The Morphogenesis of Organizational Capabilities

Introduction

The capabilities micro-foundation literature has been enjoying "celebrity" status appearing in many special issues of top ranked journals in recent years. In this paper we seek to add our voice to this burgeoning field. Traditional theorising in the field seems to have been polarised on the one hand by utility maximisation of the neoclassical school while on the other by the satisficing principle of bounded rationality. Of late the conversation has taken on an *ontological turn* and battle lines drawn between methodological individualism and methodological collectivism. Both schools of thoughts are variously illuminating in their own right. However, to the extent that transcending the individualism-collectivism divide offers a mutually inclusive solution we suggest looking at the problematic from a third perspective. In this paper we draw on the critical realist ontology to propose a morphogenesis approach to the study of capabilities and its origins. We argue that the *emergent* nature of capabilities is sympathetic to Archer's notion of analytical dualism. As such we expose organisational capabilities as emergent social structures existing in a dialectical and reciprocal interplay between the emergent powers of structure, culture and agency. Defined in terms of patterns of action, we build our argument premised on the *objective* pre-existence of capabilities which serve to condition the situational logic of action. Organisational actors faced with objective situations exercise their own *subjective* properties to weigh the opportunity cost of one course of action over another. Actions endorsing the status quo lead to the reproduction of capabilities (morphostasis) while transformative actions lead to change or dynamic capabilities (morphogenesis). Given that organisations exist in a continuous flow of action the resulting morphostasis or morphogenesis constitutes the anterior conditioning forces for the new cycle of interaction. By maintaining the ontic differentiation between structure and agency the conditions of action are therefore rendered analytically separable from action itself, so enabling their interplay, as opposed to their mutual interpenetration, to be explored.
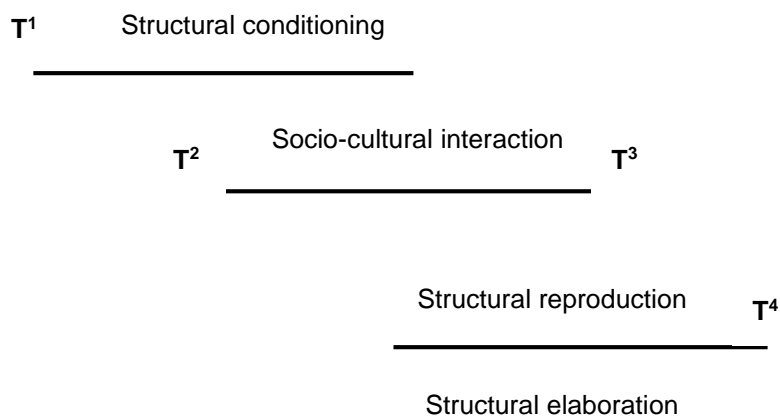
Ongoing Debate in the Capability Micro-foundation Literature

The rise of the micro-foundation project is viewed in reaction to methodological collectivism inherent in the evolutionary agenda. In the evolutionary parlance a firm at any time operates largely to a set of decision rules (Nelson and Winter, 1974). These rules enshrine action possibilities constraining and enabling actions of current actors resulting in habitual practice termed in aggregation as organisational routines. These routines are the building blocks of a firm's capabilities offering ontological security against existential anxieties thus ensuring its survivability. Viewed as a collective effect, routinized practices severely impede on intentionality and conscious motivation for the individual's action. Responding to this primacy of macro level explanation, the basic motivation for the micro-foundations research agenda (Foss and Pedersen, 2014) is to explicate how routines are created and emerge (and change) from individual action, and how they evolve with the subsequent interaction between individual and collective (Felin and Foss, 2005). Notwithstanding, the micro-foundation project has its own sore point in the form of methodological individualism. This conception or rather misconception is partly promoted by ambiguous and at times erroneous statements of its more vocal advocates. For instance, quoting Abell et al. (2008: 492): "We take the position – associated with "methodological individualism" – that the explanation of firm-level (macro) phenomena in strategic management must ultimately be grounded in explanatory mechanisms that involve individual action and interaction." It is therefore hardly surprising that some have argued that micro-foundations seem to deny the causal role of structure (Barney and Felin, 2013). As Elder-Vass (2007b: 474) observes, "methodological individualism usually entails advocating the causal efficacy of human individuals while denying the causal efficacy of social structure." Thus it would seem that neither the evolutionary emphasis on macro effect nor the micro-foundation's preoccupation with individuals on their own merit possess adequate explanatory power of firm level behaviour. Notwithstanding, it is nevertheless widely recognised that the individual is always the basic strategic factor of the organisation (Barnard, 1968; Felin et al., 2012; Ployhart et al., 2014). The flip side of this social coin portrays collective constructs such as institutions and structures as *emergent* and irreducible (Barney and Felin, 2013). As it stands, it seems highly suggestive that the holy grail of capabilities lies in unpacking the micro-macro emergence (Easton et al., 2012) if the apparent extremes associated with collectivism and individualism respectively are to be attenuated. Indeed, Barney and Felin (2013) note that simple aggregation may fall wide of the mark calling for more complex, nonlinear, and "emergent" forms of aggregation. Hence we agree with Mole and Mole (2010) that to fully account for the interplay between the micro and macro we need one of those meta-theories that are used to examine structure and agency. Some have championed Giddens' structuration theory (e.g., Pozzebon, 2004; Sarason et al., 2006). But as Barney and Felin (2013) point out, the effort to remove the dichotomy between micro and macro, with concepts such as structuration (or habitus), is

not completely satisfactory. The problem with structuration, as remarked by Archer (1995: 102), is that it "merely throws a blanket over the two constituents, 'structure' and 'agency' which only serves to prevent us from examining what is going on beneath it." We see critical realism, particularly the version developed by Margaret Archer as offering a more promising if not nuanced ontological lens to unpack the emergent nature of capabilities.

The Morphogenesis Approach – Theoretical Premise

Contrary to determinism and reductionism, Archer's (1995) view of societal influence is one *mediated* by an emergent human property. But such an account of *being* does not entail the unrestricted freedom of agency from structure (Adams, 2006) associated with the notion of voluntarism. Thus in her attempt to avoid what she sees as conflationary accounts of human action Archer makes a case for emergence. She draws on Bhaskar's notion of "*synchronic emergent powers materialism*" – SEPM for short, to accentuate a non-reductionist view of reality in which higher order principles cannot be completely explained by lower-order ones (Bhaskar, 1989: 98). Emergence is essentially relational and embedded in interaction, but nonetheless emergent properties like *organisational capabilities* for instance are not contained in the elements themselves but could not exist apart from them (Archer, 1982). This ontological stratification gives rise to *analytical dualism* in which social structures are held to be *analytically* separate from agential activities. Against this understanding Archer proposes the morphogenetic approach (see figure 1). Essentially, the *morphogenetic approach* is a methodological device premised on the interaction of three autonomous cycles of emergent powers, that of structure, culture and agency. It signifies the understanding that people always act out of structural and cultural circumstances, which their very actions then proceed to modify or sustain (Porpora, 2013). Time is important in this framework, T^1 represents the antecedent circumstances either structural or cultural or both (Porpora, 2013). Archer terms this phase as structural (or cultural) conditioning as it reflects the contextual conditions faced by an agent involuntary placed within an existing social context. People act within their socio-cultural circumstances over time T^2 - T^3 in doing so gradually altering or sustaining those circumstances. The results at time T^4 are the altered or sustained circumstances (elaboration or reproduction) that comprise the antecedent conditions for any further analysis of action. Archer's central concern is to avoid falling into one of the twin poles of collectivism or individualism (Mutch, 2010). As such, Archer agrees with Giddens' primacy of practice (T^2 – T^3) as the generating mechanism of the social. However, Giddens' notion of instantiation means straying beyond the (T^2 – T^3) temporality is futile.

T^1 Structural conditioning

T^2 Socio-cultural interaction T^3

Structural reproduction T^4

Structural elaboration

Figure 1: *The basic morphogenesis sequence (source: Archer 1995: 193)*

Archer's notion of structure predating *practice* seems to suggest that the actions of individuals are fully predetermined by structure. But agents are not generally social dopes; they do not simply frame actions against the structural and cultural dispositions of their environment (at T^1). Through their emergent properties individuals actively *reflect* on the circumstances facing them. It follows therefore that there are two causal forces at work in shaping social actions, the *objectivity* of the social and the *subjectivity* of the individual. For Archer this subjectivity is the essence of our *reflexivity,* and indeed our *humanity.* Moreover Archer refutes any modern conception of actors based on rational choice theory since they do not take into account the causal and *pre-existing properties of the environment* of an action

(Dépelteau, 2008). Instead value rationality (Archer, 2000) is that cornerstone which help shapes the action of Archer's subjects.

Morphogenesis and Organisational Capability

At its most basic a capability has been characterised as "the capacity to generate action" (Cohen et al., 1996: 683). This understanding views capability as *a priori* to action. Yet others view capability in terms of emerging stable patterns of action, behaviour, or practice (e.g., Eisenhardt and Martin, 2000; Teece and Pisano, 1994; Winter, 2000; Zollo and Winter, 2002). Perceived as such suggests that conceptually capabilities cannot be separated from acting or practicing (Felin et al., 2012; Pandza et al., 2003; Schreyögg and Kliesch‐Eberl, 2007). Reconciling these two perspectives provides an understanding of capabilities as both antecedents and outcomes of action. There is therefore a continuous cycle of interaction between [capabilities] and individual's actions (Elder-Vass, 2007a). The idea of cyclical interdependency between capabilities and action brings the notion of temporality into sharp focus. Winter (2012) accentuates the centrality of *time* in discussion on origins of capabilities. The idea that "the study of origins of capabilities is primarily a study of transition (and transmission) mechanisms between ancestors and descendants" (Winter, 2012: 1403) sits comfortably with the notion of capability as antecedent and outcome of action. An examination of the recent literature provides further guidance on how the architecture of capabilities might be understood. Consensus abounds that fundamentally capabilities operate at the level of structure, processes and individuals (Felin et al., 2012; Teece et al., 1997; Teece, 2007). Elsewhere scholars have recognised the role of culture as a capability for action (e.g., Grewal and Slotegraaf, 2007; Lado and Wilson, 1994; Pandza and Thorpe, 2009; Schreyögg and Kliesch‐Eberl, 2007). Grewal and Slotegraaf (2007) for instance remark that a capability is contextually entrenched within the structural, social and *cultural* aspects of the firm. Pulling these threads of thoughts together it is therefore useful to see capabilities as a blend of structural, [cultural], and individual capacities to act (Jackson, 2005). It is against this understanding of capabilities as the interplay between the emergent powers of structure, culture and agency that Archer's morphogenesis approach provides a useful theoretical as well as analytical lens.

Organisational Capabilities - The elusive social structure

Social structure receives most of its attention in sociology where disagreements abound on its ontological status. In this work we prescribe to a view of structure as social relations (Hodgson, 2012). More precisely "as systems of human relations among social positions" (Porpora, 1989: 343). This conceptualisation of structure is consistent with the notion of emergence and stratification celebrated by critical realists. Drawing on Mutch (2013: 38), "critical realism suggests that we live in a stratified world, where what is real at a particular level is the product of tendencies which it is the task of the analyst to explore, always with the imperfect and provisional tools to hand." Mutch believes that one of those tools is the morphogenetic approach. But while morphogenesis explains the development of the relational element over time (temporal element) it does not explain how an entity can possess emergent properties (Elder-Vass, 2007a). Elder-Vass (2008) thus clarifies that an entity is emergent when it possesses emergent properties, and properties of an entity are emergent if they would not be possessed by their parts, were those parts not organised into such an entity. In this sense a non-reductive explanation of an emergent entity depends on the existence of a specific set of *synchronic* relations (Elder-Vass, 2007a) as well as a temporal element. To Archer (1995) these relations are internal, necessary and material from which an emergent entity inherit the casual powers which characterise it. For instance the fluidity of water or its ability to put out fires cannot be explained in terms of its constituent hydrogen and oxygen atoms. It is the fact of being organised into the specific form of water molecules that gives this collection of hydrogen and oxygen atoms the particular properties of water (Elder-Vass, 2005).

Defined in terms of social relations social structures are comprised of social roles (Jackson, 2005) or positions (Porpora, 1989). Drawing on the resources of critical realism, Elder-Vass (2008: 288) argues that organisations are "social entities, composed of human individuals, organised through the roles they occupy in the organisation, and the consequence of these people acting in these roles is to produce the *capabilities* of the organisation as a whole." In short, it can be argued that capabilities can be *fundamentally* conceptualised as emergent social structures. Linking the capabilities approach with the morphogenesis approach can benefit from the notion of path dependency. The idea of path dependency suggests that at any given point in time, firms must follow a certain trajectory of competence development (Teece et al., 1997). This means that a firm's existing capabilities are based on events located in time (Winter, 2012). As action patterns current capabilities are therefore the residue of past actions. These results of past actions are deposited in the form of current situations. They account for

the nature of the extant role array, the proportions of positions available at any time and the advantages/disadvantages associated with them (Archer, 1995). These roles carry varying job titles (Burstein *et al.*, 2010) such as manager, supervisor, trainee, etc., each necessarily and internally related to others (e.g. chief executive – employee) (Herepath, 2014) and to associated artefactual, social, and conceptual resources (Fleetwood, 2005). Organisational roles defined by capabilities thus provide organisational actors with the situational logics (DiMaggio, 1997) for action. Elder-Vass (2007a: 32) argues that "when a role incumbent adopts the behaviours defined by a role (e.g. answering the phone in the call centre if your role is "calling agent"), we have a case of downward causation..." But this is not to suggest wholesale compliance to structural influence in the form of social hydraulics but rather the incumbent's action is viewed as *mediated* by the causal power the role incumbent. Thus the action (during T^2-T^3) of the role incumbent can be explained as the *interplay* between his/her subjective personal properties and powers and the objective properties and powers [at T^1] (Archer, 2007b) of the role occupied. Here when Archer speaks of subjective properties and powers she is referring to factors such as consciousness, reflexivity and intentionality. These are exercised in the *Internal Conversation* (Archer, 2007a). Archer believes that "this inner dialogue about ourselves in relation to society and vice versa is what makes (most of us) "active agents", people who can exercise some governance in their lives, as opposed to "passive agents to whom things merely happen" (2007b: 42). This means that humans cannot just be held in a particular spatial relationship as a result of which role performance becomes automatic (Elder-Vass, 2005). Notwithstanding, the extent that the causal mechanism of an organisation is effective, the behaviour of the role incumbent "in the role" is part of the behaviour of the organisation (Elder-Vass, 2007a). The capabilities of an organisation, then, are the aggregate of the behaviours of its role incumbents in the role. Although the relationship is additive, the capabilities are nevertheless emergent, because they have a *non-linear effect* on each of these behaviours as a result of the fact that the role incumbents behave differently as role incumbents than they would have done in isolation if they were not incumbents of these roles (Elder-Vass, 2007b). Thus on a day-to-day basis an organisational capability (say operational capability or zero level capability) depends on the organisation having incumbents for all essential roles and those incumbents act within the expectation of their roles. But these "stable" action patterns observable at the empirical level which characterise capabilities are not just simply the product of routinized or habitual practices. Nor are they the linear aggregation of actions of atomistic individuals, we maintain that individuals always act out of structured situations.

Discussions

The main thrust of the arguments advanced here remains the fact that although capabilities manifest in observable patterns of action and interaction it does not necessarily mean unconscious and habitual practices as professed in the evolutionary tradition. Moreover individuals are not unrestricted entrepreneurs free of structural influences as promoted by some micro-foundation theorists. From a critical realist perspective we have argued for the interplay between relatively independent emergent powers operating at different time tracts which may or may not be synchronous. Given the organisational context we have paralleled operational or zero level capability to a morphostasis or reproduction cycle. But this is by no means to suggest operational capability as a fixed quantity or to deny morphogenesis or transformation from the day-to-day organisational processes. In fact with Tsoukas (1996: 22) we argue that "in organisations, both rule-bound action and novelty are present, as are continuity and change, regularity and creativity." If operational capabilities can be equated to the morphostasis cycle then morphogenesis is a reflection of dynamic capabilities. DC represents the outcome of corporate agency during T^2-T^3 which leads to structural discontinuity or transformation. Given the strategic nature of DC, here we speculate a theoretical link between *strategy as practice* and capabilities evolution. In combining the ideas of emergence, stratification, temporality and synchronisation the morphogenetic approach thus offers an analytical lens (analytical dualism) which permits an examination of the confluence between the generative powers of structure (and culture) and agency and their reciprocal influence. By maintaining the ontic differentiation between structure and agency, the condition for action are therefore rendered analytically separable from action itself, so enabling their interplay, as opposed to their mutual interpenetration, to be explored (Herepath, 2014). This approach promises a deeper understanding of the antecedent structural, cultural and agential characteristics and their interactional dynamics propitious to structural reproduction (morphostasis) or change (morphogenesis). Consequently, for organisational capabilities, the problematic issue of "how actions reproduce or modify institutions over time" (Jarzabkowski, 2008: 623) may be illuminated (Herepath, 2014).

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