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Abstract

In the digital economy, the creative industries revolve around dynamic, innovative and often unorthodox collaborations between individuals and organisations. Large, small and micro-businesses often come together for the duration of a project, then disband and form new partnerships for the next project. During such projects, novelty emerges in the form of new products, services, business models or patterns of consumer/producer behaviour. The structure of novelty-creating practices, i.e. the interactions within one-off dynamic project groups is not well understood. Firstly, it spans multiple levels of analysis (individuals, groups, organisations, society); secondly, creativity in the digital domain often has unpredictable outcomes as the availability and potential of technology changes so rapidly. This presents a challenge for research design. Latterly, we have undertaken a stream of research that utilises the theoretical field of entrepreneurship to study the emergence of novelty. Here we extend that work by presenting a conceptual framework that we suggest can capture how novelty emerges over time. Methodologically, we suggest that the framework has analytical potential too, in that it could be used to support effectively the collection of data: ordering and categorising empirical observations concerning how different phenomena emerge over time across multiple levels of analysis and contexts.

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Introduction

We have previously undertaken a stream of research that utilises the field of entrepreneurship to study the emergence of novelty, that is, the processes by which new products, services, business models and patterns of behaviour arise through creative acts. (Fuller et al, 2007; Fuller et al, 2004; Fuller and Warren, 2006a, b; Fuller and Moran (2000, 2001); Lichtenstein 2000a,b,c; McKelvey 2004).As we summarise briefly below, this has been informed by entrepreneurship theories (e.g. effectuation), by constructionist theory (e.g., patterning and identity formation), by critical realism (morphological perspectives) and by theories of social change (e.g. structuration). In particular we have demonstrated the value of complexity theory (notably ‘processes of emergence’) in conceptualising the practice of agility and foresight in the entrepreneurial firms we have studied.

In this paper, we seek to extend previous conceptual work by articulating the development of a conceptually grounded framework that we suggest can capture the emergence of novelty in the creative industries, particularly those in the so-called Digital Economy. As we indicate below, the Digital Economy, through the internet, improved communications and a range of web 2.0 platforms provide enormous potential for the creation of novelty as defined above, in ways that are hard to predict given the unexplored potential of many new technologies and the ongoing pace of technological change. Unexpected new ways of creating value have arisen on a system-wide basis, albeit that revenue streams for many new activities are not well understood or established. Better understanding of how new value creating systems emerge in such landscapes can give us a better understanding of how such processes can be managed and supported, thereby contributing, in a small way, to better understanding of the sustainability of the industries overall.

This is important economically, as the UK is renowned for its creative industries in areas as diverse as music, animation, design, gaming and the visual and creative arts. It has been estimated that the creative industries account for 7.3% of the UK economy, parallel in size therefore to the financial services industry (DCMS, 2007). The livelihood of a growing proportion of UK citizens therefore depends upon the sector maintaining its growth trajectory, particularly in the South East. Together with London and parts of the East of England and South West, the South East region forms a "mega region" of world class significance in relation to the creative economy. The David Powell report (2002) suggests that the creative industries employ more than half a million people in the South East and contribute more than 40 billion to the regional economy. Creative and cultural industries represent around 30 per cent of its GDP, making it our region's fastest growing sector. Good understanding of the challenges and opportunities presented by the sector is therefore important from a regional development point of view.

Yet studying the sector presents challenges:

- Firstly, the ‘creative industries’ are very diverse, spanning a range of interlocking industries, including arts, culture, heritage, media, gaming, performance and occasionally sports; the production of both (aesthetic) artefacts and also surrounding services must also be considered.
- Secondly, developments in digital technology have stimulated new impetus for rapid change over the last decade, presenting unlimited possibilities for new resonances between social practices and values and the techno-creative milieu. For example, disintermediation in the music industry has been made possible through the internet, which allows new experiences anywhere/anytime, resulting in new behaviours in respect of the production and consumption of artistic output. Of course, this has had a profound effect on the power base

in the industry, as old business models have been swept aside – at times, before new revenue streams have been established.

- Thirdly, the creative industries have a distinctive character that challenges traditional models of research into business innovation and entrepreneurship. Specifically, the creative industries revolve around entrepreneurial, innovative and often unorthodox collaborations, whereby numerous large, small and micro-businesses come together for the duration of a single project, then disband and form new partnerships for the next project. This diversity, fluidity, interconnectedness and potential range of novel new combinations for which there may be currently no precedent presents a challenge for researchers, educators and policymakers who want to not only know, but explain, and further, anticipate, what is going on, so that appropriate development and support mechanisms might be put in place. Inevitably then, our research designs must address multiple contexts and levels presenting an analytical challenge to management researchers (Pettigrew et al, 2001).

The vehicle that is allowing us to further test our central argument is www.creatorproject.org. The Creator project is a research cluster funded by EPSRC (EP/G002088/1) as part of the "Connecting Communities for the Digital Economy" initiative, and seeks to investigate and establish new research processes and business models for the creative industries. The Creator cluster brings together practitioners from the creative industries with researchers from varied traditions that span ICT, the arts and humanities, the social sciences, and business studies, with the following aims:

- To define a new long-term research agenda for the creative industries to underpin future collaborations between the ICT research-base and creative practitioners;
- To initiate new inter-disciplinary collaborations among researchers across ICT, the arts and humanities and the social sciences, including business studies;
- To propose and demonstrate new ways of engaging creative end-users, leading to new models of research that can successfully combine focussed ‘practice-led’ creative activity with the need to address long-term research goals;
- To explore new forms of knowledge transfer and innovative business models that reflects the highly dynamic and distributed nature of the creative industries within the UK.

Our approach was to work with actors in live projects in order to examine how novelty emerges over time in dynamic fluid domains where uncertainty is high and outcomes are indeterminate. Firstly, we carried out an internet-based case study of Blast Theory/Rider Spoke, to generate understanding of concepts such as pervasive computing, ubiquitous computing, urban sensing, and the ecosystems surrounding them. Secondly, we carried out interviews and discussions with staff at IT-Innovation, a company involved in developing a new business model for a portal in the post-production rendering industries in Soho. Thirdly, we carried out participant observations of interactions in Proboscis’ Sensory Threads project and the Gesture and Embodied Interaction workshops at Newcastle and Cambridge. We explored how novelty emerged through interactions between the actors in the projects, and how novelty was related to value creation and the possible engagement of [new] external stakeholders.

Theoretical Development

Thus far in our work, our overarching research question has been, How do processes of entrepreneurship result in the emergence of new phenomena (new products, services, value creating systems) in particular social or industry contexts? While the agential dimension of entrepreneurship suggests that acts of creativity are significant in initiating change, the emphasis on context too is very significant. We argue that to remain fit over time in the dynamic, fluid landscape of the creative industries, it will be essential that creative firms constantly organise for novelty in anticipation of new collaborations, new networks and new patterns of consumer behaviour. Those

seeking to engage will have to act on contingency, where strategy is what is possible in an environment where the future is unpredictable e.g. (Sarasvathy 2001), fast moving and contains many actors, artefacts and potential collaborators that may co-evolve in complex non-linear ways. Yet, as Lichtenstein et al (2006) discuss, the study of system-wide dynamics is challenging, as the process can span long periods of time and many modes of activity take place across different contexts (Low and MacMillan 1988). An obvious approach to dealing with this fluidity is to simplify research designs by focussing on one level of analysis, in most cases the individual, the firm or the industry. Yet this can only lead to partial, impoverished pictures of what is surely a far more rich and vibrant milieu. Hence we have turned to complexity theory for a more integrated approach.

Management theorists' interest in complexity theory is based firstly, on complexity's emphasis on order creation in open, non-linear, dynamic systems, a view that resonates with similar themes in organisational theory, and secondly, the potential to theorise (through the notion of emergence) across multiple levels of analysis, such as individuals, firms and the broader environment. Using a metaphorical language for change and development (Lissack 1997), complexity theory has been used in the design of organisational strategies (Burnes 2005; Houchin and MacLean 2005; Lichtenstein et al 2006; Lichtenstein 2000a; Stacey et al, 2002; Stacey, 2003). Concomitantly, the value of complexity theory in theorising entrepreneurship has been recognised (Fuller et al, 2007; Fuller et al, 2004; Fuller and Warren, 2006a, b; Fuller and Moran (2000, 2001); Lichtenstein 2000a,b,c; McKelvey 2004).). McKelvey (2004) contends that this approach is relevant because at a deep theoretical level it is consonant with the creative destruction of Schumpeterian entrepreneurship (Schumpeter 1934), where entrepreneurship is defined as discontinuous change that destroys economic equilibria. Old orders are destroyed, new economic 'orders', are created in contexts that are far from equilibrium. In this vein, 'emergence' is a powerful trope that can capture the way novel structures come into being; in general terms, conjunctions of forces can produce an outcome that is more than, or at least behaves differently from, the sum of its constituent parts.

While the mainstream literature on entrepreneurship includes notions of emergence, in particular the emergence of new enterprises and products, (for example, Busenitz et al, 2003; Fischer et al, 1997; Fleming and Sorenson, 2001; Gartner 1993; Garud and Karnoe, 2001), complexity theory suggests that there are some gaps that merit further study (Fuller et al, 2008). Lichtenstein et al (2007, p. 238-40) argue that there should be more focus on the dynamic processes and conditions that lead to the emergence of novelty, rather than what emerges and when. They argue that interdependent patterns of wide-ranging entrepreneurial activities, rather than individual acts such as creating business plans, are significant in initiating processes of emergence towards novelty. This implies that entrepreneurs must combine advanced thinking processes and time- and life-management skills, sustaining a multi-dimensional focus for many months at a time and by implication, a high degree of entrepreneurial competence, agility and foresight. In the creative industries, they must also maintain high artistic and cultural acumen.

Further, although Fuller and Moran (2001) suggest that these patterns of behaviour operate through multiple hierarchical structural levels, there has also been a tendency to reify entrepreneurship as the activities of individuals (entrepreneurs) within the process. Even where a broader 'system-wide' view is taken, as in Lichtenstein et al (2007), the scope is limited, still largely centring on the individual. Yet, as Low and McMillan (1988) and Aldrich and Martinez (2001) point out, to understand entrepreneurship, one needs to understand the interaction between process and context, strategies and outcomes. There are a few studies that analyse organizational emergence and entrepreneurial behaviour related to the embeddedness of entrepreneurship, drawing on sociological theory such as Giddens' structuration theory (e.g., Jack and Anderson, 2002), the concept of structural embeddedness (e.g., Simsek, Lubatkin and Floyd, 2003) or institutional approaches (e.g., Smallbone and Welter, 2006) and social constructionist approaches (Fletcher, 2006; Down, 2006),

and in doing so, they add different contextual viewpoints, albeit implicitly. However, this question of multiple levels of analysis and multilevel theory building is still a key issue for entrepreneurship research (Davidsson and Wiklund 2001; Phan, 2004) in particular because of the widening contexts in which both discourse and the practice of entrepreneurship are engaged, for example in corporate and public contexts as well as individually founded firms. Given the economic and political significance of the creative industries agenda, the need to develop entrepreneurial competence and improve outcomes is clear.

The above discussion suggests that it may be useful to research how patterns of behaviour that span process and context arise, leading to better understanding of how novelty emerges in entrepreneurial firms. While complexity theory suggests that it is not possible to predict or determine outcomes in advance, Snowden (2002), Stacey (2003) and Lichtenstein et al (2007) suggest that understanding how meaningful patterns of behaviour emerge over time in a system-wide manner can enhance the likelihood of desirable outcomes through increasing performance generally. These patterns impact systemically at the firm level and beyond, through a wider network of stakeholder relationships that are mediated by the social and cultural relations in and surrounding the firm. For the creative industries, there can be tensions around the notion of realising economic value from artistic, cultural or creative endeavour, particularly where the content is seen as subversive, or critical of the financial or political establishment.

Of course, the power to achieve a particular stated goal is limited for any small firm or collaboration, particularly in dynamic industries dominated by influential incumbents, (unless it controls the market entrance of a disruptive innovation: Christensen, 1997). Entrepreneurs have to act on contingency, where strategy is what is possible in an environment where the future is unpredictable e.g. (Sarasvathy 2001), and often dominated by large firms and fast-moving technological and industrial standards that co-evolve in complex non-linear ways (Garnsey and Heffernan 2005). Yet to remain fit over time, it is essential that the entrepreneurial small firm constantly organises for novelty in anticipation of industry change, particularly in high-velocity industries where uncertainty is high. Lichtenstein (2000b) shows how in each of four high technology business start-ups the business model had to be changed several times before becoming stable, relative to an unstable and unpredictable environment.

Fuller et al (2004) and Fuller and Warren (2006a,b), and Fuller et al (2007) have reported 4 inter-related behaviour patterns, or 'processes of emergence' that lead to the emergence of novelty in entrepreneurial settings in different industries: new business models, new products, new careers. These processes of emergence, set out in Table 1, have been characterised as the 'EROS' model – Experiments, Reflexivity, Organising, Sensitivity.

Insert Table 1 about here

The processes in Table 1 should be seen as interconnected, not separate, and we argue that it is the multi-dimensional concentration on these patterns of behaviour that is at the heart of entrepreneurial competence through effective strategising over time to produce a *sustainable* endeavour. The four EROS processes interact to produce new emergent structures over time. Each process inter-relates with the other through multi-layers of cognition, language, performance and relationships with others, albeit strongly influenced by the entrepreneur. Further, on examining the 'stability' of a firm that had been in existence for about 20 years in a fast moving environment we concluded that its ontology at periods in that history was manifest in an ongoing set of temporary stable emergents and ephemeral structures, reflecting Sawyer's (2005) 'Emergence Paradigm' of social structures that (influenced by Archer's work, 1995) posits a hierarchical model of individual, interaction, ephemeral emergents, stable emergents, and social structures (see Figure 1).

Insert Figure 1 about here

We have identified such temporary structures in our early empirical work in this domain. They seem to include particular business models, particular identities, particular dominant logics, particular triggers for change etc. Within that milieu, some were more stable than others and became part of the business; others initially commanded intensive resource and attention, but were not developed through to fruition. Nonetheless, even ephemeral and unstable structures that did not persist, exhibited ontological status and considerable causal power – at least for a time, as the firm sought to make its way forward in a highly uncertain environment. There was a dynamic tension, the self-identity of the entrepreneur and the identity of the firm which was highly stable and causal to the dynamics and direction of the firm. Similarly, the ‘stable’ structural nature of economic systems provided a constraining framework (you have to make profits, pay staff etc.). However the instability of the industry, created mainly by new technology, deregulation and therefore greater competition provided a downward causation on the (in)stability of the emergents of the firm, for example, on their everyday practices, everyday discourse patterns, types of collaboration, potential new projects and the intentions of the entrepreneurs involved.

The relation suggested in our research between the entrepreneurial mechanism provided by the EROS processes and the ontological emergence of novel structures led us to propose the model combining the two, which is set out in Figure 2.

Insert Figure 2 about here

We suggest that this model has considerable analytical power with regards to understanding the production of order at multiple levels and the articulation of types of pro-active processes that are associated with the construction of order in practice. This approach, we argue, may benefit the study of entrepreneurship as a class rather than a set of sub-disciplines (Thornton, 1999), not only in a conceptual sense based on a rigorous treatment of emergence, but also by providing a methodological framework too. As stated earlier, there are few empirical studies which have explored facets of entrepreneurial embeddedness in the wider context of society – in part because of the methodological challenge.

If we are to study the dynamics of volatile new industries, we need to address the problem of making sense of multiple observations across different levels and showing linkages between levels as new structures (products, services, business models, value creating systems) emerge over time: an issue not just for the practicalities of our project, but also for entrepreneurship researchers generally. Growing awareness of processual theories of entrepreneurship (Steyaert, 2007) have resulted in more sophisticated methodological approaches that relate the activities and behaviours of individuals over time to the firm and other contextual factors. Yet thus far, there has not been a methodological approach that has taken advantage of the possibilities offered by rigorous theoretical conceptualisations of emergence. Pettigrew et al (2001, p. 698) have highlighted that the issues of multiple contexts and levels is a major analytical challenge for the study of organisational change: a key issue is, however, how many levels of context should be considered, and how many multiple processes do we include in our analyses? While we would not claim that our model (Figure 2) solves the problems of the social sciences that Pettigrew et al are addressing, the 4 processes that we have identified (Fuller et al 2006a,b) are grounded in empirical observations of entrepreneurial firms. This suggests that we have gone some way to capturing an entrepreneurial mechanism in the cases considered, that spans the individual, firm and industry network levels of analysis. It is therefore attractive to consider whether the model could be used as a framework to capture data concerning multiple observations at multiple levels of analysis over time, thus adding methodological value, as well as theoretical explanatory power (Fuller et al 2008).

Developing an empirical testbed in the creative industries sector

Acts of individual creativity that result in artistic, social or cultural capital may not in themselves realise economic value, or be widely available, reproducible or disseminated as products or services outside the initial act of creation. In this case, the ‘value creating system’ that has emerged may be of enormous artistic significance, but the economic potential remains – perhaps intentionally so – untapped. Thelwall (2007) refers to such ‘first order’ activities, where endeavour is intrinsically linked to the human labour involved, and is therefore inherently non-scalable. Here, the expertise of senior individuals is the core asset upon which success is based; it is unlikely that such resources as these can be replicated in line with the requirements of further growth within the sector. This is in contrast to ‘second order’ activities, such as buying the CD of a music performance where scalability has been achieved through removal of the expert skills through reproduction to meet consumer demand and spread appreciation.

In moving from first order to second order activities, the value creating system is inevitably extended to include more actors with different sets of values, vocabularies and discourses, as the dynamic between converting artistic, cultural and intellectual capitals to economic capital is explored. Of course, this transition from first order to second order activities is not necessarily innovative, or entrepreneurial, if ‘traditional’ business models are at the heart of the process: discussions tend to focus on contractual arrangements around established costs and revenues in accordance with likely consumer demand (Caves, 2000). Such systems are well-understood, stable, with relatively predictable inputs and outputs. However, as we have stated earlier, new digital technologies have thrown up innovative new possibilities that can challenge, disrupt and may even overthrow existing revenue streams and industry patterns. It is this indeterminacy of outcome, the dynamic and unpredictable, the unknown shape or character of scalability in new industries, and how it will be achieved, that resonates with the tenets and underpinning assumptions of complexity theory. And it is here that we believe our framework has the methodological potential to capture and make sense of multiple observations across different levels of analysis and show linkages between levels as new phenomena (products, services, business models) emerge over time. We argue that in identifying and linking the unstable and ephemeral emergents that inevitable arise during creative collaborations – the twists and turns, unformed explorations, failed experiments, discarded and retained ideas -- to entrepreneurial, processes that preserve artistic and creative value, we can gain much improved insight into how creative individuals operate and achieve sustainability in conditions of high uncertainty. Thus we asked the questions:

1. Does the framework coherently and comprehensively theorise the linkage between entrepreneurial processes and emergent ontologies produced in the creative industries context?
2. Does it support effectively the collection of data of ordering and categorising empirical observations concerning how different phenomena, such as new products, services, firms, networks, patterns of behaviour, careers, identities, emerge over time across multiple levels of analysis?
3. How are these observations best linked to improving practitioner competence and sustainability of the industries overall?

Outcomes

Clearly, being involved with projects as rich as those presented by Sensory Threads, Gesture and Embodied Interaction, and IT-Innovation has afforded us a rich stream of data and connections that will take many months to analyse. In this limited space, it is only possible to identify some preliminary outcomes that are nonetheless highly promising. Using our conceptualisation and our framework, we were able to identify and track the emergence of ‘stable emergents’:

- Sensory Threads: the 'Rumbler' a novel interactive soundscape device
- Gesture: a unique combination of skill-sets in the sound/motion capture domain, supported by robust code
- IT-Innovation: a potential business model as yet untested

These 'stable emergents' arose during the period of the projects from very early stage ideas that were not well articulated at the outset of Creator. As discussions in the rich interdisciplinary milieu progressed, possible trajectories were identified and tested out, either as thought experiments, shared metal models, or sometimes as rough working prototypes. At some point, these 'ephemeral emergents' were narrowed down to the most promising variant: at this point the transition from ephemeral to stable occurs. We would moot that this is the point at which discussions shift from value creation to value capture. This is a significant outcome that with in-depth discussion can be developed into a significant contribution to the entrepreneurship and innovation literatures.

Conclusion

In conclusion then, the paper is a conceptual one grounded in previous empirical work. It assesses to what extent we have been able to resolve at least some of the methodological concerns raised at the outset of this discussion. Through testing our framework, we will be able to assess to what extent there is the potential to capture, in principle, the emergence of any novel form, be it product, service, new business model, firm, or behaviour in the creative industries sector. Thus, we hope to demonstrate the benefits of a methodological approach that has taken advantage of the possibilities offered by rigorous theoretical conceptualisations of emergence. In doing so, we hope to gain insight into how creative individuals and groups achieve sustainability that will be valuable to policymakers, practitioners and educators.

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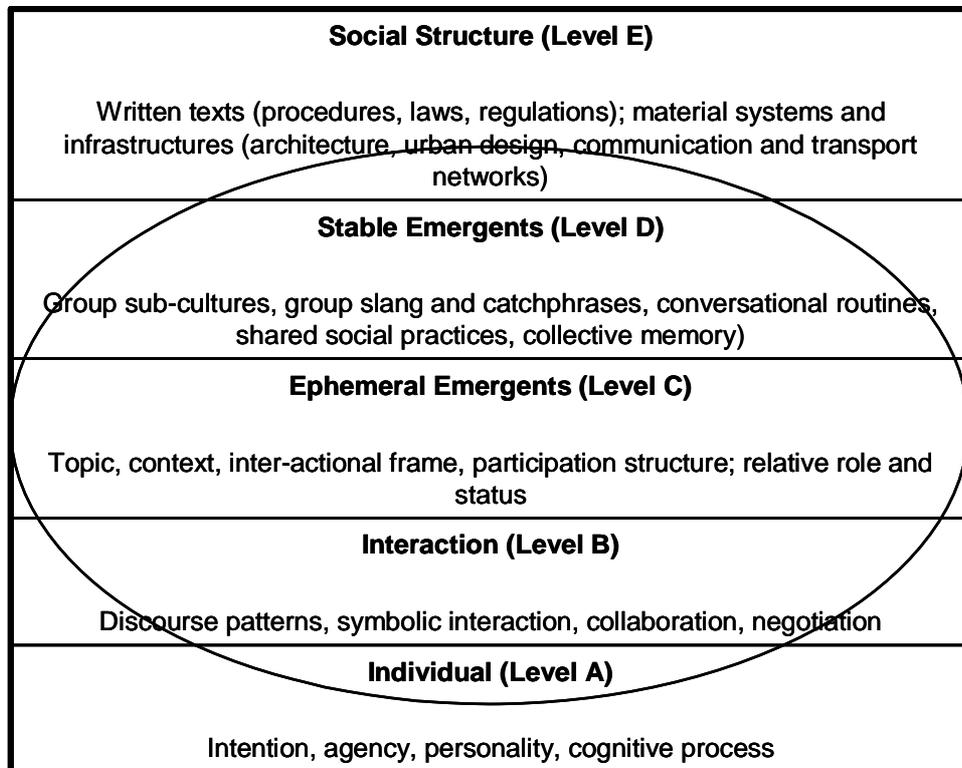
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Table 1: EROS Processes of Emergence

Process	Behaviour
Experimenting	Diverse exploratory behaviours that might (or might not) become part of the firm over time; new things tried out in often very informal ways, small scale; often developed through exploration of social interactions; shared experiential learning across project teams and stakeholders; ‘what works’
Reflexivity	Continuous reflection on the identity of the firm and the self-identity of its owner(s) through the discourses within the business and with stakeholders; vision setting through narratives of self and firm; ‘who we are’
Organising	Organising around a dominant logic (or project); patterns established through negotiated practice; pattern-making and pattern-breaking; ‘what needs to be done now’
Sensitivity	Interpretation of shifts in industry landscape; detection of difference; weak signals; triggers and thresholds for change; ‘what we might do’

Figure 1

Figure 1. The Emergence Paradigm.



The Emergence Paradigm (Sawyer 2005, p211), showing the 'circle of emergence' (p220), i.e. that area which is subject to social emergence

Figure1. Entrepreneurial mechanisms in the context of Sawyer’s Emergence Paradigm

	Experiments	Reflexive identity	Organising domains	Sensitivity to (changes in) conditions
Social Structure (Level E)	The stability of social structures enables relative experiments to take place	Stable structures will provide grounding to self-identity. Also will create tension as between structures	Much will be ‘taken for granted’, such that stable emergents are seen as innovative and/or threatening	By definition, stable social structures will be resilient to change
Stable Emergents (Level D)	The results of ‘successful’ experiments, is ones supported by social action	Sense of self in context, both personal and at the level of the firm	Dominant logic clear through regular discourses and habitual actions	Perhaps identified as challenges or threats to stability
Ephemeral Emergents (Level C)	Whether as thought experiments, discussions or as short term practice, the transient nature of these emergents are a key part of ascertaining the legitimacy of particular sets of actions	The shaping of the individuals sense of self and the (new) ventures sense of self within the context of existing markets etc.	The salient organising domain is that of ‘experiment’, i.e. a overt reflexivity that links stability with instability	The ephemeral emergents are the manifestation of the sensitivity of the individual and organisation
Interaction (Level B)	Interactions in experiments are constrained by existing emergents and structures. The introduction of new discourses and meaning into the firm from external structures (e.g. new industries or new technologies) produces changes in interactions and emergents.	Discourse patterns for example, are both part of a the maintenance of identity and the renewing of expressed identity.	Discourse has been used to identify ephemeral and stable emergents in entrepreneurial practice	Interactions provide a mechanism of sensitivity to external conditions
Individual (Level A)	Entrepreneurial intention is seen as an important motivating reason for entrepreneurial action	Self-identity can form a stable emergent and in this model provide bottom up causality of emergence	Intention and personality have causal influence on emergence in entrepreneurial settings	The individuals cognitive awareness and openness to change / resilience will be causal to emergents