this process of repetition. This led to development and focus on our overarching theme, which captures how difference and repetition underlie the making of stability and change in routines. Specifically, we show how different images of stability and change are brought into life through certain sociomaterial assemblages, dynamic microprocesses, and complex relational forces underpinning this process of repetition. We demonstrate that this is achieved through the complex interaction between the intensive/extensive relationship, competing scripts, practices of simplification and amplification, and different matters of fact and matters of concern.

4. Empirical Findings

Our empirical research is based around the introduction of two organizational routines connected to the standardization and reduction of ink usage and a new metric system to assess the quality of the copies published within the printing factory. Before providing a discussion of our empirical study, we first outline the main findings from this research in relation to these two routines.

4.1. Routines and Repeatability in Practice: Problematizing Ink Density as a Matter of Concern

Color lithographic newspaper printing relies on the use of four inks—cyan, magenta, yellow, and black—and various factors can influence the levels of ink used in each print run. This can include the color register, levels of water used, absorbency of the paper, the desired "depth" and "quality" of the image, the manufacture and combination of the inks, to name but a few. A significant area of change highlighted during our research was the attempt to reduce the levels of ink usage through the introduction of new standard routines within the factory. This included changes to the printing practices, different processes and devices for recording and reporting on ink usage, audit checks to monitor compliance with the new procedures, and the development of reports for production and management meetings. Following the turn toward lean manufacturing (a widespread set of industry "best" practices aimed at increasing process efficiency; see Womack et al. 1990), both the printers and the managers highlighted the increased use of standard routines and procedures within the factory. Reactions to the changes introduced within the factory were generally mixed, even to the point that some managers had begun to use a different terminology to reduce the negativity associated with certain routines and standards.

Whereas many managers described the introduction of routines (e.g., the measurement and control of ink usage) as an attempt to reduce costs and increase production efficiency, some printers felt that these new standards had led

to problems with different demands and competing ideas of good practice (e.g., different ideas of "good" quality). Printers also outlined how the introduction of the new practices associated with densitometers (a device used to record ink density levels) had produced a marked change on their daily routines and sometimes on the quality of copies. Furthermore, since their role had always involved assessing the quality of the copies, the introduction of new standards not only challenged notions of good/bad copy, but also how the printers performed their role.

4.2. Performing and Problematizing Ink Density as a Matter of Concern

During the course of our research within the press hall, tensions over ink density usage were becoming increasingly apparent. We therefore began tracing this issue into other settings within the factory by interviewing various managers (e.g., the managing director, CI manager, and production managers), attending meetings, reviewing reports, conducting further informal discussions with the printers, and observing workers in other departments within the factory. Through further discussion with Luke, the managing director of Crystal Print, it became apparent that the issue of ink usage had become viewed as a potential "problem" to be investigated and a specific matter of concern. Luke was one of the main drivers of lean manufacturing within the factory, and this not only influenced how he viewed ideas of quality, costs, standards, and continuous improvement, but also the techniques he employed to investigate and act on these issues. In the case of ink usage, he described how one part of the report from head office compared the levels of ink usage of the different factories within the company. He highlighted how he viewed this as a problem that required further investigation and asked Matthew (the CI manager) to examine the cost implications. More specifically, he wanted to examine why Crystal Print was performing satisfactorily in comparison to some factories, but was being "outperformed" by their main internal competitor. As Luke showed us the figures from the reports, he pointed to the fact that Crystal Print was incurring higher monthly ink usage and costs. He also indicated that compared to this competitor, ink usage costs were impacting considerably on their yearly costs of production.

Matthew then began to explore ways of reducing ink usage through routinized and standardized systems of measurement. One of Matthew's initial tasks involved contacting the ink manufacturers to obtain "standardized" figures for newspaper production. These figures became the basis for the production of what he called "*optimal ink densities*" for the regular runs in Crystal Print. The setting of ink density standards for each color involved complex calculations and variables relating to the printing press, the grammage of the paper, the quantity of water on the rolls, as well as the percentage of humidity both

in the storage rooms and in the press halls. As Matthew explained, "We have set the standard figures for each color. Black is 1.10, magenta 0.85, cyan 0.85, and yellow is 0.75. This is what actual practice is compared to within each run." These ink density figures were seen as establishing future standards of "good" practice for the factory and as producing a more detailed estimation of overcosts and inefficiencies incurred during a particular run or by a team.

Matthew also investigated different ways of measuring ink density and selected a densitometer. He then performed pilot studies to assess the measurement of ink usage on various runs and used the densitometer to compare the previously set standards to actuals. Reports containing various data, figures, graphs, and recommendations for best practice were produced, and the results were discussed during management and production meetings. During one meeting, Matthew described how, among other things, the report revealed that yellow and mainly cyan inks were massively overused in Crystal Print. These reports highlighted the extensive cost implications associated with high levels of ink usage (as ink density and usage were translated into an issue of cost). Through these reports and meetings, ink density was increasingly becoming attached and translated into a problem of "financial cost" and as a specific matter of concern. This intensified further with ink overuse becoming attached to high costs, financial losses, and attempts to significantly reduce ink usage.

4.3. Redefining Organizational Routines and Views of "Best Practice"

More densitometers were purchased to increase the ability to measure and assess ink usage for each print run. The densitometers and the readings from these measurements became part of the introduction of a new organizational routine that sought to systematically monitor, record, and control ink usage through the provision of "accurate" ink density measurements. To keep the readings as close as possible to the set standards, the printers were required to compare the actual readings with the standards and make the necessary adjustments to ink density. The printers were also required to record the density readings for each run. To maintain an accurate record to compare different products, presses, and teams, Matthew would regularly monitor the readings (via random copies from each run) and record these within a spreadsheet. He would then report back to the daily production meetings to highlight "poor" levels of ink usage based on a particular run or figures collated for a specific team. Team leaders were then required to account for readings that were significantly above standard and instances of noncompliance.

During these meetings, instances would arise where team leaders would highlight a specific reason for apparent levels of "poor" ink usage. Although this may have been discussed in more detail during the meeting, sometimes other issues became the focus of the daily production

meeting (e.g., serious breakdown on certain presses or ongoing problems in other departments). In these cases, ink usage may not have been discussed, and certain explanations would not be requested. Although some team leaders were relieved to avoid discussing the reasons for any apparent noncompliance, some also suggested that this lack of discussion or opportunity to explain could lead to potential problems. Some also felt that it may appear that they are performing badly (when figures are collated and analyzed) even though there may be very good reasons for increasing ink levels (Garfinkel and Bittner 1967). Many printers raised this as a matter of concern and stated that certain individual explanations and experiences could be "lost" from these accounts when not presented within the simplified figures of management reports. This was also seen as a particular problem in meetings where people in the room were not from the factory floor and may not fully understand the complexity of these issues.

In this respect, some team leaders and printers raised concerns that important issues may fade into the background, as it could appear in certain figures and reports that some teams are performing well even though they are not always producing good output. This was particularly apparent in situations where some teams appeared to be complying with "good" practice in terms of ink levels, but failed to perform well in other regards (such as producing good quality images) with the potential for problems to arise elsewhere (e.g., during another meeting when an advertiser complains about an advert). In other cases, to avoid concerns with the quality of the adverts, some printers ended up increasing ink levels even at the risk of being criticized for failing to comply with ink standards. Some printers sought alternative ways to attend to both these requirements by altering the ink/water balance. Although this was seen as a "solution" to complying with the ink density routine, damp copies could create additional problems elsewhere (jams and delays in postpress production). Therefore, "good" practice for some was not always "good" for others.

4.4. Matters of Concern and Competing Scripts: Ink Quality and Usage

Satisfying competing ideas of good practice was often highlighted as a particular problem for printers where organizational routines were deemed to be too rigid or unable to flex to a given situation. As highlighted above, this could include cases where on one hand they may be criticized for overusing ink and not complying with the ink density standards and routines, while on the other they could be challenged for not producing high-quality images. The case of adverts, where a greater usage of ink may be required, was often described as especially difficult. Adverts were often seen as a priority when assessing the quality of the copy, as advertisers were viewed as a major source of revenue for the factory. Sam,

a printer, provided an example of such a situation by showing us an advertisement for sportswear. He explained how the advert required the use of more magenta to obtain a bright red color and produce a "good" quality copy. However, to achieve this, he would need to increase ink density above the standardized levels. Sam argued that he needed the flexibility to judge the appropriate level of ink for the run on a case-by-case basis, rather than being restricted by routinized and standardized procedures. The comments made by Sam resonated with discussions with other printers who expressed concerns about how certain routines and simplified forms of measurement can sometimes go against their feelings of professional integrity and autonomy.

Steven, a younger printer, explained how "sometimes the standards [ink density] are ok but you can have a run which needs extra ink, but you're continually forced to keep thinking about ink usage." Many printers expressed concerns about the fact that they were being forced to remain within the constraints of the ink density script to cut production costs, even at the cost of quality. In particular, they highlighted the problems of trying to ensure the production of a "good" copy according to their own standards and professional integrity when these did not match other constraints. Concerns were also raised about the ways in which these new organizational routines were linked to practices of lean manufacturing and the negative connotations associated with this concept for those in the press hall and postpress. Ink density was only one area of concern expressed by printers and managers; another related to the introduction of new organizational routines associated with the measurement and control of certain products and copies within the press hall.

4.5. Marks, Standards, and Stabilizing Processes: Enacting Quality in Practice

Assessing the "print" quality of the copy was another routinized practice introduced around the same time as the ink density routine. Matthew was allocated the task of examining the issue of copy quality by focusing on newspaper production for runs over 40,000 copies. This involved designing a new system to allocate marks out of 10 for eight different areas of quality assessment (i.e., inking, layman density, catch-up, register, folder/trolley marks, tramlines/plate edge marking, blanket damage, and plate scratches). They were not only described as major "causes" of print quality problems, but also seen as easy to assess and measure. A maximum of 10 points could be awarded for each area (10 points for no defect, 5 points for one defect, and 0 if two or more defects were reported or a very significant defect was identified), leading to an overall mark over 80. Despite the apparent equality in terms of the points allocated, three parameters were seen to have a higher status: plate edge marking, blanket damage, and the register. As Matthew explained, "the customer can easily notice faults in these areas, so

we give them a higher status." He also explained how sometimes customers would refuse copies based on quality issues. And whereas certain actions can be performed immediately (e.g., simple recalibrations of the presses), others can only take place at the end of the print run.

The assessment system is scripted in such a way as to define the copy as "poor" (from 0 to 60 points), "within tolerance" (from 60 to 70 points), or "good" (from 70 to 80 points). Although marks can potentially go from 0 to 80, Matthew explained that most copies receive a mark between 50 and 75. A copy ranking below 50 is seen as very problematic because it could raise issues with the quality requirements set up in the publishers' contract. The marks obtained are entered into a spreadsheet, and these are transformed into graphical images. In cases deemed by Matthew to be significant or requiring immediate action, further actions would be taken (e.g., speaking directly to specific team leaders). In other cases, he would merely report back to everyone in the daily production meeting, or a report would be produced for other management meetings to assess performance over time or to compare teams. This process was again associated with the introduction of lean manufacturing within the factory and the logic of routinization, standardization, repeatability, and cost reduction.

4.6. Repetition of Marking Standards: Matters of Fact and Matters of Concern

When examining in closer detail how the apparently identical "mark" of the quality assessment and specific routinized practices were repeated into action, it became apparent that there were many different actions and relations underlying this process. During a night shift, Roger, a printer, outlined how some 65s could be viewed as better than others. In one case he explained that a weekly sport newspaper had lost 15 points (for catch-up, folder marks, and layman density) and was given a final rating of 65 (categorized as "within tolerance"). Roger viewed these as minor defects and not as significant in terms of print quality. For Roger, the copy "was of really good quality with only light defects that you have to report, but nothing serious and nothing that people would notice when picking up the newspapers on the street." He compared this example to a regular run of a daily local newspaper that was also attributed the mark of 65, but presented a particularly severe defect in the register (10 points lost) as well as a defect on plate edge marking (5 points lost). Although the spreadsheet would record this as "within tolerance," discussions during the daily production meeting clearly raised this as a critical issue. In fact, Matthew described this copy as an instance of "poor" practice and called for further investigation. It emerged that they had previously never used this particular press for this product, given the importance of this daily newspaper in question and the recurrence of certain defects on the press. However, it had been a busy night, and there were

maintenance issues on the other presses, leaving little choice but to shift the paper to this line. Matthew further explained how the assessment routine was sometimes difficult to follow because various factors needed to be taken into consideration, given how apparently identical marks could refer to very different cases in practice.

Many other printers also complained about the marking process being too strict and constraining. John, a team leader, pointed out the abstract nature of marks in different contexts. He explained that during a meeting where different representatives gathered from all the departments of Crystal Print, some attendees did not seem to grasp the difference between 60 and 70, and the different possibilities underlying the marking process. The simplification of such complex issues into a numeral entity did not reflect the problems that could arise during a print run. Printers also explained that it was sometimes hard for them to imagine what a 65 would look like given the multiplicity of possibilities, let alone for the management. This led to some printers raising concerns over the ways these figures appeared in reports to daily production meetings and monthly management meetings.

Alex, another printer, also described the contrasting ways in which identical marks were repeated into action and how certain marks attract different levels of attention. This included situations where the marks appeared to be taken for granted and unquestioned matters of fact, whereas in other circumstances the overall mark was raised as a matter of concern and discussed in further detail. He mentioned a case where two copies were assigned a mark of 70 ("good" category). Although the first had lost all 10 points on the register (an important criterion), this issue was not raised or questioned in the daily production meeting. However, during a daily production meeting in the following week, a different title also obtained a mark of 70 (5 points lost on layman density and 5 on the register). In this case, the marks and problems were discussed in detail with a list of actions to be undertaken. These actions took the form of specific calibrations to be performed on the presses and an increase in the levels of control. In other words, Alex described how both assessments were attributed with an "identical" mark (70) and generally seen as "good" within the marking process, but only the second case attracted a whole series of discussions, explanations, actions, and interventions.

During conversations with the printers, it also became apparent that in addition to questioning the "objectivity" of the marks, some expressed little confidence in the standardized eight criteria to measure quality (and in particular the three "important" areas). However, despite the printers' concerns, the managers described this standardized measure as an effective system for assessing the quality of the runs. Furthermore, some of the printers recounted their concerns not only in terms of forcing them into actions that they associated with "poor" practice, but

also how certain ratings could provide the "wrong impression" elsewhere (reports and meetings). Martin, a printer, suggested that "it's all well and good introducing these new measures for quality and ink usage, but sometimes other things happen that are beyond your control or you just know you can't do it that way." Whereas Martin was resigned to the fact that sometimes you can end up in trouble despite trying your best, it was clear that many printers were frustrated with the apparent inflexibility of certain routines, especially when they went against "good" practice. As Simon, another printer, stated, "It's really frustrating when you know it's not the best you could have done.... You have some new standard or requirement which you have to follow and sometimes it's ok, but sometimes you just end up with something which is total crap."

5. Analysis and Discussion

By going beneath the repetition of organizational routines and different images of stability and change, this paper seeks to explore the repetition of routines through difference by looking at the intensive/extensive relationship, the role of sociomateriality in the repetition of routines (with a focus on scripts and practices of simplification/amplification), and the interplay between matters of fact and matters of concern.

Fundamental to our research is a shift away from viewing entities as existing in some essential, stable, and linear form (Farjoun 2010). As Pentland and Feldman (2008, p. 236) argue, routines are often treated like objects, machines, or things, and "widely misunderstood as rigid, mundane, mindless, and explicitly stored somewhere." They also suggest that this essentialist view not only fails to appreciate the generative system of routine making, but also the variability and improvisation required to perform complex organizational routines. This can lead to problems and controversies when new standards are introduced and developed based on this former assumption (e.g., as simple rules, checklists, and procedures) and in situations where different scripts are challenged or resisted with regard to new organizational routines (Pentland and Feldman 2008, D'Adderio 2014). Developing routines in the image of stability and sameness by creating and enacting standardized artifacts may be seen as productive in the sense of "getting things done" and ensuring "good practice" through simplified assemblages (e.g., ink density/usage). However, viewing standards as "dead" (Cohen 2007) in the sense of static, overcoded, rigid, and mindless may be problematic if this limits the possibilities for adaptation in the repetition of routines. In contrast, when viewing standards as "living" and continuously emerging, it is possible to go beyond preconceived assumptions of routines as having some fixed, stable, and linear existence (D'Adderio 2011) by looking beneath the surface level of extensive forms and matters of fact. As illustrated

within this paper, one way of going beyond essentialist and mechanistic accounts is through an exploration of the different intensive forces, sociomaterial processes, competing scripts, and different practices of simplification and amplification connected to the performativity and dynamicity of organizational routines. As D'Adderio (2011, p. 213) explains, capturing "the microdynamics by which formal routines as inscriptions are brought to life" is a crucial element in making sense of routines in practice. This has been fundamental to this paper when examining the tensions and clashes between different competing views of the world and different material and nonmaterial forces of attraction and engagement surrounding the intensive/extensive relationship. Our contribution is therefore to show how standards are brought into life through a process of repetition and the potential implications for organizational change and stability.

5.1. The Repetition of Routines Through Difference: The Intensive/Extensive Relationship

The events surrounding the development of the ink density routine and the reporting of ink usage within the production meetings provides an excellent basis to delve into the repetition of this routine and the making of many different extensive forms. Through observations, interviews, and reviews of documentary evidence, we explored the assembling of intensive forces, the shaping of extensive forms, the performance of different scripts, practices of simplification and amplification, matters of fact, and matters of concern. For instance, managers and printers sometimes used a more mechanistic and essentialist language (e.g., simply following a routine, viewing routine as simply repeating the "same") to describe routines and events. This included situations where densitometer readings were taken as matters of fact, ink levels were altered in line with standardized practices, measurements were recorded, and reports were produced. In contrast to an image of sameness, endurance, and continuity associated with certain claims and statements, closer scrutiny highlighted instead the difference, complexity, and multiplicity underlying these accounts and practices and the impact on organizational outcomes (stability and change). To interrogate this further, we examined the complex and dynamic microprocesses connected to the repetition of standard routines and different images of stability and change.

One particular aspect we encountered through the introduction of ink usage routine concerned the increased levels of accountability (for both printers and teams) in terms of poor ink usage or poor recording practice and how this related to different scripts and practices of simplification. This included densitometer readings, ink density reports, production meetings, management reports, and ink costs in relation to optimal ink densities. Although there were many scripts and simplifications surrounding the routine of ink density usage, it appeared that on

some occasions the routine was a difficult or undesirable pathway to follow (e.g., failing to record the ink levels because they considered it a waste of time, following other scripts relating to quality). Further investigation indicated that sometimes other scripts appeared to take precedence (e.g., getting the paper out the door, ensuring good quality adverts, maintaining damp levels). This included instances where intensive forces emerged from alternative practices of simplification, competing scripts, and an interplay between matters of fact and matters of concern that created different and alternative ideas of what problems were significant and what solutions were required (e.g., time to complete the print run, financial cost of double runs). In these cases, the ink usage script may fade as other scripts, practices of simplification, and intensive forces amplify and assemble around these alternative pathways, problems/solutions, and sets of outcomes. For instance, the factory can incur additional costs due to the occurrence of double runs. These arise when the print run is late and lorries collecting national newspapers from the factories are unable to collect the copies at a specific time. They then have to send another lorry to collect these copies at a later time (i.e., a double run). One of the time pressures therefore associated with producing daily papers on time relates to the heavy financial penalties of double runs. During our research, we encountered several instances when the intensive forces relating to the script of "getting the paper out the door" (e.g., with concerns over double run fines) became amplified as a significant "hot spot" compared to other scripts and simplifications (e.g., maintaining low ink levels).

Although some printers and team leaders would state that they were satisfied with their decisions, at the time, to focus on the issue of timing as opposed to ink density, some also highlighted concerns about how this could reflect badly on them or their team in other spaces and times (e.g., in management reports or meetings). This concern related to the process by which simplified figures and data relating to ink density levels were not only drawn together within graphs, tables, and reports, but also discussed during production meetings and analyzed by management. Other scripts or "credible" explanations of noncompliance seemed to be hidden from view as certain simplified matters of fact took the foreground. In other words, whereas certain decisions to discount the ink reduction script in preference to other scripts (double runs) could be seen as "good" practice within the specific event, during other events these may be hidden behind the scenes (e.g., behind simplified figures within meetings) because these simplifications may fail to amplify the "good" reasons for noncompliance (Garfinkel and Bittner 1967). Not only did this raise difficulties when comparing performance within these meetings, it also shaped other events, as printers often had concerns about the ways in which future simplifications may materialize in other events (e.g., figures indicating poor ink usage for their

team) and alter their decisions based on these future images of reports, meetings, and management analysis.

Decisions may therefore emerge that may not be considered in the "best" interest of the factory (e.g., the team leader or printer may decide to focus on ink reduction at the detriment of other significant scripts). In other words, although the team leaders and printers may try to follow what they consider the "best" course of action, certain scripts and simplifications can interfere with this process. This can place workers in difficult positions (with both the past and future assembling in terms of different actions, experiences, and forces) and can lead to feelings of frustration, especially when they seek to perform their role in a professional manner. This was also illustrated by D'Adderio (2014) in the way the engineers within her study felt they were being forced to comply with standard practice even though this would go against "best" practice.

This inability to defend themselves or explain the "good" reasons for apparent noncompliance within these reports or meetings was also highlighted by many printers as a particular source of frustration. Although for the managers these simplified figures and facts were viewed to provide additional information (e.g., through an overview of ink usage performance and a comparison of team performance against the standards), it was clear that these routines and practices were also raising other problems and matters of concern elsewhere (e.g., ensuring good quality copies, avoiding double runs, etc.). Printers also expressed their concerns that the rigidity of these routines and the limited capacity to adapt to different situations impacted their ability to perform their role adequately. In some cases, this rigidity was actually seen as the actual source of the problem because it would force them into what they considered to be poor printing practices.

5.2. Scripts and Practices of Simplification/Amplification: The Role of Sociomateriality in the Repetition of Routines

Although the ability to flex the routine was considered important to ensuring the production of good copy, printers raised growing concerns about the implications of going against the script of ink reduction (i.e., by producing "poor" ink density figures that form the basis of reports and management analysis). Maintaining this subtle balance was particularly difficult during production meetings. Although team leaders explained that there are often good reasons for an increase in ink usage, they also returned to their teams with a greater focus on the need to reduce ink levels. Printers continued to raise concerns about the pressure to reduce ink levels, especially in situations where they felt it was important to adjust levels to suit other conditions. However, although in some cases the "ink reduction script" was not followed, in other situations, they found alternative ways of maintaining the quality

of the images while reducing the level of ink density (by increasing water levels). Even though it appeared that they were complying with various scripts within the press hall, by tracing these issues into other spaces, it became apparent that this could be at the cost of outcomes elsewhere. For example, increasing the level of water to reduce ink levels could produce damp issues in postpress that could potentiality lead to late print runs and double runs.

Following what could appear as conflicting ideas also reverberates with the notion of working to rule: a form of strike action where workers attempt to stifle outcomes and reduce performance by operating to the strict letter of the rule (formal routine). This connects with the constant process of mediation among different intensive forces and competing scripts that underlie our view of repetition (compared to a simple, rigid, and linear view of routines and particularly of routines as standards). The repetition of routines therefore requires a degree of adaptation and the ability to innovate within different settings and in response to competing scripts. Without this ability to flex and an awareness of how intensive forces may amplify in different settings, making "routines" work becomes a difficult task, one that could create problematic outcomes in many different spaces, times, and forms of action (McLean 2014). However, even though we encountered many events and settings of apparent "resistance" relating to ink reduction, we also observed a great pressure to conform to certain scripts. This was particularly noticeable when considering the intensive forces surrounding the simplified figures and reports attached to the ink usage routine, with simplifications often viewed as unquestioned and taken-for-granted matters of fact.

These findings therefore emphasize the importance of delving further into the repetition of routines by going beyond the apparent cold objectivity of routines as standards by examining the various intensive and creative forces, actions, mediations, matters of concern, and competing scripts. Furthermore, we have also illustrated that while certain intensive forces and actions may not materialize within meetings, as they become excluded, silenced, or hidden from "view," they may still have a significant role to play in the creation of specific outcomes and decisions (Quattrone and Hopper 2006). For example, by using facts and figures to highlight improvements following the introduction of the ink usage routine, it would be possible to explain this in a simple causal way. However, such an analysis would remain at the surface level of essences and fail to capture the complexity behind these "simplified" versions of everyday practice. There are also interesting connections between the ink density routine and the introduction of standard routines to control the quality of the copy in relation to different practices of simplification, the interplay of matters of fact and concern.

5.3. The Interplay Between Matters of Fact and Matters of Concern

The everyday practices and events associated with the implementation of the quality measurement routine also raised many different repetitions in relation to different matters of fact and concern and various controversies and tensions. In this context, we sought to unpack apparently stabilized black boxes in which specific actions were seen by some as simple repetitions in the image of the Same or as matters of fact. This involved exploring how "identical" quality marks were performed very differently in various settings, which we enacted by tracing the actions and forces underlying the operation of the metric system for recording and acting on instances of "good" or "bad" practice (as in the case of the performance of the marks). In contrast to suggesting that this is a simple process of representing the intensive, the tracing process highlighted the heterogeneity and multiplicity of associations aligned to the making of extensive forms and the creation of intensive forces that lie behind the practices of repetition. This enables the researcher to become sensitive to the different scripts and instances of simplification and amplification associated with these routines as particular sociomaterial assemblages emerge. By exploring how printers and managers raise specific concerns connected to routines, we were able to examine how practices of simplification may amplify intensive forces within specific settings and how certain assemblages emerge in relation to specific matters of fact and concern.

If we consider the total score for quality and the ranking into one of the three categories (good, within tolerance, and poor), for example, it is possible to examine the ways in which certain intensive forces may be amplified and assembled in relation to this process of simplification and how ideas of "good" and "bad" practice are repeated into action. For example, whereas the mark attributed to a specific copy may seek to reflect the general state of the copy, it does not account for the particularities of the copy (a 70 can cover up a variety of possibilities and outcomes). Additionally, although the CI manager defined three criteria as important, these sometimes lost their importance once the final mark was assigned. Tensions also arose when print runs received a mark of 70 and were categorized as good, even though an advertiser later complained about the quality of their adverts on this print run.

The simplification of certain actions through these marks also created further problems when it became difficult to unpack or look beneath the marking of the mark (i.e., tracing back to the various problems relating to the print run). These marks were repeated through many events as "matters of fact" (e.g., daily production meetings, quality reports, and management meetings) as other intensive forces "faded" or became "lost" or "silenced" during other events (e.g., the numerical rating of quality, a graphical account of quality assessment over

time). However, we have also seen that, on occasions, printers questioned the objectivity of the marks and the metrics underlying specific events. For example, some printers described the problems when "external" forces enter the scene, acting beyond their control (e.g., a press breaking down, causing a paper to be shifted onto a different press). This was particularly frustrating when they were trying to perform well even though the ratings given to them as individuals or as a team presented them as performing poorly. This relates back to the case of the ink density routine, where they felt that the scripts and practices of simplification (e.g., adjusting ink levels, recording measurements, and discussing collated figures within production meetings) could lead to problems, as certain matters of concern fade beneath the repetition and stabilization of facts and figures.

Finally, by going deeper into the process of repetition, it becomes apparent that things are much more complex and challenging than the early notion of standard routine might suggest. This highlights the importance of unpacking images of stability and stasis (e.g., matters of fact expressed by standards) to gain a greater understanding of the complex relations and assemblages involved in the making of these extensive forms (entities). This is particularly important when considering actions as they emerge through intensive forces coming from past events and future expectations (such as the setting of the ink density standards, reports from the head office, fear of redundancies). Even though these may not be visible within specific settings, these often silent or invisible forces can be significant in the making of entities. This is particularly noticeable where certain matters of fact and simplifications shift further away from the press hall and toward the sphere of management meetings and reports, possibly leading to greater levels of fading and amplifying through specific inscriptions and simplifications (e.g., figures reporting on ink usage over time). This is not to say that "simplifications" are necessarily "bad," because they can be crucial in getting things done. However, as we have illustrated through this discussion, certain assemblages and intensive/extensive relations can produce problematic outcomes for certain individuals, groups, and organizations.

6. Conclusion

Although routines may appear to repeat in a smooth and linear way (i.e., repeating in the image of the same), this paper finds that there are many different intensive forces and sociomaterial or sociotechnical mediations underlying the process of repetition. In other words, alongside images of stabilized (as well not so stable) entities lies a creative and dynamic cauldron of becoming and difference: a complex assembling of microprocesses that not only provides different images of repetition, stability, and change, but also different relational outcomes

and effects. Shifting our thinking of routines toward performativity, agency, and materiality is a distinctive feature of this special issue and the basis of our research. In particular, by drawing on our ethnographic research of organizational routines, the work of Deleuze (2004) and Latour (2004), and recent contributions in routine dynamics, this paper provides a detailed analysis and theorization of the continual assembling of sociomaterial processes and specific images of stability and change underlying the repetition of organizational routines. Below are the three main contributions of this paper:

First, examining the repetition of organizational routines through the conceptual framing of difference and repetition and the intensive/extensive relationship (i.e., how extensive forms or entities are generated alongside the assemblage of different creative and intensive forces) provides an insightful and productive way of thinking through the repetition of routines. Rather than relying on stable, linear, and simple versions of artifactual routines (e.g., viewing standards as "dead" in terms of existing in some discrete and stable form as in the early routine literature), this approach engages with the more recent work within RD that seeks to shift our attention to the performativity of routines as living and situated (Pentland and Feldman 2008; D'Adderio 2008, 2011; Pentland et al. 2011, 2012; Rerup and Feldman 2011; Turner and Rindova 2012), or, as D'Adderio (2014) explains, through a focus on the dynamic and emergent processes of replication. This includes highlighting the importance of capturing the difference and dynamism that lies behind simple images of repetition and exploring how discontinuous links, intensive forces, and distributed actions assemble through different spaces, times, and forms of actions (Jones et al. 2004, McLean 2014). As Deleuze (2004) argues, the spatiotemporal dynamisms that lie beneath the actual qualities and extensities of "things themselves" and should be "surveyed in every domain, even though they are ordinarily hidden by the constituted qualities and extensities" (Deleuze 2004, p. 269). We therefore add to area of RD by characterizing the process that captures the microdynamics underlying the process of repetition.

Second, this paper seeks to contribute to the current work within RD concerning the issue of materiality and the role of different sociomaterial entanglements (D'Adderio 2011, 2014; Pentland et al. 2012). This includes exploring in greater depth this intensive/extensive relationship through a focus on the role of scripts and practices of simplification and amplification. In particular, this provides a conceptual basis to think through the assembling of different material and nonmaterial forces (e.g., relating to the densitometer figures, reports, adverts, standards, ink levels) that underlie the process of repetition. As Deleuze (2004) suggests, the blacksmith does not impose form on matter. In contrast, he treats the metals as active materials, pregnant with form-changing capabilities, and he teases out a form as he is guided through various

intensive forces and moments of experimentation. Printers and managers are engaged in a similar and continual process of form changing, repetition, and experimentation. Therefore, this approach provides a way of examining routines by keying further into the different ways material and nonmaterial forces assemble and become attached to certain matters of fact and concern, competing scripts, and practices of simplification and amplification.

Third, through a focus on competing scripts and the repetition of organizational routines (D'Adderio 2014), this paper seeks to contribute to the research within RD on the interdependence of actions (Feldman and Pentland 2003) and dynamic, complex, and material processes underlying the performance of routines. This includes unpacking the complex interplay between different matters of fact and concern, notions of good and bad practice, and the various practices of simplification and amplification that underlie the emergence of competing scripts. More specifically, this involves tracing the repetition of routines through different spaces, times, and forms of action and via different sociomaterial dynamics relating to fact making (through certain simplifications), amplifications (opening up spaces for further actions), and certain matters of concern (producing tensions and frustrations within particular settings). This is particularly noticeable where some scripts may appear to fade away, whereas others become amplified, and highlights how this process can become connected to images of resistance and/or compliance, notions of good and bad practice, and particular outcomes and effects. As highlighted within this paper, complying with a routine in a particular setting (by following a particular script or set of scripts) can lead to problematic outcomes elsewhere and may even go against what might be considered as good organizational practice. This highlights the benefits of engaging with the situated, active, and dynamic nature of the intensive/extensive relationship that underlies the constant process of repetition, rather than relying on the image of the Same or a "dead" or simply stabilized form of routine.

In conclusion, our research seeks to contribute to the current work within RD, and in particular the stream of work concerned with the emergence of stability and change through routines, by providing a detailed study of the microprocesses underlying the repetition of organizational routines within a newspaper-printing factory. By exploring the processes by which various entities are repeated into action through different creative forces, complex sociomaterial assemblages, and intensive/extensive relations, this approach opens up new spaces for researchers and organizations to examine the repetition of routines by reconsidering the deeper dynamics underpinning different images of stability and change and their organizational consequences. Whereas our paper seeks to contribute to this discussion of repetition, stability, and change, further empirical and conceptual work in this area could provide additional insights into the complex interplay between different sociomaterial forces, competing scripts,

practices of simplification and amplification, and the interplay between matters of fact and matters of concern that underlie the repetition of organizational routines.

Endnotes
[1]These quotes are from the authors' ethnographic research (2006–2013) involving discussions with informants who were fully aware of the authors' role as researchers and that the material could be published as part of this research.

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