

On Routines and Generative Systems: Investigating the Emergence of Duty Prosecutors using Critical Realist Case Study Principles

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On Routines and Generative Systems: Investigating the Emergence of Duty Prosecutors using Critical Realist Case Study Principles

Completed Research Paper

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Abstract

Drawing on the notion of mechanisms as systems of constitutive rules, this paper advocates a reappraisal of the generative systems metaphor in routines studies. While the recent practice-turn to routines studies has turned a blind-eye to the notion of generative systems, this paper endeavours to use critical realist tenets to shed a new light on the notion of generative systems. By analyzing the emergence of Duty Prosecutors as an instance of routinization in the making, the paper deploys critical realist case study principles that unpack the underlying structural mechanisms in a counterfactual fashion. Theoretical implications are discussed by highlighting that the structural nexus of position-practice relations is constitutive and, therefore, generative of patterns in variety.

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Introduction

Organisational routines may be conceived of as generative systems that produce recognizable, repetitive patterns of interdependent actions, carried out by multiple actors (Feldman and Pentland 2003; Pentland and Feldman 2008). Yet the “generative systems” metaphor is frequently neglected. For instance, the very scholars who have advocated this definition of routines have repeatedly underplayed the notion of a “generative system” to focus on the “repetitive, recognizable patterns of interdependent action” (Cf. Feldman, 2016: 24; Feldman, et al. 2016: 505; Pentland et al. 2010: 919; Pentland et al. 2011:1370/1373; Pentland et al. 2012: 1485). The systematic neglect of the “generative system” metaphor is justified because it fits the practice turn, a research agenda that focuses on “action”, that is, “what actors do” (Pentland et al. 2012: 1484) regardless of whether these actions are performed by humans or machines.

According to this worldview, actions in general and socio-material networks of actions in particular can capture underlying “generative mechanisms” because one can infer, for instance, the actors’ dispositions from the actions being performed. Accordingly, “the patterns of action are necessary *and* sufficient to infer the existence of some generative mechanism” (Pentland et al. 2010: 919; their italics) regardless of whether we are dealing with skills (Nelson and Winter 1982), capabilities (Cohen et al. 1996), propensities (Becker 2004), dispositions (Birnholtz et al. 2007; Hodgson 2008; Knudsen 2008) or stored behavioural capacities (Hodgson 2003; Hodgson and Knudsen 2004). Furthermore, according to Pentland and colleagues, the practice-turn can help resolve the paradox of the (n)ever changing world because it shows that routines have the potential to generate new patterns of action from within despite their superficial stability (Pentland et al. 2011). The two layered-structure of routines encompassing ostensive (deep layer) and performative (surface layer) aspects can shed a new light on the (n)ever-changing-world paradox because “the ostensive aspect of the routine remains stable, even though the performances are highly diverse” (Ibid: 1380). Hence, according to the practice-turn, organisational routines are endowed with endogenous processes of variation-selection-retention which capture routines formation (Cohen and Bacdayan, 1994; Rerup and Feldman, 2011), inertia (Howard-Grenville, 2005; Kilduff, 1992; Nelson and Winter, 1982; Scott, 1995), endogenous change (Feldman 2000; Feldman and Orlikowski, 2011; Pentland et al. 2011) and learning (Levitt and March, 1988; Narduzzo et al., 2000; Zollo and Winter, 2002). This approach, these scholars suggest, breaks away from the mechanistic view of routines as fixed responses to given stimuli (March and Simon, 1958), thus opening up new possibilities in terms of equifinality and multifinality (Pentland et al., 2012).

Though valuable, this approach seems to mirror the Parsonian turn to the “unit acts” (Parsons, 1937). Hence, it “seems to conflate the idea of action as an event with the relations involved in it” (Elder-Vaas 2007: 417). When studying action (i.e., what actors do), what are we precisely analysing? Is the unit of analysis the singular action (i.e., the event), the process (i.e., the sequence of events) or the relation to a pre-existing role system (i.e., the position-practice system)? Note that Pentland and colleagues imply that their turn to actions (or “unit acts”) should enable researchers to capture single events, processes and underlying generative mechanisms at once but they systematically neglect to analyse the pre-existing (role) positions and their relatively-stable relations (Iannacci and Hatzaras, 2012; Mutch, 2013). Note also that descriptions of routines restricted to the surface (or performative) level are bound to be refuted or modified every time substantial changes occur on that level, thus calling for a more nuanced descriptions of depth ontology. By capturing routines variation, performative accounts miss out important ontological nuances that explain stability, regularity and patterning (Tsoukas, 2000). Hence, the impetus for this research is a deeper description of the complex phenomenon of organisational routines. In this paper we ask the following question: what is it about routines that warrants their generative and systemic properties?

Our purpose is to perform a figure-ground reversal so as to cast in the foreground that which lies in the background (i.e., the generative mechanism). If routines are first and foremost “generative systems”, they may exist independently of their manifestation. They endure even when agents are not acting. For example, Camp Polar Grove routines endure even when the children’s camp goes dormant in the winter (Birnholtz et al. 2007). By the same token, and to anticipate our findings, in the criminal justice system context, the standard operating procedure (SOP) for prosecuting new crimes endures even when there are no new criminal offences. In addition, routines (i.e., the generative systems or mechanisms) act in their normal way even when the associated patterns of actions are unrealised due to intervening or countervailing factors (Bhaskar, 2008). For example, again to anticipate our findings, the “Full Code test

decision” may be unrealised because of countervailing factors whereby, due to the lack of evidential material, the Duty Prosecutor has not been able to charge the suspect in accordance with the Full Code test (which prescribes a realistic prospect of conviction). Regardless of this countervailing factor, the SOP for prosecuting new crimes will be enacted in the normal way through the application of the threshold test prescribing a minimal amount of evidence even though in this particular instance it did not trigger (or generate) the “Full Code test charging” decision because there was no realistic prospect of conviction. The argument of this paper is straightforward: we advocate a figure-ground reversal because it is the relatively-stable relationship between (role) positions and (social) practices that has the power to generate new events out of absent possibilities (e.g., new charges) and, indirectly, the patterns in variety. Thus, routines are not about actions but underlying mechanisms that have the power of generating those actions. More in general, socio-material networks of actions presuppose underlying mechanisms residing within structures conceived of as internally-related components be they physical (e.g., cells, artefacts, etc.), social (e.g., roles) or conceptual (e.g., ideas, knowledge, etc.). It is the operation of these underlying mechanisms that triggers the repertoire of responses to given stimuli. Far from portraying routines in mechanistic terms (Cf. Pentland et al., 2010: 933), we show that patterns of action emerge from underlying mechanisms residing within deeper structures. As Gerring (2008: 163) argues “to say mechanism in a contemporary context does not mean that one is wedded to a mechanistic causal account modelled on Newtonian physics”. The remainder of this paper is structured as follows. After this brief introductory section, we review some background literature on critical realism in section two. Section three reviews different perspectives on mechanisms and relates them to the research approach being deployed. Section four outlines our research design. Section five breaks down our data analysis into a sequence of five steps (Wynn and Williams, 2012). Section six discusses our findings and section seven concludes our work with theoretical implications bearing on the study of routines.

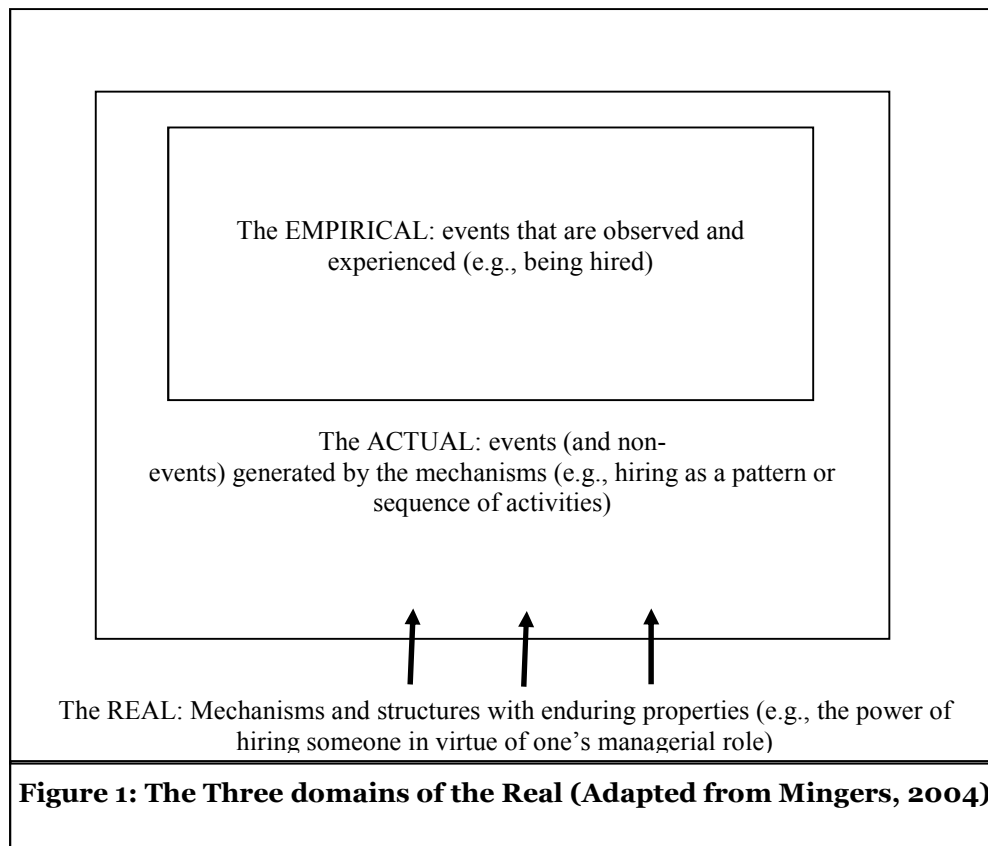
Background: Introducing Critical Realism

Critical realists assume that the natural and social worlds consist of complex structures that exist independently of our knowledge of them (Tsoukas, 2000). For realists, patterns of events in general and patterns of interaction, in particular, stem from underlying generative mechanisms (or causal powers) which reside within complex structures. For example, the hiring mechanism within a University, i.e., the managerial power of hiring new members of staff, exists independently of the pattern of action, i.e., “attracting candidates to apply, screening applicants, choosing applicants, and, if a positive decision is made, extending an offer” (Feldman and Pentland 2003: 96). Instead, this power resides within a complex social structure of (role) positions and (social) practices whereby specific individuals (X) are granted the power (Y) of making hiring decisions within the University context (C) (Iannacci and Hatzaras, 2012; Kallinikos et al., 2013). Hence, within the University structure of superior-subordinate relations, there are particular (role) positions that endow their holders with specific powers, that is, with characteristic ways of acting as role incumbents (Tsoukas, 2000).

Not only do critical realists distinguish between the (structured) physical and social worlds and our knowledge of them. They also argue that reality consists of three separate but interrelated domains, namely the Real, the Actual and the Empirical (Bhaskar, 2008). The Real is whatever exists whether natural or social (Sayer, 2000). The real is the realm of objects, their structures and mechanisms (or causal powers). For example, bureaucracies are social objects which are endowed with certain structures and powers, “that is, capacities to behave in particular ways, and causal liabilities or passive powers, that is, specific susceptibilities to certain kinds of change” (Ibid: 11). As researchers, our task is to identify these structures and powers, such as, for instance, “the way in which bureaucracies can process large volumes of routine information very quickly, in virtue of their structure (hierarchical organisation, specialisation, and filing systems, etc.)” (Ibid: 11). Furthermore, in the social world, individuals’ roles and powers (i.e., abilities to act in certain ways) are internally related because they presuppose each other and are “only intelligible within the context of a social institution or practice” (Mingers, 2004: 95). Thus, for instance, in a University context, superiors exist only in relation to subordinates (and vice versa). “The powers which they can draw upon depend partly on their relations to one another, and to relevant parts of the context, such as educational institutions” (Sayer, 2000: 13). Put differently, causal powers are instantiated within social structures (i.e., relatively-stable relations between roles) and, more broadly, within complex systems whose behaviour depends on the relations between their components rather than the properties of the components in isolation (Mingers, 2007).

Whereas the Real refers to structures and mechanisms (or causal powers), the Actual refers to what happens when those powers are activated (or actualised) within structured objects. The Actual relates to process, that is, the dynamic behaviour of the system over time (Mingers, 2007). For instance, when the bureaucracy's powers are activated within a (social) structure of superior-subordinate relations, the organisation will engage in specific activities such as hiring and firing, classifying and invoicing, etc. By the same token, within high-velocity organisations, managers draw on pre-existing structures to make sense of fast-changing environments and act accordingly (Eisenhardt, 1989). Thus, they activate their power to create standard operating procedures (SOPs) through "adaptive sense-making" processes (Bogner and Barr, 2000). The Actual is conceptually related to events, that is, facts that happen only once (e.g., a merger, a bad year, etc.) or sequences of events (or processes) that result from the same mechanism (Aaltonen and Tempini, 2014). "Given long enough, all production processes become events since the produced component will exist and then disintegrate. Equally, with a short enough time horizon all events themselves become processes as we observe their unfolding" (Mingers, 2006: 176-177). Events that occur, whether facts or processes, only do so against a background of absent possibilities (Bateson, 1972; Kallinikos, 2006; Mingers, 2011). "Events carry information because the occurrence of an event reduces the possibilities of what might happen to what actually does happen, as Shannon and Weaver (1949) argued. In particular, an event (which includes a sign or message) carries the information about what caused it, or led to it. [Sic] Such information exists independently of any observer, indeed, it might never actually be observed. Nevertheless, it carries with it the information concerning its own genesis" (Mingers and Willcocks, 2014: 57).

The Empirical instead is the domain of experience. Though experience is often contingent, it can successfully refer either to the Real domain (i.e., structures endowed with mechanisms or powers) and/or the Actual domain (i.e., activated powers within structured things). For example, employees may experience being made redundant when they are called for an appraisal meeting (i.e., the event) by their Line Managers (i.e., their superiors in the hierarchical structure). Though we may observe such things as the formal structure of organisations (e.g., an organigramme) or managers calling for process-review meetings, some structures (e.g., informal structures) and processes (e.g., procedures embedded within IT artefacts) may not be observable. Though observability can make us more confident about what exists, existence itself is independent of observability (Sayer, 2000). Thus, critical realists espouse a causal criterion for existence rather than a perceptual one because they attempt to discover what the effects of specific objects would look like if they were really endowed with certain structures and mechanisms (Mingers, 2004). Critical realists use retroductive reasoning whereby they start from unexplained phenomena and propose hypothetical mechanisms post hoc to fill their knowledge gaps (Mingers, 2004). A crucial implication of this reasoning is that mechanisms (i.e., powers) may exist unexercised. "Hence, what has happened or be known to have happened does not exhaust what could happen or have happened" (Sayer, 2000: 12). Figure 1 below summarises these core ideas.



Conceptualising Mechanisms in relation to Case Study Approaches

There are various notions of mechanisms (Gerring, 2008; Hedström and Ylikoski, 2010; Mahoney, 2001). Some scholars define mechanisms as the cogs and wheels of the causal process through which the outcome to be explained is brought about (Elster, 1989; Hedström and Ylikoski, 2010). Other scholars instead put their emphasis on the fact that mechanisms are unobservable entities that are sufficient to produce the outcome of interest (Mahoney, 2001). Yet other scholars have come up with a minimal (or core) definition that views mechanisms as causal pathways or processes leading from causes to effects (Gerring, 2008). However, these definitions are profoundly related to the type of research one is undertaking. Assuming that the researcher is deploying a research strategy based on the case study method (Wynn and Williams, 2012), there are at least three research designs that one can follow (Blatter and Haverland, 2012) and, therefore, three distinct definitions of mechanisms. Scholars using process-tracing methods (George and Bennett, 2005) have argued that mechanisms consist of pathways or processes by which particular effects are produced (Avgerou, 2013; Gerring, 2008). For example, Bygstad (2010) has built his explanation for innovation in information infrastructures on the interplay between macro-micro mechanisms (or processes) and micro-macro mechanisms (or processes), the former explaining how wholes enable and constrain their various parts, the latter referring to more emergent behaviours.

Other scholars instead have adopted a multi-method approach that interweaves an inductive case study with a more deductive case survey method (Henfridsson and Bygstad, 2013). According to these scholars, mechanisms are self-reinforcing processes that presume highly-contingent phenomena (or contextual conditions). They operate in multiple configurations (or combinations) that lead to successful evolution outcomes. However, there is at least a third approach to case study research which is based on the quasi-experimental (co-variation) logic (Blatter and Haverland, 2012). According to this approach, case study research can be likened to an experiment where the treatment (e.g., an IS investment) is necessary and sufficient to cause the outcome. Here causation is established counterfactually (Blatter and Haverland, 2012). Accordingly, to establish the effect of a factor on the outcome of interest one must make sure that in the absence of this factor, the outcome would not have occurred in that particular case (Danermark et

al., 2002; Durand and Vaara, 2009). Broadly speaking, this approach conceptualises mechanisms as unobservable causal factors that must be unpacked from the structural context where they are embedded in a counterfactual fashion. Table 1 below summarises these three approaches.

	Process-tracing (inductive) research approaches	Multi-method research approaches (both inductive & deductive)	Quasi-experimental (deductive) research approaches
Mechanisms	Macro-micro processes and micro-macro processes (e.g., Bygstad, 2010)	Self-reinforcing processes working in conjunction with each other within pre-existing contextual conditions (e.g., Henfridsson and Bygstad, 2013)	Unobservable causal powers that must be unpacked counterfactually (e.g., this paper)
Theoretical approach	A theory of assemblages as entities that are the products of historical processes (Delanda, 2006)	Context-Mechanism-Outcome Configurations (Pawson and Tilley, 1997)	Philosophy of language to draw out the structural features of culture (Searle, 1995)
Timescale	Diachronic (events unfolding through time in an evolutionary fashion)	Diachronic (events unfolding through time in an evolutionary fashion to develop contingent generalisations)	Synchronic (events occurring at a given moment in time in an emergent fashion)

In this paper, we take the third approach because we want to investigate the emergence of a new formal position (i.e., the position of Duty Prosecutor) and, therefore, a new position-practice system (i.e., the two-way interaction system between Investigating Officers and Duty Prosecutors) in the English system of criminal Justice (i.e., the context of investigation). We argue, for example, that the complex set of relations between Investigating Officers and Duty Prosecutors has the power to generate events (e.g., charging decisions) and associated patterns of action (e.g., one-way or the two-way information flows between these two agents or actors) by means of interlocked sets of constitutive rules of the type “X counts as Y in context C” (Iannacci and Hatzaras, 2012; Kallinikos et al., 2013).

Methodology: Research Design

Our research design is based on an explanatory case study aimed at explaining the factors presumed to cause a given outcome (Wynn and Williams, 2012; Yin, 2014). Several IS scholars have argued that the case study method is the best approach to uncover the causal mechanisms and contextual factors that generate the phenomenon of interest (Wynn and Williams, 2012). Case studies are particularly suitable

¹ Please note that inductive vs. deductive refers to research approaches rather than logical thought operations (Cf. Danermark et al., 2002: 79-114). In the ongoing dialogue between theory and data (Ragin and Amoroso, 2010), a researcher’s approach is more inductive if the starting point is data rather than theory. We wish to thank an anonymous reviewer for her insightful comments on an earlier draft of this table.

for situations where there are many more variables of interest than data points (Ibid). Though multiple approaches are appropriate for case study designs (Blatter and Haverland, 2012), in this paper we use Yin's (2014) quasi-experimental logic which likens case studies to laboratory experiments. Both laboratory experiments and case studies strive for "how" and "why" questions but case studies are particularly fruitful strategies for studying contemporary events in their real-life contexts when the boundaries between the phenomenon of interest and its context are not clear-cut (Yin, 2014). While laboratory experiments divorce the phenomenon of interest from its context by attending to only a few variables and controlling for others, case studies enable researchers to move from surface to depth (Smith, 2006), thus taking context seriously and unpacking important causal conditions.

Accordingly, the phenomenon of interest ("our case") is an instance of routinization in the making, namely the emergence of the "Duty Prosecutor" (Iannacci, 2014). Multiple data sources were used for the purpose of investigating this phenomenon in its real-life context. Furthermore, data collection and analysis were guided by theoretical propositions informed by critical realist tenets (Mingers, 2004; Wynn and Williams, 2012). Table 2 below summarises the data sources used in this paper.

	Interviews (average duration 120 minutes)	Focus Groups (average duration 180 minutes)	Secondary Evidence (documents)
Number	22	8	35

Several principles have been formulated for conducting critical realist case study research in information systems (Wynn and Williams, 2012). Though Bygstad et al. (2016) have recently drawn on the concept of affordances to develop a stepwise framework for identifying the structural components of mechanisms, in this paper we use the broader set of principles formulated by Wynn and Williams (2012) because our research does not use the concept of "affordances". As analytical tools for investigating mechanisms, "affordances" are tied up with specific objects (e.g., IT artefacts), thus foreclosing a broader analysis of the social context where routines emerge.

Data Analysis: the Case for the Duty Prosecutor

Step 1

The first step for conducting critical realist case study research consists of "identifying and abstracting the events being studied as a foundation for understanding what really happened in the underlying phenomena" (Wynn and Williams, 2012: 796). The main event under investigation is the emergence of the Duty Prosecutor. In England and Wales there is a clear separation between prosecution and investigation functions, the former belonging to the Crown Prosecution Service (CPS), the latter being the prerogative of the Police. Since many investigations conducted by the Police have resulted in discontinued cases, the Criminal Justice Act (2003) has ratified a new charging scheme (i.e., the Statutory Charging scheme) which transfers pre-charging decisions from the Police to the CPS and grants the CPS the opportunity to provide early advice and guidance with regard to specific lines of investigation. Thanks to the Criminal Justice Act (2003), a new position-practice system has emerged in England and Wales whereby Investigating Officers are expected to consult Duty Prosecutors acting on behalf of the CPS to request early advice and guidance with regard to the lines of investigation they need to pursue (Iannacci, 2014). As remarked by an informant:

The Criminal Justice Act (2003) introduced the concept of Statutory Charging, so the CPS is now responsible for deciding for the charge. So the Officer who is responsible for the case will go to the CPS Duty Prosecutor and present the facts of the case and say: "can this case be charged? And what is the most appropriate offence for it to be charged?" In simple straightforward cases that come within the scheme it might be straightforward to say "charge a defendant with an offence and bail him to attend a particular court". In other instances, the CPS Duty Prosecutor might say "no! It

can't be charged yet. You need to carry out further investigation and obtain evidence as to whatever". There is a much earlier involvement of the CPS and it can even go further back to before the suspect is being arrested because the police may come to the CPS and ask for an early legal advice (Crown Prosecutor #1).

During these consultations, Duty Prosecutors are expected to apply the Full Code test which prescribes two conditions to be met, namely 1) a realistic prospect of conviction and 2) the case must be in the public interest for the offender to be charged (Iannacci, 2014). If the Duty Prosecutor has not been given enough evidence during the consultation but she believes that the offender is too dangerous to be set free, the Duty Prosecutor herself can apply a lower-level test (i.e., the threshold test) which presupposes a reasonable suspicion against the offender. This test, in turn, triggers a process whereby the Investigating Officer is required to gather further evidence by an agreed date to fulfil the Full Code test requirement for a realistic prospect of conviction. As remarked by a Crown Prosecutor:

We also have this concept of a "threshold test". It applies to those cases where the Police because of the character of the suspect wish to keep him in custody but they may not yet have all the evidence. But they can assure the Prosecutor that given an appropriate period of time, they believe further evidence will be made available. So the Prosecutor can make a decision based on what (evidence) she believes will be coming not necessarily what is immediately before her. On that basis, the Prosecutor can charge the suspect now but she needs to arrange an action plan for further inquiries (Crown Prosecutor #2).

Whenever the "threshold test" is applied, a specific date must be agreed between the Duty Prosecutor and the Investigating Officer for a review of the case in accordance with the Full Code tests (i.e., "realistic prospect of conviction" based on sufficiency of evidence and "public interest" tests), these tests setting out the general criteria to regulate the discretion of Crown Prosecutors. Decisions on all charging matters are recorded in writing on an ad-hoc form called the "MG3" form (i.e., Manual of Guidance 3) which contains two sides: the front side is a "request for a charging decision" and must be completed by the Investigating Officer, while the rear side, which is filled out by the Duty Prosecutor, includes the charging decision or, alternatively, either the steps to be taken before this decision can be reached or the reason for declaring no further action (Iannacci 2014). Under the new scheme two procedures are outlined. While straightforward cases can be dealt with over the telephone with the use of electronic exchanges, the more serious cases require face-to-face consultations. The new and revised Guidance on Charging maintains that:

In order to ensure a speedy and responsive charging service, referral arrangements for all but the most serious and complex cases will be to CPS Direct [a team of over 200 Duty Prosecutors based throughout England & Wales]. The police will submit pre-charge reports and key evidence across the electronic exchange (The Director's Guidance on Charging, Fifth Edition).

While the most serious cases require face-to-face consultations between Investigators and Duty Prosecutors, the newly-revised Guidance has ensured a speedy and responsive charging service for the remaining cases by means of telephone calls. In the latter cases, Police Investigators are required to submit pre-charge reports and key evidential material through electronic exchanges whether by direct input in their Case Management Systems, secure e-mails or by fax. Police Investigators must then make relevant arrangements for these case files by telephone.

Step 2

In the second step one needs to explicate the structure and context where events occur by identifying "components of social and physical structure, contextual environment, along with relationships among them" (Wynn and Williams, 2012: 796). Structure is a tricky concept in critical realism but essentially it is used to point to a "set of internally-related objects" (Danermark et al., 2002: 47) whether these objects (or entities) are social (e.g., actors) or material (e.g., IT artefacts). The structural entities under investigation are relational meaning that they are what they are by virtue of the relations they enter into (Ibid). Thus, a Duty Prosecutor exists only in relation to an Investigating Officer (and, symmetrically, the Investigating Officer presupposes a Duty Prosecutor to make her job meaningful). Likewise, the data standards that underpin the electronic exchanges between Investigating Officers and Duty Prosecutors are embedded into a web of internal relations. For example, the two-way interface between Police and CPS IT systems

presupposes the existence of charging messages exchanged electronically through an interactive loop (Iannacci, 2014). The set of interlocked, internal and necessary relations between social or material entities creates the background context where actions and standard operating procedures (SOPs) are enacted. For example, the SOP based on 1) a request for a charging decision; 2) searching the database to find information concerning the suspect; 3) a consultation between Police and CPS; 4) a charging decision (or a request for further evidence or no further action) takes place within a context where Duty Prosecutors have the power of providing early advice and guidance to investigators either electronically or by means of face-to-face consultations.

Step 3²

In the third step one needs to “link the capacities that are inherent within the explicated structural components and their relationships to the specific events which we seek to explain” (Wynn and Williams, 2012: 799). Essentially, one must ask “what makes the phenomenon of interest possible”? (Ibid: 800). To address this question one needs to deploy the principle of retroduction whereby “we take some unexplained phenomenon and propose hypothetical mechanisms that, if they existed, would generate or cause that which is to be explained” (Mingers, 2004: 94). Or, to put it another way, by way of thought operations and counterfactual thinking, one needs to move from a description and analysis of concrete phenomena to the “basic conditions for these phenomena to be what they are” (Danermark et al., 2002: 80). Though there are various theories of social structure (Porpora, 1989), to arrive at “what is basically characteristic and constitutive of these structures” (Danermark et al., 2002: 96) we draw on Searle’s notion of constitutive rules (Searle, 1995). Searle attempts to reconstruct the system of social positions, the norms and rules, as well as the socially (and culturally) acquired dispositions structuring particular activities by looking at the structural features of culture (Ibid). Though social structures, norms, rules and dispositions do not exist independently of agents’ conceptions of what they are doing (Mingers, 2004), within the domain of social reality there is a particular class of events that require human institutions for their existence. Searle labels such events as institutional facts because they exist only by human agreement. Therefore, institutional facts and the institutional reality they presuppose are ontologically subjective because they only exist in relation to human beings. But knowledge about them is an objective phenomenon. Thus, they are epistemologically objective because, for example, the fact that a person is a Duty Prosecutor is not a matter of opinion but can be ascertained as true or false independently of the attitudes and feelings of observers (and participants alike). Hence, institutional facts are epistemologically objective, even though human attitudes and feelings are part of their mode of existence (Iannacci and Hatzaras, 2012).

According to Searle, fundamental to the understanding of institutional facts is the notion of constitutive rules. Searle uses the term “constitutive rule” for rules that define institutional activities. He draws a contrast between regulative and constitutive rules, the former regulating antecedently or independently-existing activities, the latter creating the possibility of institutional forms of behaviour. Constitutive rules take the form “X counts as Y in context C”. Searle refers to this form as the “count-as-locution”. A constitutive rule entails the assignment of a function (Y) to an object, person or state of affairs (X) in a specific context (C), even though the object, person or state of affairs in question does not have the intrinsic properties to perform the function under investigation. Searle argues that constitutive rules are the building blocks of social institutions and that social institutions are interlocked systems of constitutive rules. Searle claims that the assignment of the function (Y) to an object, person or state of affairs (X) is performed by virtue of collective acceptance or recognition. Indeed, it is thanks to such collective acceptance or recognition that power relationships can be explained within a formal system of rights, duties, and obligations, because the very existence of such power relationships presupposes their collective acceptance or recognition (Kallinikos et al., 2013). By way of counterfactual thinking, we claim that constitutive rules are generative. They function as generative mechanisms that make the emergence of a new (formal) position (i.e., Duty Prosecutor) and, therefore, a new position-practice system (i.e., the two-way interactions between Investigating Officers and Duty Prosecutors) possible. In the absence of collective acceptance or recognition, a person (X) would not count as a Duty Prosecutor (Y) in a particular

² This sub-section draws heavily on work published by the first author in *Information & Organization* (i.e., Iannacci and Hatzaras, 2012).

context (C). For example, a self-proclaimed Duty Prosecutor would not count as such because of the lack of an appointment from someone endowed with the power of appointing Duty Prosecutors on the basis of relevant legislation (i.e., the Criminal Justice Act 2003 which, by virtue of being an act of Parliament, presupposes that all citizens are involved in making decisions by means of democratically-elected representatives).

Step 4

In the fourth step one needs to “overcome the tentativeness of inferences derived through retroduction by attempting to validate the existence of the proposed mechanisms” through empirical corroboration (Wynn and Williams, 2012: 801). Essentially, the postulated mechanisms should identify causes that are necessary and sufficient for the observed effects (Ibid). Blatter and Haverland (2012) discuss three criteria to make counterfactual analysis more compelling, namely clarity, historical consistency and theoretical consistency. Though focussing on the logic of pattern matching (Yin, 2014), Wynn and Williams (2012) offer similar criteria because they argue that the postulated mechanisms must survive empirical tests “where survival is indicated by the observation of evidence consistent with what the theory predicts” (Ibid) and that longitudinal research (i.e., historical consistency) is particularly useful within the critical realist paradigm (Ibid). It is clear that in the absence of the Criminal Justice Act (2003), there would have been no Duty Prosecutor. Hence, the relation between this act (a social object) and the Duty Prosecutor (a social actor) is internal and necessary, albeit asymmetrical, because the latter presupposes the former for her existence. Furthermore, this counterfactual requires minimal re-writing of historical contingencies because the English system of criminal justice would still be an adversarial system even in the absence of the Criminal Justice Act (2003). Lastly, the evidence is consistent with a Searlian account of generative mechanisms because in the absence of the Criminal Justice Act (2003) there would be no constitutive rules in motion. Clearly, the Criminal Justice Act (2003) is an act of Parliament and, as such, it is collectively accepted and recognised as a piece of legislation. Accordingly, the absence of legislation would entail the lack of collective acceptance and recognition. As stated by The Director’s Guidance on Charging:

Chief Crown Prosecutors will make arrangements for the deployment of Crown Prosecutors to act as Duty Prosecutors in locally agreed locations having regard to the local business and wherever possible on a face-to-face basis, or to be otherwise available for the purposes of fulfilling the CPS statutory duty. Duty Prosecutors will be available for consultation and will render such early legal advice and guidance, including where appropriate the making of charging decisions as will facilitate the efficient and effective preparation and disposal of criminal prosecutions (The Director’s Guidance on Charging, First Edition).

Step 5

In the fifth and final step the investigator deploys multiple data sources and theories to validate her findings. Admittedly, above we have used multiple data sources (specifically, interviews and documentary evidence) to corroborate our findings. However, while the use of counterfactual thinking enables the exploration of rival explanations, we used only one theory (i.e., the Searlian approach) rather than multiple theories. Again, it is easy to see how alternative but complementary theories fit our account. For example, Archer’s (1995) notion of analytical dualism that separates structure and agency resonates with the idea that constitutive rules reside within structural relations that can be decoupled from the practices and activities enacted by individual agents (or actors). Likewise, it is easy to see that constitutive rules create an interlocked system, thus providing the backdrop for a systemic account of organisational routines.

Discussion

Reconceptualising routines as generative mechanisms is beneficial because it enables routines scholars to perform a figure-ground reversal and, therefore, move from surface to depth. Current accounts of routines systematically neglect the deeper context where patterns of interaction occur (Iannacci and Hatzaras, 2012). We argue that while situated accounts have been useful in highlighting the plasticity of routines, they have missed out the deeper context where the interaction patterns are enacted. The critical realist approach we advocate compensates for this omission because it takes the underpinning structural context

seriously. In the case analysed above, the interactions between Investigating Officers and Duty Prosecutors occur within a pre-existing structural context of laws (e.g., the Criminal Justice Act 2003, the associated Statutory Charging scheme, etc.) and IT artefacts (e.g., Case Management Systems, databases, emails, interfaces, data standards, etc.). It is within this context that these agents act in their characteristic ways. For example, within the Criminal Justice Act (2003), a Crown Prosecutor (X) counts as the Duty Prosecutor (Y) and, therefore, acquires the power to provide early legal advice and guidance with regard to specific lines of investigation (and symmetrically, the Investigating Officer has a duty of requesting an early charging decision). But being a Duty Prosecutor (new X at a higher level of abstraction) and providing early guidance or advice counts as enacting the charging pattern (new Y), and so on. Likewise, a charging message (X) exchanged across the electronic interface counts as the official data standard (Y) within the terms of reference set out by the Data Standards Forum (CJS Data Standards Forum, 2014).

Furthermore, it is not the individual entity but the relational system as a whole that generates the interaction patterns. For example, witnessing or experiencing a two-way interaction flow between Investigating Officers and Duty Prosecutors in the domain of the Empirical presupposes a large set of events in the domain of the Actual. Firstly, the Investigating Officer must file a “request for a charging decision” (i.e., requesting a charge). This request, in turn, will prompt a search for the suspect’s details in the database either to update existing criminal records or to create new ones (i.e., searching). Once criminal records have been retrieved or created *ex novo*, there will be a “consultation” process between Investigating Officer and Duty Prosecutor based on face-to-face or more remote interactions (i.e., meeting or consultation). The consultation, in turn, will enable the Duty Prosecutor to have a more thorough picture of the suspect and, therefore, make a decision regardless of whether she agrees to charge the suspect, ask for further evidence or declare no further action (i.e., charging, asking for further evidence or declaring no further action). In addition, these events presuppose the existence of structural relations between humans (e.g., Police-CPS relations), artefacts (e.g., front-end interfaces and back-end databases and data structures) and humans and artefacts (e.g., the Police and CPS interact by means of direct inputs in their Case Management Systems, email attachments or, more simply, face-to-face interactions). What is more, the actors themselves whether material (e.g., artefacts) or social (e.g., humans) acquire their powers (or characteristic ways of acting) by virtue of mechanisms or constitutive rules of the type “X counts as Y in C”.

We submit that the critical realist approach we advocate is useful because it removes several blindspots. First, it helps us conceive of routines as potentialities rather than actualities (Hodgson, 2008). As such routines endure even when they are not enacted in the domain of the Empirical. Accordingly, the SOP for prosecuting new crimes (i.e., request for a charging decision then searching the database then consultation and then charging or asking for further evidence or declaring no further action) endures even in the absence of an alleged crime. Second, routines (i.e., the generative mechanisms) act in their normal way even when the associated patterns of actions are unrealised due to intervening or countervailing factors (Bhaskar, 2008). For example, the “Full Code test decision” may be unrealised because of countervailing factors whereby, due to the lack of evidential material, the Duty Prosecutor has not been able to charge the suspect in accordance with the Full Code test (which prescribes a realistic prospect of conviction). Regardless of this countervailing factor, the SOP for prosecuting new crimes will be enacted in the normal way through the application of the threshold test prescribing a minimal amount of evidence even though in this particular instance it did not trigger (or generate) the “Full Code test charging” decision because there was no realistic prospect of conviction. Third, it is the system of relations (i.e., the whole) rather than its parts that accounts for the emergence of the patterns in variety. In other words, the constitutive rules are interlocked into sets of internal and necessary relations which are iterative and recursive. Accordingly, the two-way information flows between Investigating Officers and Duty Prosecutors can occur in multiple ways depending on whether (or not) suspects have been charged on the basis of the threshold (further evidence is required) or Full Code test (no further evidence is required).
Figure 2 below summarises these core ideas.

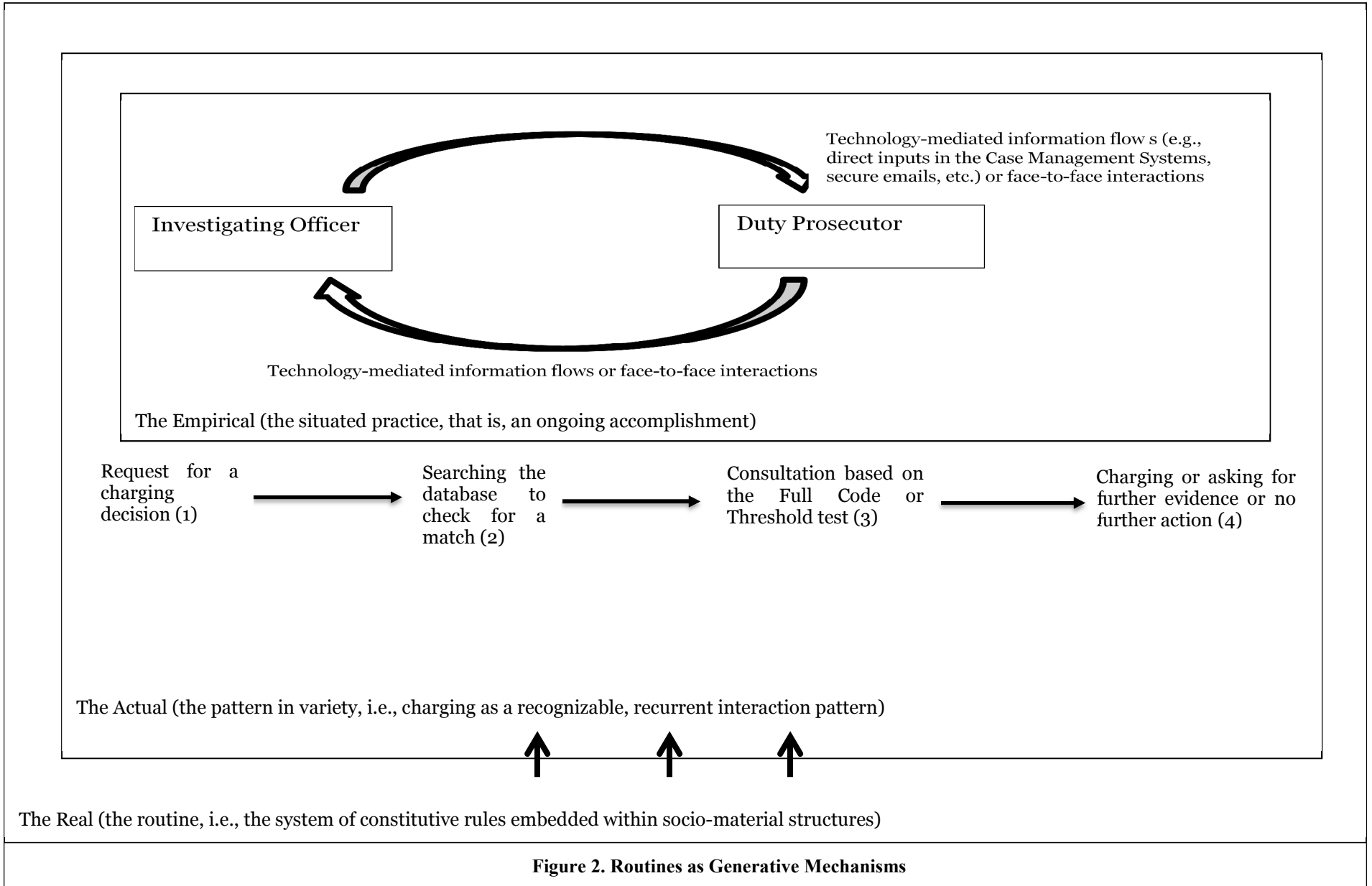


Figure 2. Routines as Generative Mechanisms

Conclusion

Systems are constellations of entities (i.e., physical, conceptual or social) that form wholes, the behaviour of which depends on the relation between the entities more than the nature of the entities themselves (Mingers, 2007). Systems are endowed with relatively-stable relations (or structures) between their entities that enable them to trigger specific behaviours or courses of action. For example, the relatively-stable relation between (role) positions and (social) practices enables the criminal justice system to trigger specific courses of action (or dynamic behaviours). In virtue of their role as Duty Prosecutors, these Prosecutors must check the criminal record of the suspect, as well as the evidence transmitted by the Police Officer to make a decision accordingly. Once consultations occur, there will be dynamic courses of action depending on whether countervailing mechanisms take place or not. For instance, a charging decision taking place in the absence of full evidential material, triggers a request for further information, and, therefore, new patterns of interaction between Police and Prosecutors based on the threshold test. Furthermore, a match between a new offence and criminal records stored in the CPS database leads to a procedure aimed at adding new offences to existing criminal records. A mismatch, on the contrary, leads to creating new criminal records in the database.

Hence, we have situated, ongoing interactions which are underpinned by patterns in variety. Thus, organisational routines go well beyond the interactions observed in the Empirical domain and the patterns in variety occurring in the Actual domain because they are about the generative mechanisms residing in the domain of the Real. Accordingly, we see routines as generative mechanisms that trigger patterns in variety. What is more, these generative mechanisms are iterative and plural, thus creating more complex systems. The (role) position-(social) practice system has the power of generating patterns in variety which, in turn, has the power of generating multiple courses of action (e.g., two-way interaction flows, one-way flows, etc.).

Admittedly, the approach we advocate is not without limitations. Archer (2015) has recently examined several approaches geared towards the study of mechanisms from a structure-agency-culture perspective³. Archer (2015) has described several portrayals of mechanisms under the labels of Structure “light”, Agency “light” or Culture “light” (or some combination thereof). In Archer’s (2015) terms, the current paper would be Agency “light” and Culture “light”. In our attempt to portray the structural features of culture and, indirectly, agency, we have downplayed the role that the agents’ reflexivity plays. As well as reflexivity, we have underestimated the role of human imagination and self-monitoring. Furthermore, from a cultural perspective the role of situational logics was not described. For example, necessary incompatibilities could prompt a contingent and somehow different adoption of constitutive rules. These are insightful areas for further research because they would highlight the combination of structural-agentic-and-cultural mechanisms at play. Rather than a single, overarching constitutive-rule mechanism (or system of constitutive rules), future research could investigate the multiple mechanisms at work “because we ineluctably confront complexes of generative mechanisms” (Archer, 2015: 4).

These limitations notwithstanding, we submit that the structural (and systemic) approach to organisational routines we advocate has three distinguishing features: 1) it enables scholars to understand the structural (or causal) mechanisms that are constitutive and, therefore, generative of routines dynamics; 2) it introduces analytical dualism (Archer, 1995) as a way of unpacking the structural and agentic aspects of organisational routines and investigating their structural emergent properties; 3) it propounds a systemic understanding of routines which is relational. Therefore, it is the nexus of relations which is constitutive of dynamic patterns and flexible performances over time.

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