

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

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## **ABSTRACT**

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, while 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 – micro processes 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 the work of Deleuze and Latour, our paper therefore contributes to the work on the repetition of routines by further unpacking the generative socio-material dynamics, creative forces and micro-processes that underlie the emergence of stability and change through difference and repetition.

**Key words:** routines, stability, change, repetition, difference, scripts, simplification, amplification

## **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). While 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 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 non-humans 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 socio-material 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 micro-processes underlying the repetition of routines rely on and create complex socio-material 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 socio-material 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 micro-processes, the 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: How can we go beyond early essentialist and black-boxed images of repetition, stability and change in order to capture the complexity, difference and heterogeneity underlying the repetition of organizational routines in practice? How can we theorize the different micro-processes, creative forces and socio-material 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.

In order to delve deeper into the socio-material assemblages and micro-processes underlying the repetition of routines, our research drew on the conceptual thinking underlying the work of Deleuze (2004), 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 socio-material relations, assemblages, forces and actions that underlie an alternative view of repetition. Such a shift allows us to examine in more detail the various micro-processes 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 on-going 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 socio-material assemblages. In order 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 and Latour, which provide the conceptual thinking underlying this paper.

## **2. ROUTINES AND REPETITION**

### **Organizational Routines, Stability and Change**

While a dense theoretical plurality underlies the study of routines (Becker, 2004), Feldman and Pentland (2003) provide an all-embracing definition of routines as “*repetitive, recognizable pattern of interdependent actions, involving multiple actors*” (2003: 95). This definition highlights the collectiveness of routines (Nelson and Winter, 1982; Lazaric, 2000), the view of routines as “*effortful accomplishments*” (Pentland and Rueter, 1994: 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. While 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). While not predetermining the action of the routine participants, the ostensive not only structures and shapes further actions, but also connects to the re-shaping 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 re-shaping 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, while 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 socio-materiality of agency and ideas of materiality.

### **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 non-human 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 Haerem (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) also highlights the importance of keying into the micro-dynamics, performativity and materiality of organizational routines and the different ways in which "*artefacts as intermediaries shape the interactions between different sides of routines*" (2008: 786). 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 micro-dynamics 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 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), "*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*" (2011: 213). The co-performance 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): "*One does not step into the same river twice*" (Heraclitus); *There is no new thing under the sun (Ecclesiastes)*" (2007: 316). Such reflection is aligned with D'Adderio's (2014) examination of similarity as an emergent outcome of different socio-technical 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. While 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 micro-processes 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 and Deleuze, whose ideas provide vantage points for examining our understanding of stability and change through difference and repetition.

### **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 pre-established 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. In order 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 pre-established 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), "*we produce something new only on condition that we repeat*" (2004: 113). 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, while 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.

### **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: 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), while

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, while the use of Deleuze's 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 micro-processes 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**

#### **Introducing the empirical site: Crystal Print**

Crystal Print is part of a national media company with several newspaper-printing factories spread over the UK. 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, pre-press, press hall and post-press 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. This has 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 are seen as attractive ‘solutions’, especially as ‘problems’ became 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, quality, planning and measurement within the factory. This was illustrated by the vast array of new organizational routines, standards, measurement and assessment techniques that have been introduced within Crystal Print.

### **Data collection**

Our methodological approach to study routines within this newspaper-printing factory took the form of an ethnographic style of investigation. 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 was 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 2006/7 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 between 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. managing director, production and engineering managers, H&S managers, HR 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. In addition to providing opportunities to understand the technical complexities of the printing process, 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; post-press 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 (KPI) meetings, daily production meetings) and the continuous improvement (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.

### **Data Analysis**

In order 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 in order 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 this data (e.g. ink density, routines, quality assessment, standards, color register, Lean, 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 micro-dynamics 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 on difference and repetition and the intensive/extensive relation (Deleuze, 2004); 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 micro-processes 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 vs 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 micro-processes 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.

##### **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, 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 towards 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.

While 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, while 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.

### **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 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 level 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 'out-performed' 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 in order 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*" (2013). These ink density figures were seen as establishing future standards of 'good' practice for the factory and as producing a more detailed estimation of over-costs 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 amongst 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.

### **Redefining organizational routines and views of ‘best practice’**

More densitometers were purchased in order 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. In order 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. Although in order 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 in order 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 non-compliance.

During these meetings, instances would arise where team leaders would highlight a specific reason for apparent levels of ‘poor’ ink usage. While this may be 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 be discussed and certain explanations would not be requested. Although some team leaders were relieved to avoid discussing the reasons for any apparent non-compliance, 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 were 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, in order 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. While this was seen as a ‘solution’ to complying with the ink density routine, damp copies could create additional problems elsewhere (jams and delays in post-press production). Therefore, ‘good’ practice for some was not always ‘good’ for others.

### **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 the given situation. As highlighted above, this could include cases where on one hand they may be criticized for over-using 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 in order 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*” (2013). Many printers expressed concerns about the fact that they were being forced to remain within the constraints of the ink density script in order 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 post-press. 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.

### **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 ten 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 ten points could be awarded for each area (10 points for no defect, 5 points for one defect and zero if two or more defects are reported, or a very significant defect is identified) leading to an overall mark over eighty. 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*” (2013). He also explained how sometimes customers would refuse

copies based on quality issues. If 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). While 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 as 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.

### **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*” (2013). 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). While 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 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 as 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, while 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). While 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 (five points lost on layman density and five 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 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”* (2013). While 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 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”* (2013).

## **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) argue, routines are often treated like objects, machines or things and *“widely misunderstood as rigid, mundane, mindless, and explicitly stored somewhere”* (2008: 236). 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 regards 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, over-coded, 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) explains, capturing "*the micro dynamics by which formal routines as inscriptions are brought to life*" (2011: 213) 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 non-material 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.

### **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 and 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 altered in line with standardized practices; measurements recorded and reports 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). In order to interrogate this further, we examined the complex and dynamic micro-processes 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. While 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 as they consider 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 ‘hotspot’ as compared to other scripts and simplifications (e.g. maintaining low ink levels).

While some printers and team leaders would state that they were satisfied with their decision, 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 non-compliance seemed to be hidden from view as certain simplified matters of fact took the foreground. In other words, while certain decisions to discount the ink reduction script in preference to other scripts (double runs) could be seen as ‘good’ practice within this specific event, during other events these may be hidden behind the scenes (e.g. behind simplified figures within meetings) as these simplifications may fail to amplify the ‘good’ reasons for non-compliance (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’ interests 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, while 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 non-compliance within these reports or meetings was also highlighted by many printers as a particular source of frustration.

While 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 capacity to adapt to different situations was limited and this impacted on their ability to perform their role adequately. In some cases, this rigidity was actually seen as the actual source of the problem as it would force them into what they considered was poor printing practices.

### **Scripts and practices of simplification/amplification: the role of sociomateriality in the repetition of routines**

While 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. While 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, while in some cases the ‘ink reduction script’ was not followed, in other situations, they found alternative ways of maintaining the quality of the images whilst 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 within post press that could potentially 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 (as 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, 2013). 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 fails 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.

### **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, while 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, while 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.

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 are trying to perform well even though the ratings given to them as individuals or as team present 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) in order 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 towards 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’ as 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**

While 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 socio-technical 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 micro-processes that not only provides different images of repetition, stability

and change, but also different relational outcomes and effects. Shifting our thinking of routines towards 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 and the work of Deleuze, Latour and recent contribution 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:

*Firstly*, 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; Rerup and Feldman, 2011; Pentland et al., 2012; 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, 2013). As Deleuze (2004) argues, the spatio-temporal dynamisms that lie beneath the actual qualities and extensivities of ‘things themselves’ and should be “*surveyed in every domain, even though they are ordinarily hidden by the constituted qualities and extensivities*” (Deleuze, 2004: 269). We therefore add to area of RD by characterizing the process that captures the micro-dynamics underlying the process of repetition.

*Secondly*, 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 non-material 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 non-material forces assemble and become attached to certain matters of fact and concern, competing scripts and practices of simplification and amplification.

*Thirdly*, 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, while 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 micro-processes 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. While 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.

## **ACKNOWLEDGMENTS**

We would like to thank the patience and support of those within Crystal Print and the valuable comments and suggestions from Luciana D'Adderio, Michael Bresnen, Guillaume Chomicki, Edward Granter, Damian Hodgson, Oz Gore, Dean Pierides and the anonymous reviewers of this paper.

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